UNDERSTANDING CORE RESILIENCE ELEMENTS AND INDICATORS

A COMPREHENSIVE REVIEW OF THE LITERATURE

Linda Liebenberg, PhD
Everfair Evaluation &
Research Consulting Inc.

Natacha Joubert, PhD
Mental Health Promotion Unit
Centre for Health Promotion
Public Health Agency of Canada

Marie-Lynne Foucault
Mental Health Promotion Unit
Centre for Health Promotion
Public Health Agency of Canada

Table of Contents

EXECUTIVE SUMMARY

Promoting the mental health of Canadians and strengthening public health capacity for mental health surveillance are key components of the Public Health Agency of Canada's (PHAC) mandate and priorities. The promotion of population mental health focusses on fostering individual mental health through the development of resilience and resourcefulness (i.e. individual assets) and creating supportive and resourceful environments, communities, and life settings (i.e. relational/contextual resources). This report seeks to expand the understanding of core resilience elements and indicators in order to improve Canada's capacity to promote the mental health of Canadians across the life span.

Existing knowledge on individual resilience is mostly issue-based (e.g. child abuse and maltreatment, violence, behavior problems, mental illness, trauma, etc.), disparate and focused on adversity and external factors and resources (i.e. psychological support, social support networks, child welfare systems, etc.). For this reason, this report explores the concept and measurement of resilience from an "inside-out", developmental (life course) and population mental health promotion perspective, through a critical review of the literature. Its core aim is to refine our understanding of key, consensual elements and indicators that promote resilience. Guiding the report is the following working definition, developed by the authors of this report based on previous research on resilience and mental health promotion, including an initial exploratory review:

> *"As a developmental process,* ***resilience*** *primarily involves the* ***agency****, or inner capability of individuals of all ages, to call on their internal strengths, engage with others and look for external resources to successfully transform stressful situations or adversity into opportunities to learn and thrive."*

The ***objectives*** of this work include the following:

1. To describe the current thinking and state of understanding on individual resilience throughout the life course (i.e. in infants, children, youth, adults and older adults);
2. To identify common, consensual elements within the diversity of existing definitions and measurements;
3. To conduct an in-depth analysis of this literature review to further our understanding of and thinking around a) the concept of resilience and b) the measurement of resilience, to develop a basic set of resilience indicators across the life course; and,
4. To discuss the implications of these findings for further work, most notably mental health and resilience surveillance as well as mental health promotion policy and programs.

Key Elements and Measures

The literature review indicates that:

the phenomenon of resilience is predominantly understood as 1) an interactive process; 2) dependent on both individual assets as well as contextual (including physical) and relational resources located in the environment; and 3) occurring in contexts of acute and/or chronic stress.

- the components that facilitate resilience processes are referred to as "assets" and "resources" in the literature. *Assets* are mostly linked to individual level protective factors, or inner resilience processes, while *resources* are linked to contextual and relational components located in the individual's environment.
- there are three (3) broad consensual elements of resilience:
    i. *individual assets* which include for example agency and meaning-making processes, executive function, problem solving skills, and competence. Note: A fairly consistent group of assets emerge in infancy and are required across the life course. These assets are significantly shaped by interactions with others and with environment. Which assets will protect the individual and/or promote positive mental health outcomes is very much shaped by culture and context. From a developmental and life course perspective, the expectation is that these various assets will grow and develop over time, thereby increasing an individual's capacity to successfully manage adversity.
    ii. *relational resources* which include relationships that are stable, trusting, supportive and nurturing. Note: These resources are required across the life course, irrespective of developmental stage and/or culture and context. Simultaneously, individuals require relationships that provide access to a variety of contextual resources.
    iii. *contextual resources* which include for example health resources, formal and informal educational resources, safe housing and cohesive communities. Note: While these resources are required across age groups and across various contexts, the ways in which these resources are required, appears more strongly impacted by context and events than by age.
- it is clear that interaction between the individual and the external resources shapes personal agency or the individual capacity to successfully manage challenges, be they acute or chronic (i.e. an ongoing part of daily life). It is equally clear that the ways in which these interactions are protective and promotive, or harmful, will depend on the unique blend of individual and contextual factors at play in a given time.
- research highlights the importance of understanding resources and defining "good outcomes" in ways that are relevant to the context and culture in which resilience and outcomes are being considered.
- six measures have been identified as relevant to a Canadian multicultural context, across the lifespan. Significant validation work has been conducted on all these measures. Three measures assess *trait resilience*: The Connor-Davidson Resilience Measure (CD-RISC); Wagnild and Young's Resilience Scale (RS); and The Brief Resilience Scale. The other three assess *process resilience* or multilevel interactive resilience resources: The Resilience Scale for Adults (RSA); The Resilience Scale for Adolescents (READ); and The Child and Youth Resilience Measure (CYRM-28). The later three most closely reflect the consensual resilience elements identified through this review.

Expanding Current Thinking on Resilience

Based on the findings of this report, we conclude that:

- resilience theory reflects developmental theory, however it differs from the latter in that it situates human functioning in contexts of adversity. Seen in this way, as individuals age, or develop, the interactive experiences they have had with relational and contextual resources – both good and bad – entrench the strategies they use to manage stress. Rather than negate the importance of contextual resources, this finding emphasizes the importance of understanding how previous developmental experiences, exposure to adversity and resilience processes, have shaped the ways in which individuals will understand and make sense of their experiences, as well as how they will engage with and draw on their available resources at particular moments in time.
- at the center of the resilience process is personal ***agency***, a *key* individual asset which includes individuals' **meaning-making frameworks** and **meaning-making processes** as well as the capacity to decide and act in a given environment. Note: In this report, our understanding of the term "agency" extends beyond its traditional definition as the *"capacity to act*", and includes additional capacities of *meaning*- and *decision-making* that are implied within individuals' capacity to act. Hence, meaning-making frameworks and meaning-making processes are understood as those essential mechanisms in the enactment of agency which will guide the use of resilience assets and resources to achieve and maintain positive mental health.
- ***meaning-making frameworks***, or individuals' beliefs about the world, provide a frame of reference to help make sense of daily experiences, including understanding and interpreting the challenges and adversities that they will need to manage. ***Meaning-making processes*** are the ways in which individuals make sense of daily life experiences and choose to manage the various challenges and adversities they encounter. Because these frameworks and processes are developed and shaped by social interactions, they are flexible and can be changed.
- relational resources are important in facilitating the development of competence skills required for individuals to exercise personal agency and move towards positive psychosocial outcomes. Supportive and trusting relationships play a key role in nurturing individual assets and assisting in the navigation towards the contextual resources necessary to foster and sustain positive outcomes. Similarly, contexts will impact which resilience resources are drawn on more heavily in resilience processes. For a multicultural society such as Canada, this is a crucial aspect to account for in policy and service delivery.
- within this interactive, multilevel developmental process, meaning-making becomes central to personal agency which guides individuals' choices and decisions about what resources and processes to engage with or not. These decisions will in turn impact subsequent mental health outcomes. Additionally, meaning-making processes develop and evolve within a

social interaction cycle where childhood interaction and related experience with others shape how individuals interpret their subsequent experiences.

- overtime, individuals' thoughts and beliefs build their understanding or interpretation of their experiences with others and the world. Ultimately, the meaning individuals attach to events and potential resources rests with them. This meaning is, however, informed by their other personal assets i.e. agency, cognitive skills, creative thinking and those mentioned above. The combination of personal assets, the meaning attached to resources and the meaning attached to events shapes the pathways individuals (and communities) will take to achieve a particular set of health-related outcomes.
- when formal service delivery systems consider individuals' meaning-making frameworks as their starting point, important barriers to service effectiveness as well as crucial individual assets and contextual resources can be identified to enhance service delivery and potentiate individuals' agency i.e. inner capability.
- while this complex interaction of individual and contextual resources, as part of a process supporting positive mental health outcomes, poses challenges in terms of measurement, three measurement tools have been identified that account for this complexity. Although these measures require additional validation and strategic measurement plans, they may still be used to assess resilience as a component of mental health. Note: Measurement plans include the use of qualitative and quantitative research data, together with longitudinal designs. Additionally, in order to ensure greater validity and relevance of findings, assessment efforts need to factor in contextually relevant adversity and indicators of positive mental health outcomes.

Fundamentally, individual resilience processes across the life course are enabled by the interplay between the individual's agency and the outer world. This interplay takes place as a result of the following key resilience components introduced in the above-noted working definition:

- personal agency, and related meaning and decision making as key individual assets that support an individual's ability to access other individual assets;
- an interactive process where the individual has the ability to engage with others (i.e. parents, peers, mentors, etc.) as well as access contextual resources; and,
- the resulting capacity to successfully navigate adversity, challenges or risks, to achieve and maintain positive mental health outcomes.

INTRODUCTION

Purpose

This report explores the concept and measurement of individual resilience from an inside-out, developmental (life course) and population mental health promotion (PMHP) perspective[4,5,6], in order to improve Canada's capacity to promote the mental health of Canadians across the life span. With the goal of strengthening population mental health and preventing numerous psychological and behavioural problems, PMHP focuses on fostering individual mental health through the development of resilience and resourcefulness (i.e. individual assets), and creating supportive and resourceful environments, communities, and life settings (i.e. relational and contextual resources).

This comprehensive review of the academic literature on resilience (2005 – 2017) reflects findings from existing research and theory to identify and/or confirm common, consensual elements among the plethora of existing definitions and measurements of resilience. Specifically, the core aim of this report is to refine our understanding of key, consensual resilience indicators that promote individuals' capacity to achieve and maintain good mental health outcomes. As well, the report will serve to inform a framework of indicators for individual resilience, and provide a critical foundation for future work conducted by the Public Health Agency of Canada (PHAC) to assist in advancing the development of mental health promotion, surveillance, research, policy and interventions.

Objectives

1. To describe the current thinking and state of understanding on individual resilience throughout the life course (i.e. in infants, children, youth, adults and older adults);
2. To identify common, consensual elements within the diversity of existing definitions;
3. To conduct an in-depth analysis of this literature review to further our understanding of and thinking around a) the concept of resilience and b) the measurement of resilience, in order to develop a basic set of resilience indicators across the life course; and,
4. To discuss the implications of these findings for further work, most notably mental health and resilience surveillance as well as mental health promotion policy and programs

Background

Recently, all levels of government in Canada have concluded that promoting the mental health of the population is a key health, social and economic investment for all Canadians[4]. Consequently, promoting the mental health of Canadians and strengthening public health capacity for mental health surveillance are both part of the Public Health Agency of Canada (PHAC) mandate and priorities[5].

The promotion of positive mental health provided the impetus for the development of PHAC's *Positive Mental Health Surveillance Indicator Framework (PMHSIF)* (2015)[6]. The youth version of the PMHSIF is specific to 12-17 year olds; and, the adult version of the framework is for individuals 18 years and older. The intent of this framework is to provide information on positive mental health outcomes and its associated risks and protective factors. It includes a core set of indicators grouped

by outcomes and four key domains: individual, family, community and society level determinants. The framework enhances existing data on mental health of Canadians and their capacity to better manage normative, daily hassles such as financial pressures, school and workplace adversity, lack of health services, social support, and so forth. The chronic nature of these stressors is reflected in, amongst other things, the increase in mental health concerns seen among Canadians.

The conceptual approach guiding this work is a working definition, developed by the authors, based on previous research on resilience[7–9] and mental health promotion[1–3,10], including an initial exploratory review (see Appendix A):

> *"As a developmental process,* ***resilience*** *primarily involves the* ***agency****, or inner capability of individuals of all ages, to call on their internal strengths, engage with others and look for external resources to successfully transform stressful situations or adversity into opportunities to learn and thrive."*

The increase in chronic stress experienced by many Canadians[11] motivates us to ask what lessons can be learned from the field of resilience research. Widespread interest in this project has been expressed by relevant, PHAC and Health Canada partners (See Appendix A). However, within the broader Canadian public health sector, current interest in resilience is primarily driven by the need to resolve serious mental health issues (e.g. neglect, violence, substance abuse, child maltreatment and trauma) among various at-risk populations (e.g. children and youth, women and Indigenous groups, first responders), as well as potential, life-threatening problems (e.g. the recovery of communities from natural or man-made disasters). Consequently, existing research and knowledge on resilience is mostly issue-based, disparate and focused on adversity and external factors and resources (i.e. psychological support, social support networks, child welfare systems, etc.).

The resilience literature also shows that there is very little fundamental research on the underlying foundations of resilience across various groups of individuals (in terms of race, ethnicity, culture, age, etc.), foundations that make it possible for all individuals to draw from both their internal and external resources, and to transform day to day life stresses and hardships into opportunities to learn and thrive.

This Report

This report will present the key findings from a recent review of the resilience literature. The broad consensual elements of resilience that are relevant to the promotion of mental health are discussed based on whether they are *individual*, *relational* or *contextual*. These resilience elements are also discussed in terms of their relevance across various developmental stages (i.e. infant; child; youth; adult; senior). Importantly, the intent is to identify the common elements of resilience that promote positive mental health outcomes within a Canadian population.

As such, the findings of this literature review will establish a comprehensive overview of these elements as they relate to Canadian heterogeneity. The literature reviewed includes, but is not limited to, research of resilience as it pertains to LGBTQ populations, immigrant and refugee populations, Indigenous communities, African-Canadian communities, and research with a focus on

race and/or ethnicity as it pertains to other groups within the Canadian context (for example, Asian, South Asian, Middle Eastern, African, etc.).

Similarly, risks related to extreme stress, trauma, contexts of violence (including community violence, gang violence and conflict or war) as well as risks related to living in low socioeconomic contexts are included. Note: As the focus is on those resilience elements that are of relevance across various groups, findings are not discussed with a focus on any specific population, community or issue.

Finally, resilience research is showing that sufficient adversity will ultimately impact people negatively[12–15]. Resilience research integrating allostatic load (i.e. the physiological impact of stress on the body[16]) in particular, underscores that some traumas are simply too "toxic" to easily recover from[17–22]. This report's discussion of resilience as a promotive factor in positive mental health outcomes does not negate the fact that some people may experience an excess of trauma that makes their recovery extraordinarily challenging.

METHODS

The purpose of this literature review is to identify the common, consensual elements among the plethora of existing definitions and measurements of resilience. The strategy used for this review is outlined in Figure 1. The process began with a review of the following electronic bibliographic databases:

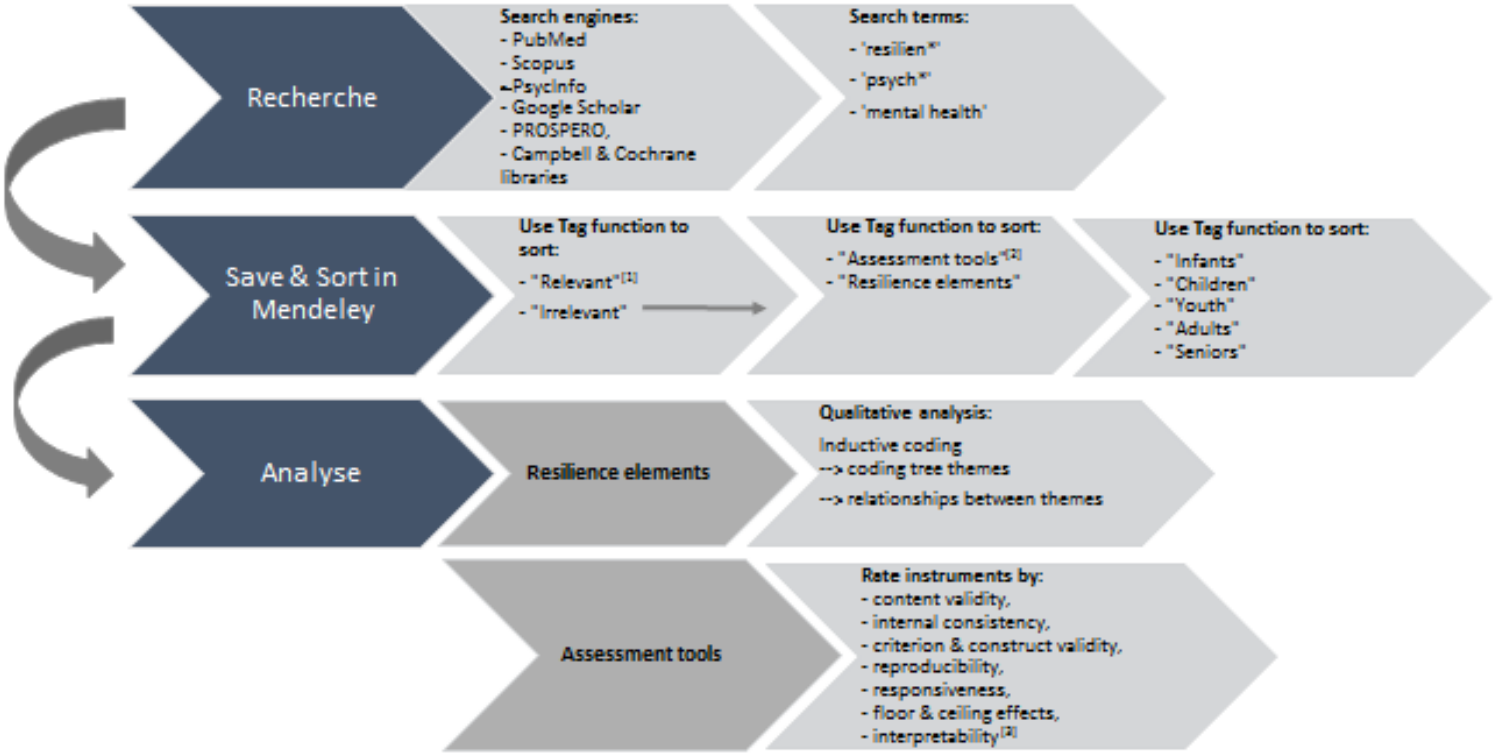
- PubMed,
- Scopus,
- PsycINFO,
- Google Scholar,
- Prospero,
- Cochrane libraries, and
- Campbell libraries.

The search terms "resilien*", "psych*", and "mental health" were used to guide the search. These terms were selected to 1) align with the focus of the review (resilience elements related to psychological outcomes of mental health); and 2) be as expansive as possible within this focus (therefore the use, for example, of "resilien*" rather than "resilience", "resiliency" or "resilient").

The search for publications, focused on resilience elements, was restricted to publication dates between 2005 and 2017. Note: As the review of resilience measures or assessment tools builds on Windle, Bennett and Noyes[23] 2011 review of resilience measures, relevant publications were included if they were published between October 2010 – December 2016.

Retrieved documents were stored in the reference manager program, Mendeley, and sorted into "relevant" and "irrelevant" using the tag function. The sort was guided by the following criteria:

Figure1. Review Methods and Process



1. Criteria:
a. Published between January 2005 and January 2017:
b. Focuses on resilience as proponent of mental health (rather than school engagement for example);
c. Reviews resilience assessment tools; and/or
d. Elucidates resilience elements rather than for example framing a study and its findings within existing understandings of resilience.
2. Publications between October 2009 and December 2016 that review resilience assessment tools
3. Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and quality of life outcomes, 9*(8). Retrieved from http://www.hqlo.com/content/9/1/8

1. Publications were required to focus on resilience as a proponent of mental health, rather than a function for example, of employment or educational outcomes.
2. Additionally, publications were required to a) review or discuss resilience measures or assessment tools; or b) elucidate resilience elements (rather than frame a study within an existing resilience framework).

Publications tagged as "relevant" were sorted into articles pertaining to 1) "resilience elements" or "assessment tools"; and 2) developmental stage (i.e. infant, child, youth, adult, and seniors).

Once retrieved and sorted, the publications were reviewed and analysed using two approaches. With regards to resilience elements, inductive coding was used to develop themes. This process was shaped by the core focus of this review: identifying consensual resilience elements across the lifespan. Hence, the themes reflect the emerging conceptual elements of resilience captured in the key words of this report. With regards to the relationships among themes, the inductive process allowed for the identification of resilience elements as well as the functioning and interactions among these elements.

Publications focused on assessment tools were assessed using the same criteria as that of Windle and colleagues, that is: content validity, internal consistency, criterion and construct validity, reproducibility, responsiveness, floor and ceiling effects, and interpretability (see Table 2).

Table 1 shows the numbers of articles identified within each electronic database; the number selected for potential review; and, those included in the final review. This information is grouped according to publications related to resilience elements and those related to the assessment of resilience.

Table 1. Summary of document retrieval

	Resilience elements			**Resilience assessment**		
Source	*Identified*	*Selected*	*Included*	*Identified*	*Selected*	*Included*
Google scholar	529	47	34	643	91	51
Scopus	3402	240	146	203	36	17
Psycinfo	787	94	50	212	26	10
PubMed	732	75	46	111	10	7
Prospero	29	0	0	0	0	0
Campbell	0	0	0	0	0	0
Cochrane	6	4	0	0	0	0
Other	0	67	50	0	3	1
TOTAL	5485	527	326	1169	166	86

LITERATURE REVIEW

Defining Mental Health

Before considering the elements of resilience as identified through this review, it is necessary to consider and define mental health. This is important because the positioning of mental illness within the realm of resilience research remains problematic. In some studies, mental illness is considered as an adversity to be navigated and overcome. In other studies, it is considered as an outcome, and specifically as a poor or negative outcome. Such disparity in mental illness as a variable in resilience research is reflective of the numerous definitions of resilience and the related ambiguity in understandings of resilience indicators[24–29]. Consequently, it is necessary to state that **this review explores resilience with the goal of supporting mental health (as opposed to mental illness) as an outcome**, rather than an indicator, of resilience. Put simply, resilience provides a support platform to the achievement and maintenance of positive mental health.

PHAC defines mental health as *"the capacity of each and all of us to think, feel and act in ways that enhance our ability to enjoy life and deal with the challenges we face. It is a positive sense of emotional and spiritual well-being that respects the importance of culture, equity, social justice, interconnections and personal dignity."* In this respect, mental health is not limited to the absence of illness and the presence of personal wellbeing because it also includes:

- positive social engagement (as reflected, for example, through healthy interconnections and relationships), and
- positive community engagement (as reflected, for example, through the experience of social justice and engagement in education, employment and civic engagement).

Similarly, and as reflected in dominant models pertaining to social determinants of health[30,31], an individual's mental health is impacted by:

- personal experiences,
- inherited or biological factors,
- social and economic circumstances,
- culture, and
- political environment[32].

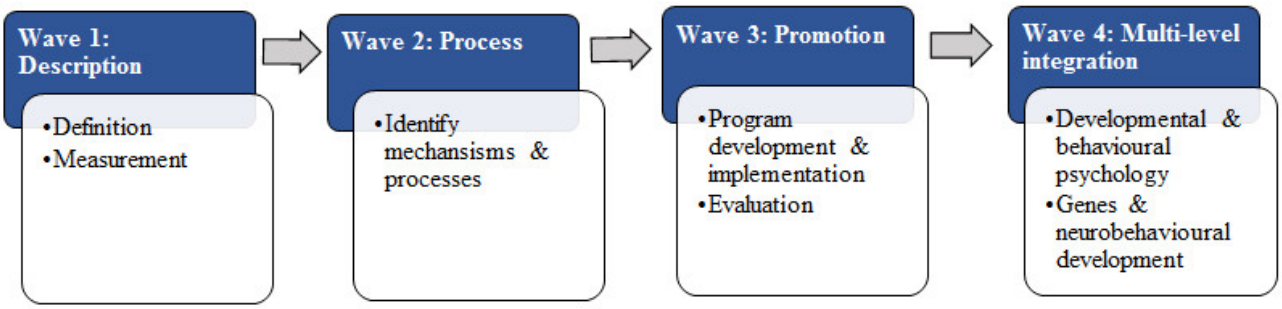
PHAC's definition of mental health guiding this report, calls for a review of resilience as a phenomenon that supports the healthy function of the whole person[33–35]. A key aspect of this consideration however, rests in the phrase "the capacity of each and all of us to think, feel and act" in response to the mental health challenges experienced over the life course. Achieving and maintaining mental health requires that people *draw* on their inner resources. Since mental health is reflected in the ways that we manage challenges, we understand resilience as a key promotive

component of mental health which supports individuals' capacity to overcome challenges that threaten mental health.

A Brief Overview of Resilience Research

While the field of resilience research is young, it is certainly not new or novel. The literature predating 2005 reflects a solid scientific legacy within the field of mental health research and is summarised in Figure 2. While the discussion of consensual resilience elements related to mental health as presented in this report accounts for this full legacy, it focuses more specifically on findings and theory emerging from Wave 4.

Figure 2. The History of Resilience Research (1970's to date)[36]



Based on an extensive body of research, Masten[34] recently concluded that resilience is best defined as "the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development" (p. 10). Similarly, following their own review of the literature, resilience has been defined by various authors as

> *... the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity*[37]
>
> *... a process of overcoming the negative effects of risk exposure, coping successfully with traumatic experiences, or avoiding the negative trajectories associated with risks*[38]
>
> *... a dynamic process encompassing positive adaptation within the context of significant adversity*[39]

These recent definitions mirror and expand upon those from earlier resilience research[39–48]. Stated differently, while newer studies place emphasis on process, interaction and contextual resources, they continue to include notions of improved or healthy outcomes in the presence of *non-normative* stressors and adversity[49–53]. Across all these definitions, contexts of *non-normative adversity,* therefore, remain a central aspect of current resilience research and theory. Furthermore, risks and adversity are understood to be heterogeneous and originating from either the individual and/or the environment.

Research reviewed between 2005 and 2017 (including reviews of earlier research) clearly demonstrates the phenomenon of resilience as:

1) an interactive process;
2) dependent on both personal assets as well as relational and contextual resources from the environment; and
3) occurring in contexts of acute and/or chronic stress (often referred to as non-normative stressors).

Attention is increasingly being given to the relative nature of resources, and outcomes. How "resources" are understood and what indicators of "good outcomes" are established, are highly dependent on the context and culture in which risks, resilience and outcomes are being considered[54]. The extent to which contexts value, for example, individuality or collectivism will impact which resilience resources are made available and sought after more heavily by individuals living there[55,56].

Similarly, underlying the various definitions of resilience is a consideration of how the individual is doing in relation to established norms or expectations[34]. As such, the caution of authors such as Luthar and colleagues[39,46] together with a growing community of researchers[7,28,57–59], is to ensure that indicators included in research or practice are appropriate to both the context and the adversity examined.

In addition to cultural and contextual considerations of relevance, research also demonstrates the variability with regards to gender and related outcomes[8,60–64]. This complex and interactive understanding of resilience mirrors risk-focused research which acknowledges the role of environmental factors and emphasises an understanding of how context shapes and impacts risks[33,34,65].

Two Broad Schools of Thought: Trait Resilience and Process Resilience

There are two clear, yet broad schools of thought in the field of resilience research. A smaller body of literature situates resilience as an inherent aspect of the individual, ascribing good outcomes to a character trait or personal strength[66–72]. The larger body of work describes resilience as an interactive process that draws on aspects of both the individual and his/her environment[45,46,55,73]. While Luthar, Cicchetti and Becker[39] have suggested differentiating between the two schools of thought through use of the terms "resiliency" (to reflect definitions focused on characteristics located exclusively within the individual) and "resilience" (for definitions that reflect the interactive and ecological understandings of the concept), the terms continue to be used interchangeably. A distinction that has become more prevalent during the past 12 years, is the use of the terms *"trait resilience"* (reflecting purely individual assets and resiliency) and *"process resilience"* (reflecting interactive processes of resilience that include individual assets and contextual resources)[38]. These later terms will be used in this report.

Cutting across both schools of thought, is the inclusion of risk in the form of acute or chronic stress (non-normative stress). Stressors that result from expected life events as part of normal daily life (normative stress) are rarely considered in resilience research[34,74–79]. Irrespective of how risk is

understood, the literature consistently positions resilience as a response to acute or chronic stress and only rarely considers it as an aspect of everyday functioning under normative stress.

Trait resilience is most often used to understand issues related to mental illness[26,69,80].

Process resilience, by contrast, has greater association with both personal and contextual risks as well as psychological and social outcomes[81–84]. In this way, process resilience has stronger alignment with both social determinants of health theories and PHAC's definition of mental health as a function of the whole individual and their total functioning as a social and psychological being.

Trait Resilience

Where positive mental health outcomes are understood to stem from characteristics of the individual, such as individual qualities or strengths as well as personality traits, the tendency is to refer to resiliency rather than resilience[70,71] or alternatively trait resilience[67,68]. Inherent to this understanding of resilience is a fairly static perspective across the lifespan[49], where personal qualities, assets or traits enable the individual to 'bounce back', steer through or protect the individual from the effects of stress and trauma[68,85,86]. Connor and Davidson[68] for example, explained resilience as "The personal qualities that enable one to thrive in the face of adversity" (p. 76). These qualities include hardiness[87,88], positive emotions[85,89–91], extraversion[69], self-efficacy[50,88], spirituality[92], self-esteem[90,93–95], and positive-effect[79,96]. While the concept may be applied across developmental stages, Luthar and Brown[97] note that most research has focused on adults.

Criticisms of Trait Resilience

While this narrower understanding of resilience reflects the very early definitions and explanations of the phenomenon, more recently it has received extensive criticism for inadvertently blaming individuals for their outcomes, limiting critical consideration of the ways in which risks intersect with available and relevant resources[55,59,98–101]. The evidence supporting resilience as an individual facet is limited[34], particularly when positioned beside the evidence for resilience as an interactive process[82,102]. Research in the field of neuroscience and genetics is increasingly highlighting the importance of nurturance and healthy environments in supporting better outcomes for individuals[73,103–109].

Much developmental literature explains how healthy psychological and social development in children, for example, is dependent on resources in their environment, most notably relationships with core adults including family and teachers[82,110–114]. It is these interactions that shape how children will learn to manage adversities in life.

Extending on this developmental literature, when introducing risks into the understanding of psychosocial outcomes, the importance of environment becomes even more pronounced. As Bonanno[115] concludes "personality [i.e. personal assets such as self-efficacy, optimism and flexibility] rarely explains more than a small portion of the actual variance in people's behaviour across situations. Moreover, when resilient outcomes are modeled using multivariate designs, it appears that no single [personality] variable explains more than a small portion of the variance"

(p.754). It is the interaction of environment and individual that has therefore been the focus of most process resilience research over the past three decades.

Process Resilience

Process resilience considers resilience to be a *process* that facilitates better than expected outcomes in the face of adversity[46,78,82,116,117]. In the literature, the broad elements associated with *process resilience* are referred to as *individual assets*, *relational resources* and *contextual resources* [42,118]. *Individual assets* are predominantly linked to the individual's internal protective factors, such as competence, self-efficacy and sense of humour. Located outside the individual, *relational resources* include family, peer groups, significant others such as teachers; while, *contextual resources* include, for example, health and education systems, recreational resources, and community cohesion.

These three elements of *process resilience* feed into a cycle where internal transformations are supported. Resources in an individual's environment facilitate the development of individual assets. As individual assets are increased, the person gains greater access to external resources[82,102,119,120]. Additionally, these developments occur exponentially: as success enhances success, developments happen faster and by greater margins. Similarly, as competence pays off, greater competence is gained[117,121,122]. These incremental processes have now become known as "developmental cascades"[123,124]. In this way, research is underscoring the importance of foundational experiences, where resources and risks faced earlier in life impact not only those life skills used at that point in time, but also the individual's later capacity to negotiate and manage stressors[82,116,123,125–128].

A number of longitudinal studies[41–43,129–135] have made major contributions to the understanding of *process resilience* by:

1. identifying the assets and resources, especially across children's lives, that predict successful mental health adjustment in contexts of adversity over the course of time; and,
2. setting the foundations for clarifying and explaining how the interaction of these protective resilience components promote such adaptation[136].

For example, Werner and Smiths'[42,132,133] Kauai-based study has highlighted the importance of personal assets, relationships (including quality caregiving in early childhood as well as positive relationships with other adults such as teachers, relatives and mentors as children aged) and contextual resources such as cultural factors (for example engagement in religious activities and having a personal faith) to outcomes. Importantly, their study also highlighted the factors that contribute to "staged recovery" (p. 193)[42], where "troubled youth" began engaging in healthier and more prosocial lifestyles during adulthood. Available contextual and relational resources such as education and employment opportunities, personal relationships and engagement in religious communities, rather than individual assets, were central to establishing "turning points". Participants were able to draw on these turning points to alter their life course.

The following section presents an overview of the key consensual resilience elements when framing resilience as a complex, multilevel and interactive process supportive of mental health outcomes. These indicators have been identified as occurring across various communities or population groups, who are navigating various challenges and risks.

Key Consensual Resilience Elements

Individual Assets

Individual assets of resilience processes include factors such as intelligence and cognitive abilities[34,46,84,135,137,138]; executive function[98,139–142], and problem solving skills[143]; easy temperament[29,137,144,145], a positive outlook or emotions[85,89,90,137,144,146–149150], sense of humour[151–153]; effective self-control or self-regulation[39,90,99,125,131,141–144]; creative thinking[158,159]; agency and self-efficacy[88,90,150,160,161], adaptability[85,91,117,150,162,163] and competence[95,98,117]; as well as faith or spirituality[92,164,165].

A significant body of research has demonstrated that these individual qualities together with related individual resourcefulness are fostered and developed through available and accessible relational and contextual resources[34,36,109,123,166–168]. These findings have implications in terms of a collective social responsibility to support individuals' agency within the resilience process.

One of the earliest studies to most clearly identify the impact of relationships on the development of individual assets was that of Werner and Smith[42,132]. Their work identified individual resilience assets such as an appealing personality, self-efficacy, optimism, cognitive capacity and motivation. In particular, their findings highlighted the role of high-quality caregiving in early childhood, as well as positive and supportive relationships with relatives, teachers, and mentors in supporting the development of these individual assets.

Subsequent research has further illuminated the interconnections between various individual assets and contextual resources, demonstrating the cyclical nature of resilience processes. In the longitudinal study "Project competence", Masten and colleagues found that individuals with a greater sense of competence also scored higher on indicators of self-concept, self-esteem, attention regulation, problem solving capacities, creative thinking and had greater positive personality traits. Additionally, people with greater competence also had greater relational resources and the access to social capital that comes with relationships[34,124,169–171].

Similarly, research into executive function (EF) has demonstrated the ways in which EF skills evolve over the life course due to both individual brain development as well as personal experiences[139–142].

Intelligence, which is linked to cognitive development, provides a further example. Healthy cognitive development is dependent on nutrition, an absence of toxic environmental factors, health care, secure attachments, safe communities and educational opportunities[135].

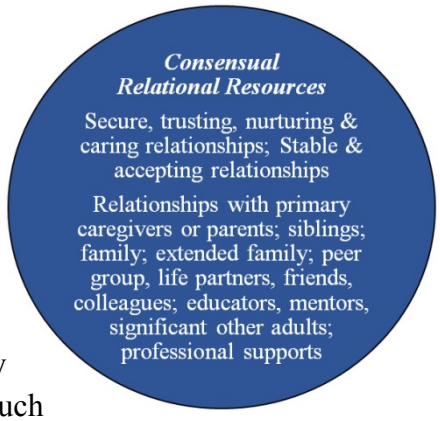
Research shows a fair amount of consistency in the individual assets that facilitate resilience processes across the life span. Variation occurs in the development of these assets, where the

expectation is that they would expand and strengthen with normative experience, over time[157,168,172,173]. For example, self-regulation which begins in infancy[174], is an important individual asset that should grow stronger and improve over the life, until old age[175]. Even when there is delay in asset development, or assets develop in dysfunctional ways, capacity for transformation remains across the lifespan[33]. However, such transformation is often motivated by changes in the individual's contextual and/or relational life circumstances.

Sampson and colleagues[176], for example, studied patterns of delinquency and criminal engagement with men who had participated in an earlier study as boys. The researchers followed them until the age of 70 and found that marriage was associated with an average of a 36% reduction in criminal behaviour. Findings from their qualitative data showed marriage to be an important facilitator for key turning points in the lives of these men. Through these relationships, participants could develop a new family. It was especially through the support and guidance provided by their partners, that participants were then also able to establish a new peer group. At the centre of their "turning points" – the new opportunities established by their marital relationships – were important changes in their individual assets. Specifically, young men could create new identities for themselves that were accompanied by healthy development of individual assets such as decision-making, self-control and competence. While these findings highlight the ways in which individual assets can be developed and/or improved upon during later developmental stages of life, they also point to the vital role of relationships in developing and shaping these assets.

Relational Resources

Relationships have been identified as a foundational component of the successful development of individual resilience assets such as mastery motivation[82,174], executive function[102,155], cognitive skills[105], and problem solving capacity[62,82,102,105,106,117,172,174,177], as well as confidence[160,178], prosocial attitudes and behaviours[62,150,160,177,178]. These findings mirror developmental theory which emphasises the importance of attachment in healthy human development trajectories. Furthermore, within resilience research, relational resources can be key turning points within life trajectories in all later stages of life[45,62,179] (including old age, but especially during adolescence and early adulthood).



Over the life course, relational resources appear to function as a bridge between:
1) the development of personal resilience assets, and 2) the interactive processes of individuals with contextual resources. Accordingly, relationships serve multiple functions in supporting resilience processes. On the one hand, relationships provide emotional support, affirmation, guidance, and various other inter-personal and interactive opportunities for the development of personal assets[56,62,150,177,179,180]. On the other, they provide social capital and related access to contextual supports (such as services, or educational and employment opportunities) and physical resources (such as food and shelter, transportation or recreational resources)[56,180–182].

Perhaps the most striking example of relational resources is seen in the research of Rutter and colleagues. They studied Romanian children who had been orphaned and later adopted. These children spent infancy and sometimes early childhood in institutions where they experienced extreme physical and emotional deprivation. At the time of adoption, many of these children showed marked developmental delays. Rutter et al.'s [81,167,183–185] research demonstrated the ways in which new familial relationships (including parental supports) and the related access to new environmental resources (educational and recreational opportunities) supported often remarkable gains in children's physical development, as well as IQ and academic achievement; the latter being components of individual resilience assets.

The role of relational resources in supporting resilience processes occurs across the life span[53,150,179]. As infants, individuals are dependent primarily on caregivers or parents[168,172,174]. As we develop, the network of players in these support structures expands, from siblings and extended family to peer group[88,150,186], educators[180,187] and significant other adults through to life partners, friends, mentors and colleagues[61,62,177,188–190], as well as professional supports[191–195]. In later life, children and grand-children become important, where the directionality of nurturing, caregiving and social capital is at least balanced within grandparent-grandchild relationships, and balanced or even reversed within parent-child relationships[149,173,196].

While the characteristics of supportive relationships will depend on the nature of specific relationships (family, peer, or professional for example) as well as the members of these relationships (such as parent versus sibling), some core consensual features of relational resources have been identified. With regards to family, warm and responsive yet strong parenting skills[29,34,46,47,53,55,109,197–204], secure attachments and family acceptance[160,205–207] as well as a nurturing family environment[102,169–171,200,201,208–211] have all been associated with better outcomes for infants, children and adolescents. Later in life (youth, adulthood and seniors) similar qualities are noted with spousal or partner relationships and new families: stable caring relationships, family acceptance and a nurturing family environment[190,209,212,213].

Adults outside of the family who provide caring and supportive social networks for children, adolescents, adults, and seniors are also associated with improved psychosocial outcomes[102,170,187,190,195,208,214–218] including improved physical and mental health, educational and employment outcomes[196,219] and successfully navigating old age[150]. These adults include mentors, role models, teachers, family friends, and other community members. Immediate and close friends, as well as romantic relationships constitute peer group[186,190,214,216,220,221 190,209,212,218,222]. A common feature of all these relationships is a stable and trusting environment in which open communication can occur and meaningful support can be provided[149,150,177].

Moving beyond immediate relationships, community acceptance, reflected in interactive experiences with broader peer group (for example school peers, work colleagues, neighbours) facilitates a related sense of belonging. A secure sense of belonging within the individual has been shown to have important impacts on mental health outcomes, especially in instances where individuals have had experiences that are potentially ostracizing[39,160]. These characteristics are

consistent across the lifespan[179,190]. Indeed, Wiles and colleagues[150], for example, found that friendships play a singularly important role in the resilience processes of the elderly.

Contextual Resources

In their review of the resilience literature, Tol, Song and Jordans[223] conclude "research shows that a supportive socio-ecological context is at least as an important – if not more important – determinant of resilience as individual variables" (p. 456). While their review pertains to children and adolescents living in contexts of armed conflict, the importance of contextual resources in supporting both individual assets and relational resources is increasingly apparent[161,224].

Educational opportunities, systems and environments, are possibly the most researched contextual resources. Educational supports across the lifespan are interactive and occur at multiple levels[34]. Further, educational environments ordinarily offer opportunities for personal skills development (including but not limited to cognitive skills, problem solving, knowledge acquisition and emotional development such as motivation and self-efficacy)[225–227], neurocognitive development[228–230], and relational resources through both peers and relationships with teachers[45,117].

Educational learning tasks facilitate individual assets such as intellectual capacities, brain and neurological development, creative thinking and problem solving[45,156,228]. Additionally, interaction with teachers around educational tasks provides children, adolescents, and young adults the opportunity to enhance personal skills such as executive function, self-efficacy, competence, and mastery[45,207,227]. This is provided by encouragement, practical assistance, constructive criticism, and validation during and following tasks. Similarly, school environments provide an important socialising opportunity for children and adolescents, where individual assets such as temperament, self-regulation and agency can be refined[45,227].

These educational benefits continue into adulthood where continuing education resources further intellectual capacity development and augment self-efficacy in efforts at gaining, maintaining or improving employment opportunities. Similarly, less formal educational resources can provide access to important recreational resources. In late adulthood, learning opportunities can sustain competence and self-efficacy, as well as expand supportive social networks.

The interpersonal relationships developed in educational spaces also expand the support networks of children, adolescents and young adults. Within peer groups, the opportunity exists to develop close and meaningful friendships[98,227]. Furthermore, outside of the family, teachers (together with other school personnel) provide critical adult supports, especially in instances where children and adolescents come from highly strained family contexts[45,180,187,227,231]. These relational resources are key supports to young people, providing mentorship, role models, and access to social capital[217,232–234].

However, the potential for educational systems to serve as a key resilience resource for individuals is not a given. The very real and systemic ways in which educational systems currently support, for example, the so-called "school-to-prison pipeline"[235] reflect how school climate and educational policies can and do augment young people's sense of alienation and their resulting engagement in crime[180].

The ways in which contextual resources can serve as either a support or a risk need to be accounted for when considering educational spaces. To this end, qualities associated with resilience promoting schools include a welcoming, inclusive and supportive environment, that integrates both learners and parents, strong leadership and relationally engaged teachers[187,215,233,236–239]. Effective teachers are characterised by strong classroom management skills combined with qualities similar to those of effective parents: warmth, care, monitoring and high expectations[83,180,187].

Finally, educational environments often provide access to important physical resources (including but not limited to libraries and computers, internet access, arts and sports resources)[207]. For young people from socioeconomically marginalised communities in particular, these resources are an important component of being able to engage in activities, develop task-oriented skills, and experience the successes necessary to cement many of their personal resilience assets.

Recreational resources (both those related to physical and creative activities) have been linked to resilience processes across the lifespan [166]. As with resources within educational systems, engagement with recreational resources is linked to the development of individual assets as well as the extension of relational resources[240,241].

Community resources[178,211,242–245] provided within a cohesive community are increasingly linked to positive psychosocial and developmental outcomes, including mental health[53,246–248]. Cohesive communities as a contextual resource can foster a sense of social justice and civic engagement – both important in facilitating personal self-belief [242] and a sense of belonging[150]. As Masten[34] explains, "Resilience across these levels of individuals, families, and communities involved interdependent and interactive processes. … the relationships and cultural belief systems shared in community groups can play a sustaining role in the midst of physical destruction" (p.137).

While Canadian communities in general may not experience the physical destruction posed by social conflicts such as civil wars, many communities are strained by high levels of poverty, community violence and/or natural disasters. Furthermore, most Indigenous communities experience intergenerational traumas that stem from experiences of social destruction (such as loss of land, loss of culture and language, loss of identity, and loss of family kinship). Similarly, many immigrants and refugees experience social traumas prior to arriving in Canada. Community cohesion, routines and structures are central to the resilience processes that support better mental health outcomes for individuals across the lifespan[13,14,84,178,223].

Larger socioeconomic resources are also important to supporting resilience processes. These resources include formal service provision[194] such as health[150,249], mental health[191,195] and legal services[149]. Again, however, research is demonstrating that, often, it is the relationships service

providers form with clients (i.e. relational resources) that are as important to outcomes as the models of service provision[192,193,238,250,251]. Employment opportunities and related economic capacity have also been identified as important resources[173,195,209]. Relatedly, social policy forms a foundational component in terms of what resources are made available[252], especially in resource strained contexts[173]. These various contextual resources are required across the lifespan. Access to good health care[174], for example, is as crucial to an infant's outcomes as it is later in life[150,161].

Furthermore, research is demonstrating the links between spirituality and/or religious engagement in resilience processes[92,164,165,253]. Spirituality and religious engagement have been linked to increased relationships and related social support, impacting individual assets such as problem solving, meaning-making, outlook and self-regulation[164,254,255]. Engagement in religious practice has been found to alleviate the impact of allostatic load[141,256] (see page 10). Reasons for this may be that religiosity, faith or spiritual beliefs provide meaning-making frameworks for individuals that augment other individual assets such as positive emotions, optimism, and humour[256,257]. Religious practice can also provide social support through membership of a religious community[256,257]. Again, these findings are relevant across cultures, contexts and age[257].

Finally, opportunities for both cultural and civic engagement across the lifespan are increasingly identified as important resilience resources[56,58–60,150,211,221,239,258–263]. Such engagement provides amongst other aspects, a sense of belonging, sense of identity and sense of cultural identity; personally congruent coping mechanisms; personally congruent meaning-making systems; relevant role models and life teachings. These features of cultural and civic engagement are particularly salient in a multi-cultural context such as Canada and speak loudly to what is required in effectively supporting positive outcomes for some Indigenous peoples[77,264,265], African Canadians[99], immigrants and refugees[266] amongst other groups.

As with individual assets and relational resources, contextual resources can, under certain conditions and at certain times, prove more harmful than promotive. Faith for example, while providing various protective resources, has also been identified as harmful, where having harmful beliefs for example can increase a strong sense of guilt and neurosis[257] or compounded stigmatisation and alienation[165]. Similarly, while cultural connection and adherence can be a valuable resilience resource[77,264,267], it can also position individuals in vulnerable and challenging ways[268,269].

RESILIENCE ASSESSMENT

In 2011, Windle, Bennett and Noyes[23] published what has since become a seminal review of resilience measures and a meaningful guide in the selection of assessment instruments. This current review takes that manuscript as its foundation and adds to what was known at the time of its publication. Following on the preceding discussion, measures will be discussed below in terms of their alignment with either *trait resilience* or *process resilience*.

Additionally, the criteria used by Windle and colleagues, will provide a framework with which to assess measures. Criteria include: content validity, internal consistency, criterion validity, construct validity, reproducibility agreement, reproducibility reliability, responsiveness, floor/ceiling effect, and interpretability. Their criteria is cited in Table 2. In the absence of what could be considered the gold standard assessment for resilience, criterion validity is not assessed for in this current review.

Instruments that are newly developed but that currently have little relevance to the Canadian context have been excluded as have instruments related to a specific outcome (such as work).

Additionally, some of the instruments reviewed by Windle et al[23] are not included here. There are two reasons for this. First, instruments which were not included received a low-quality rating by Windle et al, and could not be found in recent publications showing continued validation work. Second, they lacked relevance to the Canadian context, a focus of this report.

Trait Resilience Measures

The Connor-Davidson Resilience Measure (CD-RISC)

The Connor-Davidson Resilience Measure[68] was developed on an adult population in the USA. The sample groups included a non-help seeking community sample, primary care outpatients, general psychiatric outpatients receiving private care, participants in a study of generalized anxiety disorder, and participants in two clinical trials of PTSD. The authors[68] explain their understanding of resilience as a multidimensional characteristic of personal qualities that enable individuals to "thrive in the face of adversity" (p. 76).

The original version identified five domains (personal competence, tolerance of negative effect, adaptability, control, and spirituality) that are measured with 25 items rated on a 5-point scale. A reduced version (10 items; with a single dimension) has since been validated on a young adult population[270].

The instrument has been used widely, although the factor structure of the original 25-item measure does not always replicate itself[271,272]. Given our knowledge about resilience assets and resources, and the importance of culture and context in resilience processes, these variations across research sites are to be expected. Indeed, this pattern is repeated across several of the measures discussed here.

Windle et al's[23] review of the CD-RISC concluded that the 25-item measure showed adequate content validity, internal consistency, reproducibility reliability, responsiveness and interpretability as well as good construct validity. Recent studies continue to support existing evidence of the measure's quality[271–277], with one expanding on these findings, identifying ceiling effects (with a Chilean adult sample)[278]. The full measure has been validated on adult populations in Australia[272], Brazil[277], Chile[278], India[271], Iran[279], Korea[273], Turkey[274], China[280], Pakistan[281] and with a community of American Indian elders[282]. The measure has also been validated on a child and adolescent population in Ghana[275] and an adolescent population in China[276].

By contrast to the full measure, Windle et al's[23] review of the 10-item version found the measure to have adequate content validity, together with good internal consistency and construct validity, but there was no evidence for any of the remaining criteria (see Table 2). Subsequent validation work with the measure has continued to support the former findings[283–287].

The 10-item measure has been validated on adult populations in China[285] and Spain[287] (which also demonstrated good reproducibility agreement), as well as Nigeria[283], in the USA with African American men specifically[284] and American Indian elders[282], and on an adolescent population in Cambodia[286].

Table 2. Windle et al.,'s Assessment Criteria of Resilience Measures[23]

Criteria	Definition
Content validity	The extent to which the domain of interest is comprehensively sampled by the items in the questionnaire (the extent to which the measure represents all facets of the construct under question).
Internal consistency	The extent to which items in a (sub)scale are intercorrelated, thus measuring the same construct.
Criterion validity	The extent to which scores on a particular questionnaire relate to a gold standard.
Construct validity	The extent to which scores on a particular questionnaire relate to other measures in a manner that is consistent with theoretically derived hypotheses concerning the concepts that are being measured.
Reproducibility: Agreement	The extent to which the scores on repeated measures are close to each other (absolute measurement error).
Reproducibility: Reliability	The extent to which patients can be distinguished from each other, despite measurement errors (relative measurement error).
Responsiveness	The ability of a questionnaire to detect clinically important changes over time.
Floor and ceiling effects	The number of respondents who achieved the lowest or highest possible score.
Interpretability	The degree to which one can assign qualitative meaning to quantitative scores.

To conclude, the CD-RISC continues to demonstrate sound validity. Its validation across numerous contexts internationally, as well as across a diverse range of age groups (8 – 80 years) suggests its relevance to a multicultural Canadian context, across the lifespan.

The Resilience Scale (RS)

The Resilience Scale (RS)[288] was originally developed in the USA using qualitative interviews with older adult women, and then tested on undergraduate students. The authors regard resilience as a characteristic comprising inner strength, competence, optimism, and flexibility. This characteristic relates to the individual's ability to cope positively, in terms of his/her capacity to "bounce back" and moderate the negative effects of stress[288–290].

The 25-item measure is designed to assess the mental health of the individual in response to adversity along five components, namely equanimity, perseverance, self-reliance, meaningfulness and existential aloneness. Original validation identified two sub-scales reflecting personal competence and acceptance of self and life. Items are rated on a 7-point Likert scale. A reduced version (14 items) has since been validated on middle-aged and older adults[289].

Windle et al's[23] review concluded that the full 25-item measure showed good content validity and construct validity, and adequate internal consistency and interpretability. More recent studies continue to support existing evidence of the measure's quality[291–293], adding reproducibility agreement[291,293–295]. The original factor structure does not however consistently replicate itself[293,294,296,297].

The full measure has been validated on adult populations in China[293], Italy[291], Finland[296], Japan[294], various populations in Spain[295,298] and a population of elderly (80-90 years) people in the USA[299]. The measure has also been validated with an adolescent population in Nigeria[297].

Windle et al's[23] review did not include the 14-item version. Initial validation results of the measure included a single factor structure and excellent internal consistency[289]. Since its development, other studies have further demonstrated the scale's construct validity[294,300–303] as well as reproducibility reliability[302,303].

The shortened version of the measure has been validated on adult populations in Brazil[300], China[303], Finland[296], Haiti[301], Italy[302], Japan[294], and Nigeria[304]. The measure has also been validated on an adolescent population in Brazil[300] and Portugal[305] as well as a child and adolescent populations in Haiti[306].

The Resilience Scale demonstrates sound validity and as with the CD-RISC, its validation across numerous contexts internationally makes it a relevant instrument for use in a multicultural Canadian context, as well as across multiple age groups.

The Brief Resilience Scale

The Brief Resilience Scale[307] was developed on a population of undergraduate students as well as a population of cardiac and chronic pain patients in the USA. The measure focuses on individual

recovery from stress (i.e. "to recover or bouncing back from stress"[307]; p. 194). The scale has six questions, each assessed on a 5-point Likert scale.

Windle et al's[23] review found the scale to have good internal consistency and construct validity as well as adequate content validity, reproducibility reliability and interpretability. Original validation reflected a single factor structure[307]. Subsequent studies have identified a two-factor structure within the six items[308].

Validation studies continue to take place with the measure[308–311], adding to its predictive validity[311]. These studies have been conducted with adult populations in Spain[311], Malaysia[309] and Romania[310].These studies are however seemingly restricted to adult populations within a vocational context[308,310].

Process Resilience Measures

The Resilience Scale for Adults (RSA)

The Resilience Scale for Adults (RSA)[312] was developed on an adult population in Norway, and focuses on intra- and interpersonal protective factors. The authors define resilience as "the protective factors, processes, and mechanisms that, despite experiences with stressors shown to carry significant risk for developing psychopathology, contribute to a good outcome"[313] (p. 84).

Original development identified six sub-scales reflecting personal strength, perception of future (which has subsequently been removed), social competence, family cohesion, social resources and structured style. The 33 questions are assessed using a semantic differential-type response format.

Windle et al's[23] review noted the measure's excellent internal consistency, construct validity and reproducibility reliability as well as adequate content validity. Validation of the scale has continued in Belgium[314], Brazil[315], Italy[316], Iran[317], Lithuania[318] and Turkey[319]. This work has supported the initial validation of the measure[315–319]. These studies affirm the scale's relevance across cultures and contexts, suggesting its relevance to a Canadian adult population.

The Resilience Scale for Adolescents (READ)

The Resilience Scale for Adolescents (READ)[313] has been adapted from the RSA[312] and, as such, draws on the same definition (see above) and assesses the same intra- and interpersonal protective factors. The measure contains 28 items rated on a 5-point Likert scale. Initial validation studies conducted in Norway identified a five-factor structure reflecting personal competence, social competence, family cohesion, social resources and structured style.

Windle et al's[23] review highlighted the READ's strong content validity and construct validity as well as adequate internal consistency. Findings from other studies have affirmed the measure's validity[320,321] despite variations in the factor structure[322]. The scale has been validated for use in Ireland[320], Mexico[322], and Italy[323], suggesting its relevance to use in a multicultural society.

The Child and Youth Resilience Measure (CYRM)

The Child and Youth Resilience Measure (CYRM-28)[7,324] was developed using qualitative data from youth in 14 sites internationally (across 11 countries)[7], including 3 sites in Canada. The measure reflects the understanding that "in the context of exposure to significant adversity, resilience is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways"[59] (p. 225).

The CYRM assesses the presence of social ecological components relevant to resilience processes amongst children and youth. The components of the CYRM include individual assets (personal skills, peer support and social skills), relational resources (physical caregiving from primary caregiver and emotional and psychological caregiving from primary caregiver), as well as contextual resources (spiritual, educational and cultural). The CYRM has 28 items rated on a 5-point Likert scale. The scale's developers have produced a 12-item version of the measure (CYRM-12)[325]. The 28 item version has also been adapted for use with adult populations (the RRC-ARM)[326,327].

Windle et al's[23] review noted the 28-item measure's strong content validity and adequate internal consistency. Following publication of Windle's review, the original authors continued to demonstrate the measure's internal consistency, reproducibility reliability and the absence of floor and ceiling effects[324]. These later findings pertain to an English speaking Canadian sample of youth that included Indigenous youth from Canada's East coast. Findings from other studies have affirmed initial validation of the measure's internal consistency[64] and demonstrated its construct validity[64,328]. While the factor structure has varied across sites, the measure has been validated for use with French speaking Canadian youth[328], a New Zealand population of youth[64] and youth in Iran[329].

The CYRM-12 has been validated on a Canadian sample of youth [325] and has a single factor structure that reflects social ecological resilience resources. This validation work has also demonstrated the measure's content validity and internal consistency. As with the 28-item version, all items are measured on a 5-point Likert scale. The CYRM-12 has also been validated for use with a Chinese sample of youth, where validation analysis confirmed the measure's internal consistency[330].

Initial validation studies in Ireland of the RRC-ARM[326] have identified a potential five-factor structure (social/community inclusion; family attachment and supports; spiritual; national and cultural identity; and personal competencies). This work has demonstrated strong content validity, construct validity, interpretability, adequate internal consistency and the absence of floor and ceiling effects. A validation study in Turkey[327] found the measure to have good content validity, internal consistency, and reproducibility reliability. This analysis identified and confirmed a four-factor structure (individual assets, relational resources, family resources, and contextual and cultural resources).

Given its multicultural origins (including Canada) and increasing validity across age-groups, the CYRM is a relevant instrument for use in Canada.

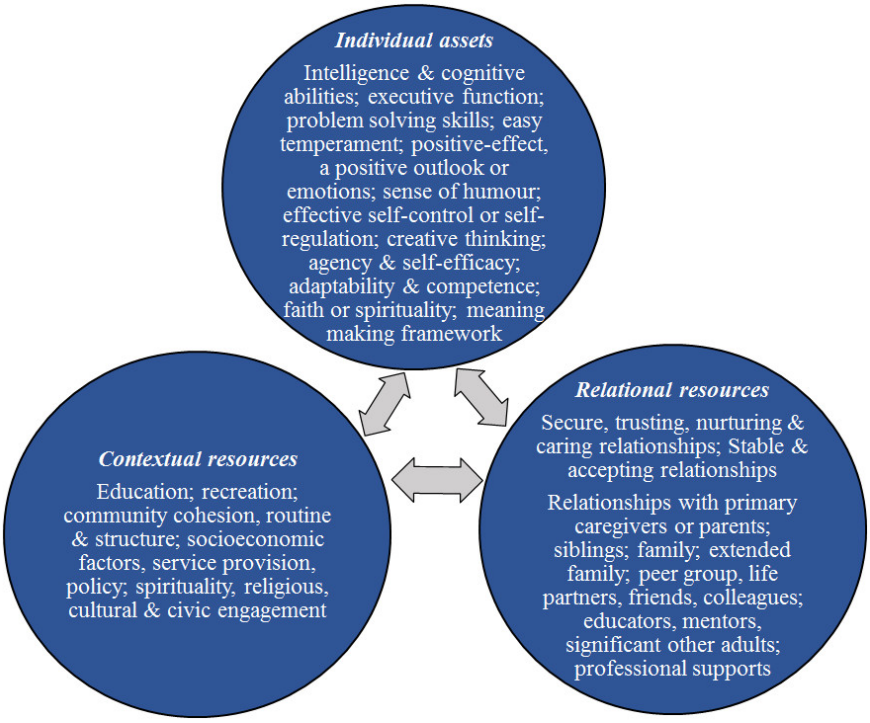
KEY FINDINGS: COMMON AND CONSENSUAL RESILIENCE ELEMENTS

This review has explored a wide-ranging body of theory and research to identify the cross-cutting consensual resilience elements that support positive mental health outcomes across the Canadian context. This approach better accounts for the diversity across Canadian communities in terms of:

- rural-urban variation,
- cultural differences,
- socioeconomic differences, and
- the variety of challenges individuals and their communities are facing.

Accordingly, this review has highlighted core, cross-cutting resilience elements as well as aspects of resilience that emerge across various populations, experiencing a variety of risks, challenges and adversities across the life span. Findings of this review of the consensual resilience elements that support positive mental health point to important interactive processes between the three broad consensual elements (i.e. *individual assets*, *relational resources* and *contextual resources*). This interaction is reflected in Figure 3.

Figure 3. Consensual Resilience Elements



Whether one is using a trait resilience framework or a process resilience framework, individual assets remain consistent. However, a process resilience framework

provides a better understanding of the key role of context, most notably the importance of relationships and resources in how individuals manage challenges to attain and/or maintain positive mental health.

The literature on process resilience clearly shows a consistent group of assets emerge in infancy and are consistently required across the developmental stages through to old age (see Table 3). However, two aspects regarding these assets show variation. First, which assets will protect the individual and/or promote good outcomes is very much shaped by culture and context. Second, from a developmental and life course perspective, the expectation is that these various assets will grow and develop over time, thereby increasing an individual's capacity to successfully manage adversity.

Similarly, Table 3 shows that relational resources and the dynamics of promotion and protection they provide to the individual are consistent across the life course. Put simply, irrespective of culture and context, individuals require relationships that are stable and nurturing in order to support the development of various individual assets. Relational resources are also important in facilitating positive change in individual assets, at key turning points in people's lives. Particularly crucial are the ways in which relationships with significant others can help shape an individual's meaning-making framework, and the subsequent meaning-making processes to manage mental health challenges. As with individual assets, what does vary over the life course are the people included in relational circles. As an infant, the need is for a primary caregiver. With time, relationships expand to include a greater number and variety of social actors.

As well, individuals require relationships that provide access to a variety of contextual resources. Again, these resources remain relatively consistent over time. Irrespective of age and context, people require health resources, formal and informal educational resources, safe housing and communities where a sense of social justice can be experienced. However, the ways in which these resources are required appear more strongly impacted by context and events than by age (See Table 3).

It is clear that interaction between the individual and resources (both relational and contextual) shape individual capacity to successfully manage challenges from either daily hassles or acute or chronic stressors. It is also clear that the ways in which these interactions are protective and promotive or harmful, will depend on the unique blend of individual and contextual factors at play at a given time.

Table 3. Broad Consensual Resilience Elements Across the Life Course and Related Assessment Tools

Resilience Components	Resilience Elements required from Infancy to Old Age	Related Assessment Tools
Individual assets	Intelligence and cognitive abilities; executive function; problem solving skills; easy temperament; positive-effect, a positive outlook or emotions; sense of humour; effective self-control or self-regulation; creative thinking; agency and self-efficacy; adaptability and competence; meaning-making framework	CD-RISC RS Brief Resilience Scale RSA READ CYRM
Relational resources	Secure, trusting, nurturing and caring relationships Stable and accepting relationships Relationships with primary caregivers or parents; siblings; family; extended family; peer group, life partners, friends, colleagues; educators, mentors, significant other adults; professional supports	RSA READ CYRM
Contextual resources	Education; recreation; community cohesion, routine and structure; socioeconomic factors, service provision, policy; spirituality, religious, cultural and civic engagement	RSA READ CYRM

Assessing Resilience Across the Life Course

A core objective of this review has been to inform the development of a basic set of consensual resilience indicators across the life course that can contribute to PHAC's larger mental health surveillance activities.

While the review of resilience research and assessment has highlighted the absence of a gold standard resilience scale[23,37], several measures do exist that are well validated and used extensively. (See Table 4). Six measures relevant to the Canadian context and which align with the focus and findings of this review have been identified and discussed along with the review of resilience elements. Most of the measures can be used with adolescent and adult populations. In some instances, measures have also been validated for use with children and with seniors. All the instruments show applicability across multiple cultures and contexts.

Table 4. Validated Measures of Resilience Across the Life course and Across Cultures.

	Children	Adolescents	Adults	Seniors	Cross-cultural
CD-RISC	✓	✓	✓	✓	✓
RS		✓	✓	✓	✓
Brief Resilience Scale			✓		✓
RSA			✓		✓
READ		✓			✓
CYRM		✓	✓	✓	✓

This review of resilience elements and measurement instruments has also found that the disparity amongst resilience definitions in terms of *trait resilience* and *process resilience* is reflected in existing measurement scales. The measures reviewed in this report certainly reflect this. Three of these measures align with theories related to trait resilience (i.e. the CD-RISC; the RS; and the Brief Resilience Scale). Therefore, their relationship to the consensual resilience elements identified through this review is limited by their focus on individual assets only. By contrast, the three other measures (the RSA, the READ and the CYRM) align with theories of multilevel interactive resilience processes. Given their comprehensive nature, these later tools are more appropriate in the measurement of the consensual resilience elements as identified in this review (see Table 5).

Irrespective of these findings, numerous authors caution against an oversimplified view of, and reliance on, resilience measures. This is primarily because of the complexity of the phenomenon, both in terms of its development and the ways in which it manifests. Consequently, authors such as Bonanno[115] question the feasibility of ever establishing a single comprehensive, truly valid measure of resilience. The complexity of resilience that gives rise to these concerns is reflected in the findings of this review of consensual resilience elements. The findings of this review align with process resilience definitions and highlight the need for measurement instruments that account for individual assets as well as relational and contextual resources (see Table 5). To this end, the RSA, READ and CYRM very closely reflect both process resilience and the three broad consensual elements that have emerged from this review.

In addition to measurement tool contents, several concerns and cautions have been raised regarding the use of instruments in the assessment and research of resilience. Various authors[24,115] emphasise the fact that as a process, resilience is not a stable or static construct.

Table 5. Alignment of Resilience Elements and Measurement Tools

Consensual resilience elements across the life course	Resilience indicators accounted for in measurement tools					
	CD-Risc	RS	Brief Resilience Scale	RSA	READ	CYRM
Individual Assets	X	X	X	X	X	X
Problem solving skills; effective self-control or self-regulation; agency & self-efficacy; meaning making framework; Self-esteem; intelligence & cognitive abilities; easy temperament; positive-effect, a positive outlook or emotions; sense of humour; creative thinking; adaptability & competence; executive function; faith or spirituality						
Relational Resources				X	X	X
Relationships with primary caregivers or parents, siblings, and extended family						
Relationships with peer group, life partners, friends, colleagues; educators, mentors, significant other adults; professional supports						
Secure, trusting, nurturing & caring relationships						
Stable & accepting relationships						
Contextual Resources				X	X	X
Inclusivity and sense of belonging						
Educational and employment resources						
Community cohesion, routine & structure						
Recreational resources						
Sense of social justice						
Religious, cultural & civic engagement						
Positive socioeconomic factors, service provision, & policy						

Hence, measurement at a single point in time would raise questions regarding the validity of findings. Moreover, without the assessment of stressors (both their presence and the ways in which they are interpreted by individuals), the validity of assessment results would be further challenged[55].

EXPANDING CURRENT THINKING ON CONSENSUAL RESILIENCE ELEMENTS

Resilience Across the Life Course: Integrating a Developmental Perspective

Situating the key findings of this review alongside developmental theory provides a meaningful framework to expand current understanding of the nuanced interactions among individual assets and relational and contextual resources across the life course. In this section, we seek to advance this discussion.

The usefulness of developmental theory in more nuanced understandings of resilience is an emerging perspective in the resilience literature[40,47]. Supkoff, Puig and Sroufe[82], for example, argue that as individuals age, or develop, the interactive experiences they have had with relational and contextual resources – both good and bad – entrench the strategies people use to manage adversity. Over the course of time, they argue, "it becomes reasonable to talk about the resilience of the individual at a particular point in time" (p. 129). Their discussion does not negate the vital importance and value of relational and contextual resources in the resilience process at any stage of human development. Rather, it draws our attention to the importance of understanding the ways in which previous developmental interactions and experiences have shaped individual meaning-making frameworks and processes.

At the center of the resilience process is personal ***agency***, a *key* individual asset which includes individuals' **meaning-making frameworks** and **meaning-making processes** as well as the capacity to decide and act in a given environment. Note: In this report, our understanding of the term "agency" extends beyond its traditional definition as the *"capacity to act*", in order to include those other capacities of *meaning*- and *decision-making* that are implied within individuals' capacity to act. Hence, meaning-making frameworks and meaning-making processes are understood as those essential mechanisms in the enactment of agency which guides the use of resilience assets and resources to achieve and maintain positive mental health.

Individual meaning-making

It is a person's meaning-making processes, in particular, that inform which individual assets and contextual resources he/she will draw on, at a particular moment in time[54].

a) Meaning-making *frameworks*

The foundations of meaning-making frameworks are set in early life when young children begin to perceive, understand, and learn to interact with, the outside world. Meaning-making

frameworks, or individuals' beliefs about the world, provide a frame of reference to help make sense of daily experiences, including understanding and interpreting the challenges and adversities that they will need to manage.

b) Meaning-making *processes*

Meaning-making processes are the ways in which individuals make sense of daily life experiences and choose to manage the various challenges and adversities they encounter. Meaning-making processes will, over time, very powerfully shape the ways in which individuals will enact their agency which will, in turn, impact which resources they select and how they go about in doing so.

This theory is argued by other leaders in the field. For example, Masten[34] concludes "resilience research has increasingly encompassed a multiple levels perspective recognising that individual development unfolds from the interactions of many systems across levels, both within and outside the individual" (p. 276). Similarly, Goldstein, Brooks, and DeVries[331] argue, "The concept of resilience is fairly straightforward if one accepts the possibility of developing an understanding of the means by which children develop well emotionally, behaviorally, academically, and interpersonally either in the face of risk and adversity, or not" (p. 74).

Collective Meaning-making

Importantly, given interaction with relational and contextual resources over time, meaning-making frameworks can be developed both individually and collectively -- especially in instances where communities have experienced particular stressors as a whole [54,332–334]. Over the course of a lifetime, these frameworks can become increasingly entrenched for the people living within a community and be carried over generations (as seen in oppressed and marginalised communities who have experienced historical trauma). These frameworks are used by individuals and communities to make sense of experiences through individual and collective meaning-making processes. The meaning brought to experiences then integrates with other individual and collective assets such as problem-solving skills and capacity to shape personal and collective responses to events where individuals and/or entire communities may or may not achieve positive outcomes.

Similarly, meaning-making frameworks shape how individuals and communities will interpret the meaning and value of the relational and contextual factors that surround them[333,334]. These interpretations will determine if relational and contextual factors are considered to be *resources* or not[54].

The combination of individual assets, the meaning attached to resources and the meaning attached to events shapes the pathways individuals and communities will take to achieve a particular set of health-related outcomes. Consequently, while an understanding of resilience as it pertains to individual mental health outcomes is important to a Population Mental Health Promotion (PMHP) approach, so too are understandings of resilience as it pertains to

communities. Healthy communities with strong resilience resources become strong contextual resources in the resilience processes of individuals.

Developmental Theory and Meaning-making

Understanding resilience as a process that integrates individual assets, relational resources and contextual resources, driven by a process of meaning-making and the enactment of agency, aligns with the developmental theories of Vygotsky and Frankl. In Logotherapy[335], Frankl argued that humans will strive to find meaning in experiences under any condition. This notion is carried through into various contemporary developmental theories[336].

Additionally, the attitude people have towards suffering is at the foundation of the ways in which challenging experiences are interpreted. The ways in which we find meaning in suffering are adaptable and flexible. Frankl believed that meaning-making processes as well as attitudes towards suffering are established through personal experiences, our physical interactions with our environment, and relational interactions with others. Important foundational interactions occur early in life, establishing individual meaning-making frameworks and perspectives. However, these processes and attitudes continue to develop and evolve over life through continued interaction with others and the environment.

Similarly, Vygotsky[337] explored the ways in which meaning is structured by children as an internal process (i.e. meaning-making-processes) and shaped by their relationships and larger cultural context. This research culminated in his Social Development Theory. Of importance to this review, is Vygotsky's assertion that meaning-making is a process that begins in infancy because of social interactions.

Moreover, meaning-making occurs within a cultural context. This cultural context, in addition to social interactions, has a strong influence on the meaning-making frameworks people will develop and the meaning-making processes they will use to make sense of their experiences. These two points underscore the role of contextual and relational resources in the formation of interpretative meaning-making frameworks and related meaning-making processes. As with Frankl's theory, Vygotsky's theory of interpersonal processes together with the flexibility of meaning-making frameworks and meaning-making processes are also demonstrated in contemporary research[36,338].

These two theories support the interactive aspect of resilience processes. The social interactions occurring within cultural contexts set the foundation and subsequent shaping of meaning-making frameworks and meaning-making processes as used by individuals, and collectively by communities. However, over time, these processes are increasingly internalised, they inform the meaning people will ascribe to challenges as well as the resources they draw on and the strategies they implement to manage these challenges.

The ways in which resilience elements, resilience theory and developmental theory are aligned are reflected in Figure 4.

The role of meaning-making as a core mechanism within the resilience process has important implications for a PMHP framework. Based on the findings presented in this report, we conclude that by changing factors in the environment *collaboratively* with individuals and communities, a cycle can be initiated through which the ways in which meaning is ascribed to self and to events can be changed. Understanding how individuals and communities interpret events, potential resilience resources, and what they believe they need to attain and/or sustain mental health, means that relational and contextual factors can be better aligned with both the meaning brought to events and other existing individual assets and contextual resources. In this way, a platform is created from which individuals (and communities) can begin to more successfully manage the challenges confronting them. As successes are achieved, personal agency and capacity to act is increasingly facilitated. The enactment of agency feeds into additional successes that further reshape meaning-making processes. Critical to this success, however, is the need to "start where people are at".

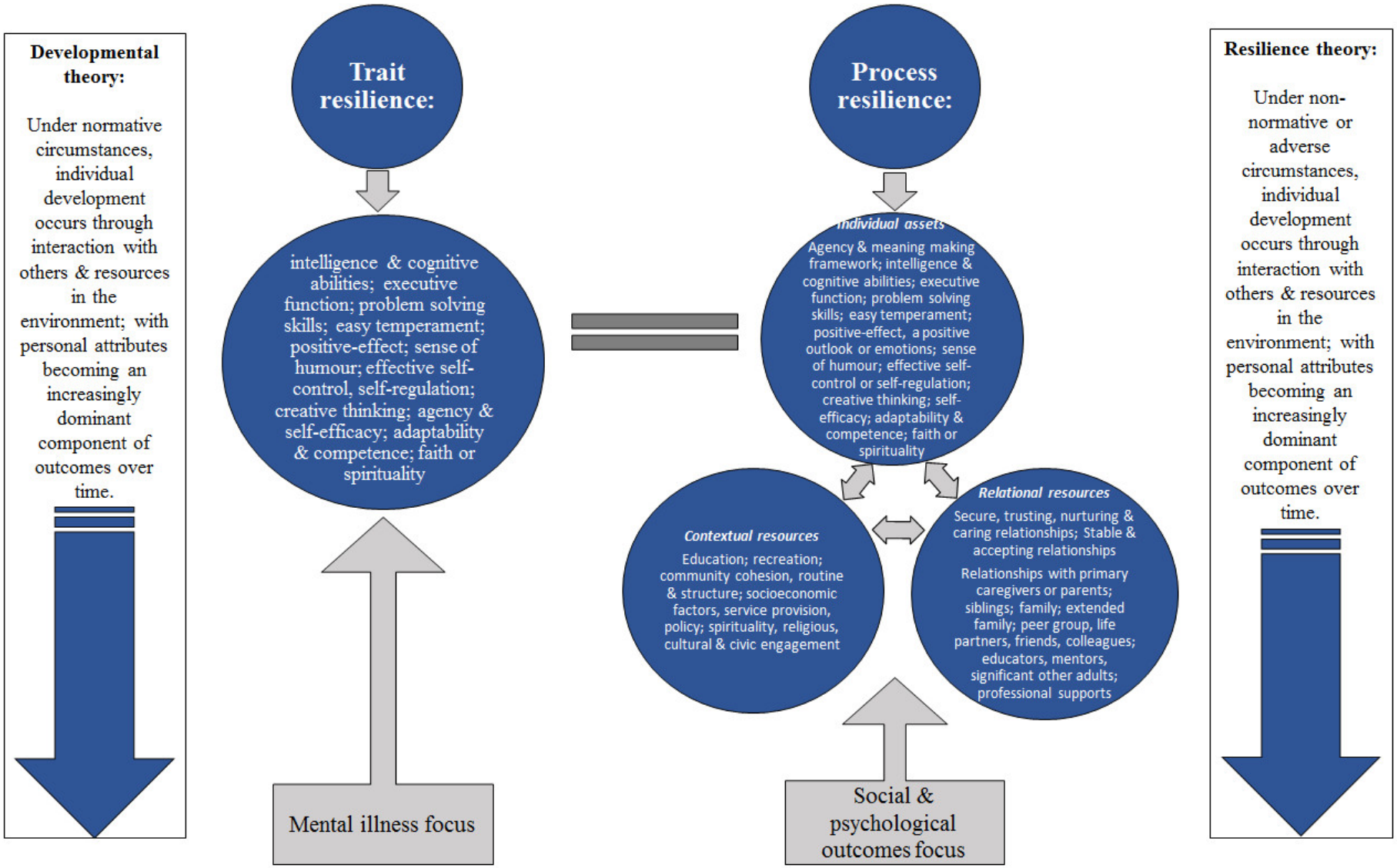
Meaning-making and Resilience Resources

Within the fields of positive youth development and resilience, the prevalence and importance of meaning-making systems is growing[36,339–342]. Much of the research exploring the ways in which meaning-making augments agency is occurring in studies of children and youth in conflict settings[178,334] as well as marginalised ethnic communities (including but not limited to Indigenous communities, African American communities and African Canadian communities)[54,264,343–345].

This research is demonstrating the impact of events on collective frameworks for meaning-making. In these instances, the ways in which historical trauma and systemic racism shape a community's collective understanding of events together with the development of collective identity and agency, is being explored and demonstrated. This work also highlights the ways in which interaction with culture can powerfully *re*shape meaning-making frameworks for both individuals and communities. It is through this reshaping that the agency of individuals is augmented and redirected along healthier pathways that are promotive of positive mental health.

Social interactions that facilitate personal change are reflected at a very practical level for example, in the work of Sanders and Munford[180,186,187,192,193,251,346]. Their longitudinal study of multiple service using youth in New Zealand has highlighted the ways in which service providers can enact youth agency through respectful interactions that account for young people's interpretation of both the challenges they are managing and the resources available to them. By "meeting" young people "where they are at", service providers are able to see the world and a person's experiences as their young clients see the world and understand their experiences. They are then better able to situate relevant resources around clients.

Figure 4. Alignment of Life Span Resilience Elements, Resilience Theory and Developmental Theory



Through dialogue, youth can engage in a plan co-created with the service provider. The experiences individual youth have through this process serve to restructure meaning-making frameworks, gradually, over time. These findings serve as a powerful demonstration of what can be achieved in terms of health promotion when contextual resources are used to affect individual assets in ways that are guided primarily by the client's perspective.

It is critical to stress that the role of social and cultural interaction in the development of meaning-making processes, does not negate the importance of personal agency in how individuals interpret the world and subsequently make decisions. Ultimately, it is the individual who interprets experiences, brings his/her own meaning to these experiences, and responds according to these interpretations. The meaning people bring to their experiences can direct the ways in which they draw on their individual resources and the subsequent actions they engage in.

For example, Theron and Theron[339] show how constructive, positive meaning-making frameworks that are culturally informed and culturally congruent, enabled the young black South African participants in their study to proactively navigate the challenges of extreme poverty resulting in positive outcomes. These youths were able to constructively draw on both their individual and contextual resources to move towards their perceived positive futures (i.e. completing high school and going to university).

Similarly, Bottrell's[341] work with adolescent girls in urban Australia showed how meaning-making frameworks shaped by their socioeconomic context, resulted in young women perceiving antisocial behaviour as a means of increasing their social capital. Consequently, antisocial behaviour was of greater value to these young women in terms of supporting outcomes that were more socially accepted than engagement with formal educational processes. Accordingly, participants decreased their school engagement and increased their engagement in anti-social activities such as aggressive behaviours and substance use. These examples show that while context shapes the frameworks that people use to engage in meaning-making processes, the individual is at the centre of subsequent decisions.

The research findings of Bottrell as well as Theron and Theron also point to the importance of cultural context. The young people in Theron and Theron's study drew heavily on the Africentric principle of collectivity to seek out and effectively use social relationships, in particular with adults, such as teachers, as supports in reappraising their life situations and experiences. Similarly, they drew on the Africentric principle of spirituality to make sense of the difficult experiences they had lived through and moved towards more positive goals and outcomes.

The young women in Bottrell's study also drew heavily on relationships to appraise life situations and experiences. In contrast to Theron and Theron's study though, these adolescents drew on peer relationships with other young women. Using these frameworks, the participants explain how so-called delinquent and other criminal acts may be justified in the absence of meaningful and appropriate resources located in their context.

Implied in these findings is the impact of cultural frameworks on the appraisal of resources. In communities that value individuality rather than collectivism, greater emphasis will be placed on individual resources. Conversely, in communities that are more collectivist in nature, greater emphasis will be placed on relational and contextual resources. For a multicultural society such as Canada, this is a crucial aspect to account for in policy and service delivery. This also raises important questions about how policy makers and service providers, in particular, ensure that resources accurately respond to the needs of particular individuals, communities and sectors of the population.

DISCUSSION

The Relevance of Resilience to a Canadian Population Mental Health Promotion Framework

This report details findings from a review of resilience elements that support and promote positive mental health outcomes. In response to PHAC's mandate to promote Canadian mental health, the aim of this report is to identify those consensual elements of resilience that address various adversities across the lifespan; and, to contribute in the development of resilience indicators for use in mental health and resilience surveys. In particular, this work is motivated by the lack of research on the underlying foundations of resilience across various population groups (in terms of race, ethnicity, culture, age, etc.).

An understanding of these cross-cutting, consensual resilience elements is necessary if we wish to apply the concept of resilience more broadly within a Canadian population mental health promotion (PMHP) framework. Also, a resilience perspective within this PMHP framework will help address the growing complexity of risks and challenges faced by Canadians, as reflected in the increased rates of mental health challenges. The exploration of consensual resilience elements across the life course is critical to address the challenges resulting from Canada's significant, cultural heterogeneity.

Adversity and Daily Stressors

As stated in the introduction to this report, research in the field of resilience has mostly focused on specific issues within contexts of extreme adversity (such as childhood maltreatment, violence, chronic illness, conflict, and environmental disaster). As such adversities become more prevalent, the levels of global economic strain and political uncertainty are compounded, and resilience theory becomes relevant to an increasing number of communities.

Communities once considered as having had "normative contexts" (for example, middle class communities of economically and politically stable countries) now experience cumulative and more chronic adversities. Indeed, Bonanno and Mancini[347] have noted that most individuals will experience at least one potentially traumatic event (PTE) in their lifetime. Similarly, authors such as Davis, Luecken, and Lemery-Chalfant[348] have argued that ''for most of us, the adversities we

encounter do not constitute major disasters but rather are more modest disruptions that are embedded in our everyday lives'' (p. 1638). Collectively, these authors[72,135,348], have developed a strong argument for exploring the resilience processes related to so-called "daily stressors" or "daily hassles" that over time, come to constitute chronic stressors. The accumulation of these chronic stressors can be better managed to reduce their impact on mental health outcomes through the promotion of resilience. Accordingly, a comprehensive understanding of the consensual resilience elements, as they occur across the lifespan, is of key importance in supporting the mental health of any nation's citizens, including Canadians.

Consensual Resilience Elements

Findings of this review show that resilience is an interactive process incorporating individual assets as well as relational and contextual resources. Adding to the emerging discussion in the literature of resilience as a developmental process, we have amplified the importance of meaning-making processes as a critical component that enacts agency within these broader resilience processes.

In this way, findings of this review align with PHAC's definition of mental health as well as the broad social determinants of health. Reflecting on the authors'working definition of resilience as well as the initial review and consultations of the Mental Health Promotion Unit Resilience Project (see Appendices A-C), this larger review affirms individual resilience across the life course as an interplay resulting from the following key elements:

- personal agency, and related meaning-making as key individual assets that support the individual's ability to access other personal assets;
- an interactive process where the individual has the ability to engage with others as relational resources (i.e. parents, peers, mentors, etc.) as well as access contextual resources; and,
- the resulting capacity to successfully navigate adversity, challenges or risks, to achieve and maintain positive mental health outcomes.

Such an understanding of resilience as a promotive component of mental health also underscores the individual's capacity to learn, thrive and transform in the face of day-to-day stress and adversity through these interactive processes.

Accordingly, findings of this current review expand on our research and highlight the importance of relational resources in facilitating the development of key individual assets, namely personal agency, including meaning-making, and competence skills that are required for individuals to move towards positive psychosocial outcomes. Relational resources play a key role in nurturing individual assets and assisting in the navigation towards the contextual resources necessary to foster and sustain positive outcomes. Collectively, these findings outline the ways in which relational and contextual resources shape personal agency which becomes increasingly central to how individuals will navigate and manage the challenges they face over the life course.

Importantly, meaning-making frameworks and related meaning-making processes are embedded in the personal agency of individuals. The beliefs that individuals hold of themselves and the world (their meaning-making frameworks) form the basis of the ways in which individuals will think about and come to understand their experiences (meaning-making processes). This understanding is the mechanism that either drives individuals forward to seek out and engage with relational and contextual resources in their efforts to establish and maintain positive mental health, or not.

However, just as interactions between the individual and context shapes the internal meaning-making processes of individuals, so too do the cultural and social context in which people find themselves impact what experiences are seen as traumatic or stressful[25,34,74,115], and what personal assets and contextual resources are seen as resilience promoting[24,34,56,269]. Similarly, indicators of positive mental health outcomes are highly dependent on contextual and cultural facets[28,74,258,349,350]. Given the cultural and contextual diversity across the Canadian population, what resilience resources will be beneficial in promoting positive mental health outcomes and how, will differ significantly. Consequently, in order to effectively promote and support resilience resources, policy and intervention efforts need to be flexible enough to ensure that they can account for personally and contextually congruent meaning-making frameworks and meaning-making systems as crucial individual assets.

The findings of this review highlight both personal accountability in successfully managing life's challenges together with society's collective responsibility in promoting and supporting individual agency. Numerous studies have demonstrated that in order for individuals to develop effective and positive meaning-making frameworks and process over time, relationships, in particular, are of critical importance. Furthermore, in order for individuals to meaningfully use their agency in effective self-care strategies, relevant contextual resources need to be available for them to draw on. These findings raise important questions regarding the relevance of community resilience in supporting both individual resilience processes and related mental health outcomes.

A process resilience framework with its emphasis on interactions between the individual and their relational and physical context also provides important insights into the ways in which adaptive resilience processes can be "hijacked"[34]. This understanding is crucial to supporting positive mental health outcomes, especially in instances where critical turning points need to be identified and used as a means of changing mental health promoting thoughts and behaviours. Specifically, the enactment of individual agency in ways that manifest in unhealthy or maladaptive behaviours, may in fact reflect hidden individual assets that are masked through maladaptive coping mechanisms[351]. Maladaptive thoughts and coping mechanisms are often used in the absence of positive relevant and meaningful relational and contextual resources. By having individuals explore their personal assets, including their meaning-making frameworks and their understanding of the resources they need, turning points can be created where individuals can engage in healthier and more prosocial stress management strategies.

As reflected in the numerous examples of people who have developed positive mental health with a minimum of contextual resources and support, at the heart of such turning points is usually a relationship. The fundamental elements of resilience processes that are promotive of positive mental health appear to be based on a trusting, supportive and structured relationship with one significant adult that can meaningfully support and, if necessary, augment the capacity to make sense of one's life (meaning-making).

Importantly, these findings point to the value of contextual and relational resources in facilitating the development of agency as an individual asset in ways that can promote meaningful transformation in the face of adversity occurring later in life. Ideally, these supports would be available to individuals from the early years, creating a strong foundation from which to effectively manage non-normative stressors occurring later over the course of life.

Essential to such transformation in the face of chronic or acute stress and adversity is the capacity of the individual to learn, thrive and transform. However, in order for significant qualitative change to occur within the individual following such crisis, it is necessary to systematically acquire meaning and to have built interpersonal skills earlier in life through the management of smaller opportunities.

Echoing the work of Frankl, individuals require self-awareness in order to make effective use of their own meaning-making processes (i.e. being aware of who I am, and what I am capable of). This awareness, gained through managing normative stressors (such as navigating peer conflict or managing school exams) instills in people the capacity to manage greater non-normative stressors. Effectively engaging one's own agency in the face of chronic and/or acute stressors, and strategically drawing on resources, can have a powerful effect on subsequent personal transformation and related post traumatic growth[352].

To summarise, the findings of this review and the related discussion highlight: 1) personal agency and meaning-making as core individual assets; 2) interactive process i.e. the interplay among individual assets and relational and contextual resources; and 3) the capacity to successfully navigate adversity, challenges or risks, to achieve and maintain positive mental health outcomes.

Implications for Community Resilience

While this review did not include community resilience as an aspect of its focus, findings do point to elements of community resilience that are important in supporting individual resilience. These components include:

- community cohesion, as reflected in strong inter-generational social connections;
- strong community and cultural identity that simultaneously includes an overarching sense of inclusivity and acceptance; and,
- the capacity of communities to advocate for, and acquire, relevant and required resources.

Implied throughout the publications included in this review, are the ways in which community cohesion, routines and structures are central to supporting better outcomes for individuals across the lifespan. These characteristics of community are important in supporting positive mental health outcomes for individuals. Collectively, these elements of community resilience (including resilience promoting schools, workplaces, residential life settings for seniors) come together to provide individuals with opportunities for civic engagement. Civic engagement, in turn, facilitates personal self-belief and a sense of belonging.

Similarly, strengthening community cohesion and establishing strong social support networks can support a sense of social justice. The experience of social justice, in turn, is critical in shaping meaning-making frameworks. Strengthening communities in these ways creates a powerful environment in which individual and family stressors can be lessened while simultaneously providing meaningful supports[353]. Collectively, individuals are then better positioned to draw on their agency and effectively manage the challenges confronting them.

These aspects of community and related understanding of community resilience as they pertain to individual resilience and supporting positive mental health outcomes, require further investigation.

Indicators of Consensual Resilience Elements

When developing indicators of resilience, the three broad consensual resilience elements need to be accounted for, namely, *individual assets*, *relational resources* and *contextual resources* (See Table 3 and Figure 3). As well, based on the findings of this report, the following facts are equally of critical importance:

- components from all three broad consensual resilience elements need to be accounted for, in order to understand the promotive factors of positive mental health outcomes;
- the specific assets and resources that people will draw on will be shaped by two factors: the individual's culture and context, and his/her internal meaning-making processes.

Surveillance efforts and related resilience measures need to be comprehensive enough to account for indicators from all three broad elements, and sufficiently flexible to account for the variation that will occur across the use of specific assets and resources within each of the three elements (See Table 6).

Of the measures reviewed in this report, the RSA, READ and CYRM are best suited to assess for the three broad resilience elements (see Table 3). What appears to be absent from all the assessment tools reviewed is 1) a means of accounting of the interaction of these three elements, and 2) a consideration of the meaning-making processes individuals bring to their perception of available resilience assets and resources. Given the centrality of meaning-making as a facilitative mechanism in the enactment of agency, this seems an important aspect to be accounted for in

resilience surveillance. This is especially so, as the enactment of agency serves as a catalyst of interactive resilience processes.

Implications of findings

This review has highlighted those resilience assets and resources that cut across critical issues as well as developmental stages of life. Understanding which resilience elements are of relevance across multiple population groups provides a sound framework from which to develop meaningful policies and programs that are better able to facilitate positive mental health outcomes for Canadians. Importantly, results highlight focal considerations for policy makers, program and service providers as well as researchers.

Implications of Findings for PMHP Surveillance and Research

In terms of research, the following key issues deserve attention: 1) assessment tools; 2) understanding of adversity; and 3) issues related to the continued study of resilience.

1) Assessment tools

Continued validation of measures is required. In particular, evidence of responsiveness is needed for all of the full versions of the measures identified in this review. Additionally, significant validation work is required on all of the reduced versions of scales, especially, reproducibility, responsiveness and interpretability. There are limited instruments validated for use with children and none for assessing the availability of relevant resources for infants.

Responding to these requirements will ensure that the RSA, READ and/or CYRM can be used in the surveillance of resilience as a supportive and promotive component of positive mental health outcomes within a PMHP framework. As previously stated, these three measures in particular reflect the three broad consensual elements of resilience processes (i.e. individual assets, relational resources and contextual resources).

The CYRM, for example, is well aligned for such use, given the existing development and validation work conducted within a Canadian context. In addition to this work, the measure has already been used in Canadian surveys such as the fourth iteration of the Student Drug Use Survey (SDUSAP) in the Atlantic Provinces. The measure's availability in a 12 and 28 item version make its integration into larger surveys (such as the Canadian Community Health Survey) convenient, and the clear wording of items makes it user friendly for people completing the measure.

Furthermore, in light of the emerging inclusion of meaning-making in discussions of resilience processes, resilience measures need to better account for meaning-making as an individual asset. This concern echoes the need for resilience resources to be understood in terms of their contextual and cultural relevance to individuals[39,46].

Table 6. Alignment of PHAC Mental Health Indicator Framework, Resilience Elements, and Measurement Tools

PHAC Positive Mental Health Surveillance Indicator Framework		Consensual resilience elements across the life course	Resilience indicators accounted for in measurement tools					
Youth	*Adults*		CD-Risc	RS	Brief Resilience Scale	RSA	READ	CYRM
Individual determinants	***Individual determinants***	***Individual Assets***	X	X	X	X	X	X
Coping	Coping	problem solving skills						
Control and self-efficacy	Control and self-efficacy	effective self-control or self-regulation; agency & self-efficacy; meaning making framework; Self-esteem; intelligence & cognitive abilities; easy temperament; positive-effect, a positive outlook or emotions; sense of humour; creative thinking; adaptability & competence; executive function;						
Spirituality	Spirituality	faith or spirituality						
Nurturing childhood environment		[see relational resources]						
Violence	Violence							
Health status	Health status							
Physical activity	Physical activity							
Substance use	Substance use							
Family determinants	***Family determinants***	***Relational Resources***				X	X	X
Family relationship	Family relationship	Relationships with primary caregivers or parents, siblings, and extended family						
Parenting style		Secure, trusting, nurturing & caring relationships						
		Stable & accepting relationships						
		Relationships with peer group, life partners, friends, colleagues; educators, mentors, significant other adults; professional supports						
Family health status and substance use by family members	Family health status and substance use by family members							
Household composition	Household composition							
Household income	Household income							
Community determinants	***Community determinants***	***Contextual Resources***				X	X	X
Community involvement	Community involvement							
Social networks	Social networks	[see relational resources]						
Social support	Social support	Inclusivity and sense of belonging [see also relational resources]						
School environment	Workplace environment	Educational and employment resources [see also relational resources]						
Neighbourhood social environment	Neighbourhood social environment	Community cohesion, routine & structure [see also relational resources]						
Neighbourhood built environment	Neighbourhood built environment	Recreational resources						
Societal/structural determinants	***Societal/structural determinants***							
Inequality	Inequality	Social justice						
Discrimination/ stigma	Discrimination/stigma							
	Political participation	Spirituality, religious, cultural & civic engagement socioeconomic factors, service provision, policy						

2) Understanding adversity

In order to better understand the extent to which resilience promoting resources are needed, we need to acquire a better understanding of the adversities confronting the Canadian population. Put simply, in what ways are political, economic and social issues impacting the level of "daily hassles" experienced by Canadians and their stress levels? Also, how do these experiences differ across various sectors of the heterogeneous Canadian population?

Understanding the causes of chronic and/or acute stress in the lives of Canadians and addressing the policies and resources related to these aspects of Canadian society will pay later dividends in terms of mental health outcomes. Improved understanding of the adversities confronting Canadians, and the ways in which these vary across the population, are also necessary to improve the quality and relevance of resilience research.

3) Issues related to the continued study of resilience

Enduring criticisms[24,34,65] in the field of resilience research need to be systematically addressed in order for research findings to meaningfully inform policy and programing. Accordingly, it would be important for the research community to agree on those fundamental elements which allow to operationalize resilience in order to better shape research and facilitate consistent use of measures[34]. Numerous researchers[7,28,39,46,57–59] have argued the need to ensure that the indicators of risks, resources and outcomes included in resilience research are appropriate to both the context and the adversity examined.

This is especially relevant to this review given Canada's multicultural communities. As different cultures and contexts have varying understandings of what "success" is, it is important that researchers and policy makers pay greater attention to indicators of positive mental health outcomes so that these indicators may be accounted for in research and in validity assessments.

The same is true for indicators of adversity (see above). Additionally, researchers need to take care not to conflate resilience with outcomes. The implication is that both resilience resources and contextually relevant indicators of outcomes need to be accounted for in research. Finally, as Bonanno, Romero and Kline[65] amongst others have cautioned, most measures of resilience are too simplistic to fully account for the complexity of resilience processes. Accordingly, robust and interdisciplinary designs possibly making use of mixed methods and longitudinal approaches, are necessary to fully explicate our understanding of the phenomenon.

Implications of Findings for PMHP Policy

This review has made clear the importance of process resilience and the elements related to it, in supporting and promoting mental health outcomes. As a supportive foundation of mental health, a process resilience framework should therefore be used to guide policy development as it pertains to PMHP. This framework directs attention to the inclusion of relational and contextual resources in the promotion of mental health. At its core, however, this framework highlights the need for policies that promote integration of supportive relationships that can facilitate the development of positive meaning-making frameworks and related meaning-making processes.

More specifically, two critical issues need to be accounted for in PMHP. First, the interactive nature of process resilience requires that resources and supports be directly aimed at strengthening individual assets and relational and contextual (physical) resources in order to further enhance individual agency. Additionally, policy related to the allocation of such resources needs to be flexible enough to accommodate the various ways in which these resources will be used by people across communities.

Similarly, PMHP policies need to account for the self-identified needs of communities that will strengthen components of community resilience. Specific components identified in this review include community cohesion, as it relates to routines and structure and intergenerational social networks. Strengthening communities in these ways creates a powerful environment in which individual and family stressors can be lessened while simultaneously providing meaningful supports[353]. Collectively, individuals are then better positioned to draw on their individual assets, in particular, agency, and effectively manage the challenges confronting them by accessing relevant relational and contextual resources.

Implications of Findings for PMHP Intervention

As with policy, in terms of programing, consideration needs to be given to the relational and contextual resources that individuals will require in order to develop the necessary individual assets to achieve positive psychological and social outcomes. As such, the attention needs to shift from the individual to an expanded view of the individual within particular social and physical environments. A good example of a PMHP intervention is PHAC's Innovation Strategy's stream aimed at promoting mental health throughout life[359].

This shift in focus begins with individual perspectives on experiences and resources. Consequently, ways of accounting for how people understand their experiences and what is needed to move towards positive mental health should be integrated into service provision models. Situating the individual and/or their community at the centre of an intervention will ensure that responses and available resources are aligned in ways that are relevant to them. Such an approach to the exploration and integration of existing personal assets and contextual resources is better suited outside of the more traditional mental health services and resources (e.g. police, medical and social services, education and recreation).

Integrating these approaches would also serve as a strong promotive and, in particular, preventative measure, over the life course, as these would strengthen individual assets, including agency. Responding to individuals in ways that account for their meaning-making processes can ensure that small yet crucial alignments are made between people and the resources they require. These kinds of systemic responses can have a powerful impact on individual meaning-making processes and the development of individual resilience assets.

To this end, space should be created for frontline service providers (teachers, nurses, police, social workers, etc.) to engage with individuals in ways that generate stable relationships in which individual understanding of events and resources can be explored together accounting for individual

meaning-making frameworks. As with the interactive nature of resilience, existing research suggests that service and resource provision embedded in interactive and relational approaches – where the individual is not a passive recipient of the resource, but is rather actively engaged -- will best augment resilience processes. Stated differently, intervention resources work best when they "meet individuals where they are at" on a case-by case basis.

Without accounting for these subjectivities, crucial barriers to positive outcomes could be missed, along with valuable and existing resources[193,251,354,355]. Additionally, given the importance of relationships, community and culture – both in terms of harms and protections – as they relate to personal outcomes in general and meaning-making frameworks in particular, careful attention needs to be given to these contextual components in intervention strategies[356–358]. Again, stable and supportive relationships characterised by responses and formal interventions that are flexible enough to account for such variability is best suited to supporting the resilience processes of individuals within Canada's multicultural society.

A shift in focus away from the individual to include relational and physical contexts also requires that resilience-based interventions aimed at promoting positive mental health, target not just individuals but also families and communities. Here, formal and informal community interventions that strengthen community social networks are of particular importance to families, as key contextual resources for individuals. For example, social networks can be significantly strengthened through the use of frequent informal community events hosted by formal service providers (e.g. mental health services, schools, police and so forth).

In addition to events and opportunities to strengthen community social networks, resources that will foster community structure and routines are important to the promotion and maintenance of individual resilience processes. Access to resources such as recreational spaces (for socialising and physical activities), educational resources (including libraries and related programing), and health resources are key to establishing community structure.

On a Final Note

Recognizing individuals as full participants in their life experiences and the centrality of key individual assets such as personal agency within the larger ecological resilience process, establishes an opportunity for those engaged in population mental health promotion efforts to capitalise on an immense resource.

By understanding the perspectives of individuals and their communities, policy makers and service providers can better identify, establish and/or provide relevant individual and contextual resilience resources that support positive mental health outcomes.

REFERENCES

1. Joubert N, Raeburn J. Mental Health Promotion: What is it? What can it become? 1997.
2. Lahtinen E, Joubert N, Raeburn J, Jenkins R. Strategies for Promoting the Mental Health of Populations. In: Herman H, Saxena S, Moodie R, eds. *Promoting Mental Health – Concepts, Emerging Evidence, Practice*. Geneva: World Health Organization; 2005:226-242.
3. Joubert N. *Population Mental Health Promotion: What Is It? What Can It Become?* Ottawa; 2009.
4. Ardiles P. *Public Health Workforce: Leadership to Promote Mental Health in Canada*. Ottawa; 2015.
5. Public Health Agency of Canada. *STRATEGIC HORIZONS 2013–2018*.; 2013.
6. Public Health Agency of Canada. Measuring positive mental health in Canada.
7. Ungar M, Liebenberg L. Assessing Resilience Across Cultures Using Mixed Methods: Construction of the Child and Youth Resilience Measure. *J Mix Methods Res*. 2011;5(2):126-149. doi:10.1177/1558689811400607.
8. Liebenberg L, Ungar M, Vijver F Van De. Validation of the child and youth resilience measure-28 (CYRM-28) among Canadian youth. *Res Soc Work Pract*. 2012;22(2):219-226.
9. Sanders J, Munford R, Liebenberg L. Positive youth development practices and better outcomes for high risk youth. *Child Abuse Negl*. 2017;69(December 2016):201-212. doi:10.1016/j.chiabu.2017.04.029.
10. Joubert N, Raeburn J. Mental Health Promotion: People, Power and Passion. *Int J Ment Health Promot*. 1998;1(1):15-22.
11. Public Health Agency of Canada. *Report from the Canadian Chronic Disease Surveillance System: Mood and Anxiety Disorders in Canada, 2016*. Ottawa, ON; 2016.
12. Furr JM, Comer JS, Edmunds JM, Kendall PC. Disasters and youth: A meta-analytic examination of posttraumatic stress. *J Consult Clin Psychol*. 2010;78(6):765-780. doi:10.1037/a0021482.
13. Masten AS, Osofsky JD. Disasters and their impact on child development: Introduction to the special section. *Child Dev*. 2010;81(4):1029-1039. doi:10.1111/j.1467-8624.2010.01452.x.
14. Pine DS, Costello J, Masten AS. Trauma, proximity, and developmental psychopathology: the effects of war and terrorism on children. *Neuropsychopharmacology*. 2005;30(10):1781-1792. doi:10.1038/sj.npp.1300814.
15. Reed R V, Fazel M, Jones L, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in low-income and middle-income countries: risk and protective factors. *Lancet*. 2012;379(9812):250-265. doi:10.1016/S0140-6736(11)60050-0.
16. Raglan GB, Schulkin J. Introduction to allostatasis and allostatic load. In: Kent M, Davis MC, Reich JW, eds. *The Resilience Handbook: Approaches to Stress and Trauma*. New York, NY: Routledge; 2014:44-52.

17. Oken BS, Chamine I, Wakeland W. A systems approach to stress, stressors and resilience in humans. *Behav Brain Res*. 2015;282:144-154. doi:10.1016/j.bbr.2014.12.047.

18. Brody GH, Chen YF, Beach SRH. Differential susceptibility to prevention: GABAergic, dopaminergic, and multilocus effects. *J Child Psychol Psychiatry Allied Discip*. 2013;54(8):863-871. doi:10.1111/jcpp.12042.

19. Brody GH, Murry VM, Gerrard M, et al. The Strong African American Families Program: Translating Research Into Prevention Programming. *Child Dev*. 2004;75(3):900-917. doi:10.1111/j.1467-8624.2004.00713.x.

20. Brody GH, Beach SRH, Philibert RA, Chen Y, Murry VM. Prevention effects moderate the association of 5-HTTLPR and youth risk. *Child Dev*. 2009;80(3):645-661.

21. Brody GH, Murry VM, Kogan SM, et al. The Strong African American Families Program: A cluster-randomized prevention trial of long-term effects and a mediational model. *J Consult Clin Psychol*. 2006;74(2):356-366. doi:10.1037/0022-006X.74.2.356.

22. Brody GH, Yu T, Miller GE, Chen E. Resilience in Adolescence, Health, and Psychosocial Outcomes. *Pediatrics*. 2016;138(6). doi:10.1542/peds.2016-1042.

23. Windle G, Bennett KM, Noyes J. A methodological review of resilience measurement scales. *Health Qual Life Outcomes*. 2011;9(1):8. doi:10.1186/1477-7525-9-8.

24. Panter-Brick C, Leckman JF. Editorial commentary: Resilience in child development - Interconnected pathways to wellbeing. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):333-336. doi:10.1111/jcpp.12057.

25. Southwick SM, Bonanno GA, Masten AS, Panter-Brick C, Yehuda R. Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *Eur J Psychotraumatol*. 2014;5(1):25338. doi:10.3402/ejpt.v5.25338.

26. Davydov DM, Stewart R, Ritchie K, Chaudieu I. Resilience and mental health. *Clin Psychol Rev*. 2010;30(5):479-495. doi:10.1016/j.cpr.2010.03.003.

27. Atkinson PA, Martin CR, Rankin J. Resilience revisited. *J Psychiatr Ment Health Nurs*. 2009;16(2):137-145. doi:10.1111/j.1365-2850.2008.01341.x.

28. Clauss-Ehlers CS. Sociocultural factors, resilience, and coping: Support for a culturally sensitive measure of resilience. 2008. doi:10.1016/j.appdev.2008.02.004.

29. Belsky J, Bakermans-Kranenburg MJ, van Ijzendoorn M. For better and for worse: Differential susceptibility to environmental influences. *Curr Dir Psychol Sci*. 2007;16(6):300-304. doi:10.1111/j.1467-8721.2007.00525.x.

30. Public Health Agency of Canada. Social Determinants of Health. Canadian Best Practices Portal. http://cbpp-pcpe.phac-aspc.gc.ca/public-health-topics/social-determinants-of-health/. Published 2016.

31. World Health Organisation. Social Determinants of Health. http://www.who.int/social_determinants/en/. Published 2017.

32. Fisher J, Herrman H. Gender, social policy and implications for promoting women's mental health. In: Chandra P, Herrman H, Fisher J, Kastrup M, Niaz U, Rondon M, eds. *Contemporary Topics in Women's Mental Health*. Chichester: Wiley-Blackwell; 2009:499-

506.

33. Bonanno GA, Diminich ED. Annual research review: Positive adjustment to adversity - Trajectories of minimal-impact resilience and emergent resilience. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):378-401. doi:10.1111/jcpp.12021.

34. Masten AS. *Ordinary Magic: Resilience in Development*. New York, NY: The Guilford Press; 2014.

35. Almedom AM, Glandon D. Resilience is not the Absence of PTSD any More than Health is the Absence of Disease. *J Loss Trauma*. 2007;12(792621630):127-143. doi:10.1080/15325020600945962.

36. Masten AS, O'Dougherty-Wright M. Resilience over the Lifespan. Developmental Perspectives on Resistances, Recovery, and Transformation. In: Reich JW, Zautra AJ, Hall JS, eds. *Handbook of Adult Resilience.* New York, NY: The Guildford Press; 2010:213-237. doi:10.1016/B978-0-12-374714-3.X0001-8.

37. Windle G. What is resilience? A review and concept analysis. *Rev Clin Gerontol*. 2011;21(2):152-169. doi:10.1017/S0959259810000420.

38. Wang J-L, Zhang D-J, Zimmerman MA. Resilience Theory and Its Implications for Chinese Adolescents. *Psychol Rep*. 2015;117(2):354-375. doi:10.2466/16.17.PR0.117c21z8.

39. Luthar SS, Cicchetti D, Becker B. The construct of resilience: a critical evaluation and guidelines for future work. *Child Dev*. 2000;71(3):543-562. doi:10.1111/1467-8624.00164.

40. Masten AS. Ordinary magic: Resilience processes in development. *Am Psychol*. 2001;56(3):227-238. doi:10.1037//0003-066X.56.3.227.

41. Garmezy N, Masten AS, Tellegen A. The Study of Stress and Competence in Children: A Building Block for Developmental Psychopathology. *Child Dev*. 1984;55(1):97. doi:10.2307/1129837.

42. Werner EE, Smith RS. *Overcoming the Odds: High Risk Children from Birth to Adulthood*. Ithaca, NY: Cornell University Press; 1992.

43. Luthar SS. Vulnerability and Resilience: A Study of High-Risk Adolescents. *Child Dev*. 1991;62(3):600-616. doi:10.1111/j.1467-8624.1991.tb01555.x.

44. Masten AS. Developmental psychopathology: Pathways to the future. *Int J Behav Dev*. 2006;30(1):47-54. doi:10.1177/0165025406059974.

45. Rutter M. Annual research review: Resilience - Clinical implications. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):474-487. doi:10.1111/j.1469-7610.2012.02615.x.

46. Luthar SS. Resilience in Development: A synthesis of research across five decades. In: Cohen D, Cicchetti D, eds. *Development and Psychopathology: Risk Disorder and Adaptation*. Wiley & Sons; 2006:739-795.

47. Masten AS. Resilience in developing systems: progress and promise as the fourth wave rises. *Dev Psychopathol*. 2007;19(3):921-930. doi:10.1017/S0954579407000442.

48. O'Dougherty-Wright M, Masten AS, Narayan AJ. Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In: Goldstein S, Brooks RB, eds. *Handbook of Resilience in Children*. New York, NY: Springer; 2013:15-38.

49. Silk JS, Vanderbilt-Adriance E, Shaw DS, et al. Resilience among children and adolescents at risk for depression: Mediation and moderation across social and neurobiological contexts. *Dev Psychopathol*. 2007;19(3):841-865. doi:10.1017/S0954579407000417.

50. Windle G, Markland DA, Woods RT. Examination of a theoretical model of psychological resilience in older age. *Aging Ment Health*. 2008;12(3):285-292. doi:10.1080/13607860802120763.

51. Cicchetti D, Curtis WJ. Multilevel perspectives on pathways to resilient functioning. *Dev Psychopathol*. 2007;19(3):627. doi:10.1017/S0954579407000314.

52. Roisman GI. Conceptual clarifications in the study of resilience. *Am Psychol*. 2005;60(April):264-265-267. doi:10.1037/0003-066X.60.3.264.

53. Vanderbilt-Adriance E, Shaw DS. Conceptualizing and Re-Evaluating Resilience Across Levels of Risk, Time, and Domains of Competence. *Clin Child Fam Psychol Rev*. 2008;11(1-2):30-58. doi:10.1007/s10567-008-0031-2.

54. Wexler LM, DiFluvio G, Burke TK. Resilience and marginalized youth: Making a case for personal and collective meaning-making as part of resilience research in public health. *Soc Sci Med*. 2009;69(4):565-570. doi:10.1016/j.socscimed.2009.06.022.

55. Masten AS. Global Perspectives on Resilience in Children and Youth. *Child Dev*. 2014;85(1):6-20. doi:10.1111/cdev.12205.

56. Ungar M, Brown M, Liebenberg L, et al. Unique pathways to resilience across cultures. *Adolescence*. 2007;42(166):287-310. doi:DOI: 10.1111/1540-4560.t01-1-00005.\n10.1177/0044118x03257030.

57. Liebenberg L, Ungar M. *Resilience in Action*. Toronto: University of Toronto Press; 2008.

58. Theron LC, Liebenberg L. Understanding cultural contexts and their relationship to resilience processes. In: *Youth Resilience and Culture: Commonalities and Complexities*. Vol 11. Hofstede; 2015:23-36. doi:10.1007/978-94-017-9415-2_2.

59. Ungar M. Resilience across cultures. *Br J Soc Work*. 2008;38(2):218-235. doi:10.1093/bjsw/bcl343.

60. Jones MD, Galliher R V. Ethnic identity and psychosocial functioning in navajo adolescents. *J Res Adolesc*. 2007;17(4):683-696. doi:10.1111/j.1532-7795.2007.00541.x.

61. Bonanno GA, Galea S, Bucciarelli A, Vlahov D. What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *J Consult Clin Psychol*. 2007;75(5):671-682. doi:10.1037/0022-006X.75.5.671.

62. Graber R, Turner R, Madill A. Best friends and better coping: Facilitating psychological resilience through boys' and girls' closest friendships. *Br J Psychol*. 2016;107(2):338-358. doi:10.1111/bjop.12135.

63. Netuveli G, Wiggins RD, Montgomery SM, Hildon Z, Blane D. Mental health and resilience at older ages: bouncing back after adversity in the British Household Panel Survey. *J Epidemiol Community Health*. 2008;62:987-991. doi:10.1136/jech.2007.069138.

64. Sanders J, Munford R, Thimasarn-Anwar T, Liebenberg L. Validation of the Child and Youth Resilience Measure (CYRM-28) on a Sample of At-Risk New Zealand Youth. *Res Soc*

Work Pract. November 2015. doi:10.1177/1049731515614102.

65. Bonanno GA, Romero SA, Klein SI. The Temporal Elements of Psychological Resilience: An Integrative Framework for the Study of Individuals, Families, and Communities. *Psychol Inq*. 2015;26(2):139-169. doi:10.1080/1047840X.2015.992677.
66. Tugade M, Fredrickson B. Reilient Individuals Use Positive Emotions to Bounce Back from Negative Emotional Experiences. *J Pers Soc Psychol*. 2004;86(2):320-333. doi:10.1037/0022.
67. Mak WWS, Ng ISW, Wong CCY. Resilience: Enhancing well-being through the positive cognitive triad. *J Couns Psychol*. 2011;58(4):610-617. doi:10.1037/a0025195.
68. Connor KM, Davidson JRT. Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety*. 2003;18(2):76-82. doi:10.1002/da.10113.
69. Campbell-Sills L, Cohan SL, Stein MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behav Res Ther*. 2006;44(4):585-599. doi:10.1016/j.brat.2005.05.001.
70. Ong AD, Bergeman CS, Boker SM. Resilience comes of age: Defining features in later adulthood. *J Pers*. 2009;77(6):1777-1804. doi:10.1111/j.1467-6494.2009.00600.x.
71. Ong AD, Bergeman CS, Chow S-M. Positive emotions as a basic building block of resilience in adulthood. *Handb adult resilience*. 2010:81-93. https://login.ezproxy.net.ucf.edu/login?auth=shibb&url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2010-10101-004&site=eds-live&scope=site.
72. Davidov M, Knafo-Noam A, Serbin LA, Moss E. The influential child: How children affect their environment and influence their own risk and resilience. *Dev Psychopathol*. 2015;27(4pt1):947-951. doi:10.1017/S0954579415000619.
73. Cicchetti D. Notes on Resilience under conditions of extreme stress: a multilevel perspective. *World Psychiatry*. 2010;9:145-154.
74. Fergus S, Zimmerman MA. Adolescent Resilience : A Framework for understanding healthy development in the face of risk. *Annu Rev Public Heal*. 2005;26(October):399-419. doi:10.1146/annurev.publhealth.26.021304.144357.
75. Zolkoski SM, Bullock LM. Resilience in children and youth: A review. *Child Youth Serv Rev*. 2012;34(12):2295-2303. doi:10.1016/j.childyouth.2012.08.009.
76. Stewart D, Wang D. Building resilience through school-based health promotion: A systematic review. *Int J Ment Health Promot*. 2012;14(4):207-218. doi:10.1080/14623730.2013.770319.
77. Fleming J, Ledogar RJ. Resilience, an Evolving Concept: A Review of Literature Relevant to Aboriginal Research. *Pimatisiwin*. 2008;6(2):7-23. doi:10.1016/j.clinph.2011.06.006.A.
78. Cicchetti D. Annual research review: Resilient functioning in maltreated children - Past, present, and future perspectives. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):402-422. doi:10.1111/j.1469-7610.2012.02608.x.
79. Fletcher D, Sarkar M. Psychological resilience: A review and critique of definitions, concepts, and theory. *Eur Psychol*. 2013;18(1):12-23. doi:10.1027/1016-9040/a000124.

80. Hu T, Zhang D, Wang J. A meta-analysis of the trait resilience and mental health. *Pers Individ Dif*. 2015;76:18-27. doi:10.1016/j.paid.2014.11.039.

81. Rutter M, Sonuga-Barke EJ, Castle J. I. Investigating the Impact of Early Institutional Deprivation on Development: Background and Research Strategy of the English and Romanian Adoptees (Era) Study. *Monogr Soc Res Child Dev*. 2010;75(1):1-20. doi:10.1111/j.1540-5834.2010.00548.x.

82. Supkoff LM, Puig J, Sroufe LA. Situating Resilience in Developmental Context. In: Micahel Ungar, ed. *The Social Ecology of Resilience*. New York, NY: Springer New York; 2012:127-142. doi:10.1007/978-1-4614-0586-3_12.

83. Masten AS, Herbers JE, Cutuli JJ, Lafavor TL. Promoting competence and resilience in the school. *Prof Sch Couns*. 2008;12(2):1-14.

84. Masten AS, Obradovic J. Disaster preparation and recovery: Lessons from research on resilience in human development. *Ecol Soc*. 2008;13(1). doi:Artn 9. http://www.ecologyandsociety.org/vol13/iss1/art9.

85. Ong AD, Bergeman CS, Bisconti TL, Wallace KA. Psychological resilience, positive emotions, and successful adaptation to stress in later life. *J Pers Soc Psychol*. 2006;91(4):730-749. doi:10.1037/0022-3514.91.4.730.

86. Roth M, von Collani G. A Head-to-Head Comparison of Big-Five Types and Traits in the Prediction of Social Attitudes. *J Individ Differ*. 2007;28(3):138-149. doi:10.1027/1614-0001.28.3.138.

87. Figueroa WS, Zoccola PM. Individual Differences of Risk and Resiliency in Sexual Minority Health: The Roles of Stigma Consciousness and Psychological Hardiness. *Psychol Sex Orientat Gend Divers*. 2015;2(3):329-338. doi:10.1037/sgd0000114.

88. Wilson PA, Meyer IH, Antebi-Gruszka N, Boone MR, Cook SH, Cherenack EM. Profiles of Resilience and Psychosocial Outcomes among Young Black Gay and Bisexual Men. *Am J Community Psychol*. 2016;57(1-2):144-157. doi:10.1002/ajcp.12018.

89. Denovan A, Macaskill A. Building resilience to stress through leisure activities: a qualitative analysis. *Ann Leis Res*. 2016; 20(4):446-466. doi:10.1080/11745398.2016.1211943.

90. Martínez-Martí ML, Ruch W. Character strengths predict resilience over and above positive affect, self-efficacy, optimism, social support, self-esteem, and life satisfaction. *J Posit Psychol*. 2016;9760(May):1-10. doi:10.1080/17439760.2016.1163403.

91. Graham L, Oswald AJ. Hedonic capital, adaptation and resilience. *J Econ Behav Organ*. 2010;76(2):372-384. doi:10.1016/j.jebo.2010.07.003.

92. Kasen S, Wickramaratne P, Gameroff MJ, Weissman MM. Religiosity and resilience in persons at high risk for major depression. *Psychol Med*. 2012;42(3):509-519. doi:10.1017/S0033291711001516.

93. Johnson J, Panagioti M, Bass J, Ramsey L, Harrison R. Resilience to emotional distress in response to failure, error or mistakes: A systematic review. *Clin Psychol Rev*. 2017;52:19-42. doi:10.1016/j.cpr.2016.11.007.

94. Wang Y, Zhang L, Kong X, Hong Y, Cheon B, Liu J. Pathway to neural resilience: Self-

esteem buffers against deleterious effects of poverty on the hippocampus. *Hum Brain Mapp*. 2016;37(11):3757-3766. doi:10.1002/hbm.23273.

95. Windle G, Woods RT, Markland DA. Living with Ill-Health in Older Age: The Role of a Resilient Personality. *J Happiness Stud*. 2010;11(6):763-777. doi:10.1007/s10902-009-9172-3.

96. Aburn G, Gott M, Hoare K. What is resilience? An Integrative Review of the empirical literature. *J Adv Nurs*. 2016;72(5):980-1000. doi:10.1111/jan.12888.

97. Luthar SS, Sawyer JA, Brown PJ. Conceptual issues in studies of resilience: Past, present, and future research. *Ann N Y Acad Sci*. 2006;1094:105-115. doi:10.1196/annals.1376.009.

98. Masten AS, Obradović J. Competence and resilience in development. *Ann N Y Acad Sci*. 2006;1094:13-27. doi:10.1196/annals.1376.003.

99. American Psychological Association Task Force on Resilience and Stregnth in Black Children and Adolesents. Resilience in African American children and adolescents: A vision for optimal development. *Washington, DC Author*. 2008:134. doi:10.1002/yd.20002.

100. Schoon I. Temporal and contextual dimensions to individual positive development: A developmental-contextual systems model of resilience. In: Ungar M, ed. *The Social Ecology of Resilience: A Handbook of Theory and Practice.* New York, NY: Springer New York; 2012:143-156. doi:10.1007/978-1-4614-0586-3_13.

101. Ungar M. Researching and theorizing resilience across cultures and contexts. *Prev Med (Baltim)*. 2012;55(5):387-389. doi:10.1016/j.ypmed.2012.07.021.

102. Sroufe LA. The concept of development in developmental psychopathology. *Child Dev Perspect*. 2009;3(3):178-183. doi:10.1111/j.1750-8606.2009.00103.x.

103. Southwick SM, Litz BT, Charney D, Friedman MJ. *Resilience and Mental Health: Challenges Across the Lifespan Resilience and Mental Health Challenges Across the Lifespan*. New York, NY: Cambridge University Press; 2011. www.cambridge.org. Accessed January 10, 2017.

104. Ozbay F, Fitterling H, Charney D, Southwick S. Social support and resilience to stress across the life span: A neurobiologic framework. *Curr Psychiatry Rep*. 2008;10(4):304-310. doi:10.1007/s11920-008-0049-7.

105. Meaney MJ. Epigenetics and the biological definition of gene X environment interactions. *Child Dev*. 2010;81(1):41-79. doi:10.1111/j.1467-8624.2009.01381.x.

106. Stevens HE, Leckman JF, Coplan JD, Suomi SJ. Risk and Resilience: Early Manipulation of Macaque Social Experience and Persistent Behavioral and Neurophysiological Outcomes. *J Am Acad Child Adolesc Psychiatry*. 2009;48(2):114-127. doi:10.1097/CHI.0b013e318193064c.

107. Boyce WT, Ellis BJ. Biological sensitivity to context: I. An evolutionary-developmental theory of the origins and functions of stress reactivity. *Dev Psychopathol*. 2005;17(2):271-301. doi:10.1017/S0954579405050145.

108. Ellis BJ, Essex MJ, Boyce WT. Biological sensitivity to context: II. Empirical explorations of an evolutionary-developmental theory. *Dev Psychopathol*. 2005;17(2):303-328.

doi:10.1017/S0954579405050157.

109. Belsky J, De Haan M. Annual research review: Parenting and children's brain development: The end of the beginning. *J Child Psychol Psychiatry Allied Discip*. 2011;52(4):409-428. doi:10.1111/j.1469-7610.2010.02281.x.

110. Bowlby J. *Attachment: Attachment and Loss*. 2nd ed. New York, NY: Basic Books; 1973.

111. Phelps E, Zimmerman S, Warren AEA, Jeličić H, von Eye A, Lerner RM. The structure and developmental course of Positive Youth Development (PYD) in early adolescence: Implications for theory and practice. *J Appl Dev Psychol*. 2009;30(5):571-584. doi:10.1016/j.appdev.2009.06.003.

112. Bandura A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychol Rev*. 1977;84(2):191-215. doi:10.1037/0033-295X.84.2.191.

113. Bandura A. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall; 1986.

114. Svetina M. Resilience in the context of Erikson's theory of human development. *Curr Psychol*. 2014;33(3):393-404. doi:10.1007/s12144-014-9218-5.

115. Bonanno GA. Uses and abuses of the resilience construct: Loss, trauma, and health-related adversities. *Soc Sci Med*. 2012;74(5):753-756. doi:10.1016/j.socscimed.2011.11.022.

116. Masten AS, Cicchetti D. Risk and resilience in development and psychopathology: The legacy of Norman Garmezy. *Dev Psychopathol*. 2012;24(2):333-334. doi:10.1017/S0954579412000016.

117. Masten AS, Burt KB, Coatsworth D. Competence and psychopathology in development. In: Cohen D, Cicchetti D, eds. *Development and Psychopathology*. 3rd ed. Wiley & Sons; 2006:697-738.

118. Grafton E, Gillespie B, Henderson S. Resilience: The Power Within. *Oncol Nurs Forum*. 2010;37(6):698-705. doi:10.1188/10.ONF.698-705.

119. Hjemdal O, Aune T, Reinfjell T, Stiles TC, Friborg O. Resilience as a Predictor of Depressive Symptoms: A Correlational Study with Young Adolescents. *Clin Child Psychol Psychiatry*. 2007;12(1):91-104. doi:10.1177/1359104507071062.

120. Hjemdal O, Friborg O, Stiles TC, Rosenvinge JH, Martinussen M. Resilience Predicting Psychiatric Symptoms: A Prospective Study of Protective Factors and their Role in Adjustment to Stressful Life Events. *Clin Psychol Psychother Clin Psychol Psychother*. 2006;13(3):194-201. doi:10.1002/cpp.488.

121. Heckman JJ. Skill formation and the economics of investing in disadvantaged children. *Science (80-)*. 2006;312(5782):1900-1902. www.cdc.gov/nchs/r&d/rdc.htm. Accessed February 23, 2017.

122. Geschwind N, Peeters F, Jacobs N, et al. Meeting risk with resilience: High daily life reward experience preserves mental health. *Acta Psychiatr Scand*. 2010;122(2):129-138. doi:10.1111/j.1600-0447.2009.01525.x.

123. Masten AS, Cicchetti D. Developmental cascades. *Dev Psychopathol*. 2010;22(3):491-495. doi:10.1017/S0954579410000222.

124. Masten AS, Tellegen A. Resilience in developmental psychopathology: Contributions of the Project Competence Longitudinal Study. *Dev Psychopathol*. 2012;24(2):345-361. doi:10.1017/S095457941200003X.

125. Rutter M. Implications of resilience concepts for scientific understanding. *Ann N Y Acad Sci*. 2006;1094:1-12. doi:10.1196/annals.1376.002.

126. Donnon T, Hammond W. A psychometric assessment o f the self-reported youth resiliency: assessing developmental strengths questionnaire. *Psychol Reports O Psychol Reports*. 2007;100:963-978. doi:10.2466/PRO.100.3.963-978.

127. Sarapas C, Cai G, Bierer LM, et al. Genetic markers for PTSD risk and resilience among survivors of the World Trade Center attacks. *Dis Markers*. 2011;30(2-3):101-110. doi:10.3233/DMA-2011-0764.

128. Bowes L, Jaffee SR. Biology, genes, and resilience: toward a multidisciplinary approach. *Trauma Violence Abuse*. 2013;14(3):195-208. doi:10.1177/1524838013487807.

129. Donnellan MB, Conger KJ, McAdams KK, Neppl TK. Personal Characteristics and Resilience to Economic Hardship and Its Consequences: Conceptual Issues and Empirical Illustrations. *J Pers*. 2009;77(6):1645-1676. doi:10.1111/j.1467-6494.2009.00596.x.

130. Rutter M, Cox A, Tupling C, Berger M, Yule W. Attainment and adjustment in two geographical areas. I--The prevalence of psychiatric disorder. *Br J Psychiatry*. 1975;126:493-509.

131. Rutter M, Quinton D. Long-term follow-up of women institutionalised in childhood: Factors promoting good functioning in adult life. *Br J Psychol Dev Psychol*. 1984;18:225-234.

132. Werner EE, Smith RS. *Vulnerable but Invincible*. New York, NY: McGraw Hill; 1982.

133. Werner EE, Smith RS. *Journeys from Childhood to Midlife: Risk, Resilience and Recovery*. Ithaca, NY: Cornell University Press; 2001.

134. Hall BJ, Tol WA, Jordans MJD, Bass J, de Jong JTVM. Understanding Resilience in Armed Conflict: Social Resources and Mental Health of Children in Burundi. *Soc Sci Med*. 2014;114:121-128. doi:10.1016/j.socscimed.2014.05.042.

135. Sameroff AJ, Rosenblum KL. Psychosocial constraints on the development of resilience. *Ann N Y Acad Sci*. 2006;1094:116-124. doi:10.1196/annals.1376.010.

136. Wyman PA, Sandler I, Wolchik S, Nelson K. Resilience as cumulative competence promotion and stress protection: Theory and intervention. In: Cicchetti D, Rapport J, Sandler I, Weissberg R., eds. *The Promotion of Wellness in Children and Adolescents*. Washington, DC: Child Welfare League of America; 2000.

137. Parritz R, Troy M. *Disorders of Childhood*. Belmont, CA: Wadsworth; 2010.

138. Fenning RM, Baker JK. Mother–child interaction and resilience in children with early developmental risk. *J Fam Psychol*. 2012;26(3):411-420. doi:10.1037/a0028287.

139. Mukherjee S, Kim S, Gibbons LE, et al. Genetic architecture of resilience of executive functioning. *Brain Imaging Behav*. 2012;6(4):621-633. doi:10.1007/s11682-012-9184-1.

140. Lynch MA, Johnson RW. The impact of aging on the brain--risk, resilience and repair. *Brain Behav Immun*. 2012;26(5):714-716. doi:10.1016/j.bbi.2012.02.005.

141. Karatoreos IN, McEwen BS. Annual research review: The neurobiology and physiology of resilience and adaptation across the life course. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):337-347. doi:10.1111/jcpp.12054.

142. Jessen HM, Auger AP. Sex differences in epigenetic mechanisms may underlie risk and resilience for mental health disorders. *Epigenetics*. 2011;6(7):857-861. doi:10.4161/epi.6.7.16517.

143. Tomás JM, Sancho P, Melendez JC, Mayordomo T. Resilience and coping as predictors of general well-being in the elderly: a structural equation modeling approach. *Aging Ment Health*. 2012;16(3):317-326. doi:10.1080/13607863.2011.615737.

144. Shiner RL, Masten AS. Childhood personality as a harbinger of competence and resilience in adulthood. *Dev Psychopathol*. 2012;24(2):507-528. doi:10.1017/S0954579412000120.

145. Simeon D, Yehuda R, Cunill R, Knutelska M, Putnam FW, Smith LM. Factors associated with resilience in healthy adults. *Psychoneuroendocrinology*. 2007;32(8-10):1149-1152. doi:10.1016/j.psyneuen.2007.08.005.

146. Johnson J, Gooding PA, Wood AM, Taylor PJ, Pratt D, Tarrier N. Resilience to suicidal ideation in psychosis: Positive self-appraisals buffer the impact of hopelessness. *Behav Res Ther*. 2010;48(9):883-889. doi:10.1016/j.brat.2010.05.013.

147. Nath P, Pradhan RK. Influence of Positive Affect on Physical Health and Psychological Well-Being: Examining the Mediating Role of Psychological Resilience. *J Health Manag*. 2012;14(2):161-174. doi:10.1177/097206341201400206.

148. Shing EZ, Jayawickreme E, Waugh CE. Contextual Positive Coping as a Factor Contributing to Resilience After Disasters. *J Clin Psychol*. 2016;72(12):1287-1306. doi:10.1002/jclp.22327.

149. Alessi EJ. Resilience in Sexual and Gender Minority Forced Migrants: A Qualitative Exploration. *Traumatology (Tallahass Fla)*. 2016;22(3):203-213. doi:10.1037/trm0000077.

150. Wiles JL, Wild K, Kerse N, Allen RES. Resilience from the point of view of older people: "There"s still life beyond a funny knee'. *Soc Sci Med*. 2012;74(3):416-424. doi:10.1016/j.socscimed.2011.11.005.

151. McGhee P. *Humor: The Lighter Path to Resilience and Health*. Bloomington, IN: AuthorHouse; 2010.

152. Southwick SM, Vythilingam M, Charney DS. The psychobiology of depression and resilience to stress: implications for prevention and treatment. *Annu Rev Clin Psychol*. 2005;1(1):255-291. doi:10.1146/annurev.clinpsy.1.102803.143948.

153. Kuiper NA. Humor and Resiliency: Towards a Process Model of Coping and Growth. *Eur J Psychol*. 2012;8(3):475-491. doi:10.5964/ejop.v8i3.464.

154. Carlson JM, Dikecligil GN, Greenberg T, Mujica-Parodi LR. Trait reappraisal is associated with resilience to acute psychological stress. *J Res Pers*. 2012;46(5):609-613. doi:10.1016/j.jrp.2012.05.003.

155. Zelazo PD, Carlson SM. Hot and Cool Executive Function in Childhood and Adolescence: Development and Plasticity. *Child Dev Perspect*. 2012;6(4):354-360. doi:10.1111/j.1750-8606.2012.00246.x.

156. Moffitt TE, Arseneault L, Belsky D, et al. A gradient of childhood self-control predicts health, wealth, and public safety. *Proc Natl Acad Sci U S A*. 2011;108 (7):2693-2698. doi:10.1073/pnas.1010076108.

157. Armstrong AR, Galligan RF, Critchley CR. Emotional intelligence and psychological resilience to negative life events. *Pers Individ Dif*. 2011;51(3):331-336. doi:10.1016/j.paid.2011.03.025.

158. Corley C. Creative Expression and Resilience Among Holocaust Survivors. *J Hum Behav Soc Environ*. 2010;20(4):542-552. doi:10.1080/10911350903275325.

159. McFadden SH, Basting AD. Healthy Aging Persons and Their Brains: Promoting Resilience Through Creative Engagement. *Clin Geriatr Med*. 2010;26(1):149-161. doi:10.1016/j.cger.2009.11.004.

160. Betancourt TS, Borisova II, Williams TP, et al. Sierra Leone's Former Child Soldiers : A Follow-Up Study of Psychosocial Adjustment and Community Reintegration. *Child Dev*. 2010;81(4):1077-1095.

161. Takahashi K, Sase E, Kato A, Igari T, Kikuchi K, Jimba M. Psychological resilience and active social participation among older adults with incontinence: a qualitative study. *Aging Ment Health*. 2015;7863(April 2016):20(11):1-7. doi:10.1080/13607863.2015.1065792.

162. Kalisch R, Müller MB, Tüscher O. A conceptual framework for the neurobiological study of resilience. *Behav Brain Sci*. 2015;38(2015):1-79. doi:10.1017/S0140525X1400082X.

163. Maltby J, Day L, Hall S. Refining trait resilience: Identifying engineering, ecological, and adaptive facets from extant measures of resilience. *PLoS One*. 2015;10(7). doi:10.1371/journal.pone.0131826.

164. Crawford E, O'Dougherty-Wright M, Masten AS. Resilience and spirituality in youth. In: Roehlkepartain EC, King PE, Wagener L, Benson PL, eds. *The Handbook of Spiritual Development in Childhood and Adolescence*. Thousand Oaks, CA: Sage Publications, Inc.; 2006.

165. Walker JJ, Longmire-Avital B. The impact of religious faith and internalized homonegativity on resiliency for black lesbian, gay, and bisexual emerging adults. *Dev Psychol*. 2013;49(9):1723-1731. doi:10.1037/a0031059.

166. Barnes AJ. Childhood Stress and Resilience. In: *Health Promotion for Children and Adolescents*. ; 2016:85-98. doi:10.1007/978-1-4899-7711-3_5.

167. Rutter M, Sonuga-Barke EJ. X. Conclusions: Overview of Findings From the Era Study, Inferences, and Research Implications. *Monogr Soc Res Child Dev*. 2010;75(1):212-229. doi:10.1111/j.1540-5834.2010.00557.x.

168. Bayer JK, Rozkiewicz M. Can parenting foster resiliency to mental health problems in at-risk infants? *Int J Ment Health Promot*. 2015;17(3):129-139.

doi:10.1080/14623730.2015.1023585.

169. Masten AS, Garmezy N, Tellegen A, Pellegrini DS, Larkin K, Larsen A. Competence and Stress in School Children: the Moderating Effects of Individual and Family Qualities. *J Child Psychol Psychiatry*. 1988;29(6):745-764. doi:10.1111/j.1469-7610.1988.tb00751.x.

170. Masten AS, Burt KB, Roisman GI, Obradović J, Long JD, Tellegen A. Resources and resilience in the transition to adulthood: continuity and change. *Dev Psychopathol*. 2004;16(4):1071-1094. doi:10.1017/S0954579404040143.

171. Masten AS, Hubbard JJ, Gest SD, Tellegen A, Garmezy N, Ramirez M. Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Dev Psychopathol*. 1999;11(1):143-169.

172. Agnafors, S., C.G. Svedin et al. A Biopsychosocial Approach to Risk and Resilience on Behavior in Children Followed from Birth to Age 12. *Child Psychiatry Hum Dev*. doi:10.1007/s10578-016-0684-x.

173. Bennett KM, Reyes-Rodriguez MF, Altamar P, Soulsby LK. Resilience amongst Older Colombians Living in Poverty: an Ecological Approach. *J Cross Cult Gerontol*. 2016;31(4):385-407. doi:10.1007/s10823-016-9303-3.

174. Beeghly M, Tronick E. Early resilience in the context of parentinfant relationships: A social developmental perspective. *Curr Probl Pediatr Adolesc Health Care*. 2011;41(7):197-201. doi:10.1016/j.cppeds.2011.02.005.

175. Resnick B. Resilience in Older Adults. *Top Geriatr Rehabil*. 2014;30(3):155-163. doi:10.1097/TGR.0000000000000024.

176. Sampson RJ, Laub JH, Wimer C, et al. Does Marriage Reduce Crime? a Counterfactual Approach To Within-Individual Causal Effects. *Criminology*. 2006;44(3):465-508.

177. Finkenauer C, Righetti F. Understanding in close relationships: An interpersonal approach. *Eur Rev Soc Psychol*. 2011;22(1):316-363. doi:10.1080/10463283.2011.633384.

178. Betancourt TS, Khan KT. The mental health of children affected by armed conflict: protective processes and pathways to resilience. *Int Rev Psychiatry*. 2008;20(3):317-328. doi:10.1080/09540260802090363.

179. Helgeson V, Lopez L. Social support and growth following adversity. In: Reich J, Zautra A, Hall J, eds. *Handbook of Adult Resilience*. New York, NY: Guilford; 2010:309–330.

180. Sanders J, Munford R. Fostering a sense of belonging at school—five orientations to practice that assist vulnerable youth to create a positive student identity. *Sch Psychol Int*. 2016;37(2):155-171. doi:10.1177/0143034315614688.

181. Ungar M. Families as navigators and negotiators: Facilitating culturally and contextually specific expressions of resilience. *Fam Process*. 2010;49(3):421-435. doi:10.1111/j.1545-5300.2010.01331.x.

182. Ungar M, Liebenberg L, Landry N, Ikeda J. Caregivers, Young People with Complex Needs, and Multiple Service Providers: A Study of Triangulated Relationships. *Fam Process*. 2012;51(2):193-206. doi:10.1111/j.1545-5300.2012.01395.x.

183. Kumsta R, Kreppner J, Rutter M, et al. Deprivation-Specific Psychological Patterns. *Monogr*

Soc Res Child Dev. 2010;75:48-78.

184. Castle J, Beckett C, Rutter M, Sonuga-Barke E. Postadoption Environmental Features. *Monogr Soc Res Child Dev*. 2010;75:167-186.

185. Rutter M. Developmental Catch-up, and Deficit, Following Adoption after Sever Global Early Privation. *J Child Psychol Psychiatry*. 1998;39(4):465-476. doi:0021–9830/98.

186. Sanders J, Munford R, Liebenberg L. Young people, their families and social supports: Understanding resilience with complexity theory. In: *The Social Ecology of Resilience: A Handbook of Theory and Practice.* ; 2012:233-243. doi:10.1007/978-1-4614-0586-3_19.

187. Sanders J, Munford R, Liebenberg L. The role of teachers in building resilience of at risk youth. *Int J Educ Res*. 2016;80:111-123. doi:10.1016/j.ijer.2016.10.002.

188. Bonanno GA, Ho SMY, Chan JCK, et al. Psychological resilience and dysfunction among hospitalized survivors of the SARS epidemic in Hong Kong: A latent class approach. *Heal Psychol*. 2008;27(5):659-667. doi:10.1037/0278-6133.27.5.659.

189. Quale J, Schanke A-K. Resilience in the face of coping with a severe physical injury: A study of trajectories of adjustment in a rehabilitation setting. *Rehabil Psychol*. 2010;55(1):12-22. doi:10.1023/A.

190. Tomini F, Tomini SM, Groot W. Understanding the value of social networks in life satisfaction of elderly people: a comparative study of 16 European countries using SHARE data. *BMC Geriatr*. 2016;16(1):203. doi:10.1186/s12877-016-0362-7.

191. Andrew E, Williams J, Waters C. Dialectical Behaviour Therapy and attachment: Vehicles for the development of resilience in young people leaving the care system. *Clin Child Psychol Psychiatry*. 2014;19(4):503-515. doi:10.1177/1359104513508964.

192. Stevens K, Munford R, Sanders J, Liebenberg L, Ungar M. Change, relationships and implications for practice: The experiences of young people who use multiple services. *Int J Child, Youth Fam Stud*. 2014;5(3):447-465.

193. Sanders J, Munford R. Youth-centred practice: Positive youth development practices and pathways to better outcomes for vulnerable youth. *Child Youth Serv Rev*. 2014;46:160-167. doi:10.1016/j.childyouth.2014.08.020.

194. Ungar M. Resilience after maltreatment: The importance of social services as facilitators of positive adaptation. *Child Abus Negl*. 2013;37(2-3):110-115. doi:10.1016/j.chiabu.2012.08.004.

195. Woodward EN, Banks RJ, Marks AK, Pantalone DW. Identifying Resilience Resources for HIV Prevention Among Sexual Minority Men: A Systematic Review. *AIDS Behav*. December 2016. doi:10.1007/s10461-016-1608-2.

196. Ahrens KR, DuBois DL, Richardson LP, Fan M-Y, Lozano P. Youth in Foster Care With Adult Mentors During Adolescence Have Improved Adult Outcomes. *Pediatrics*. 2008;121(2):e246-e252. doi:10.1542/peds.2007-0508.

197. Sandler I, Schoenfelder E, Wolchik S, MacKinnon D. Long-term impact of prevention programs to promote effective parenting: Lasting effects but uncertain processes. *Annu Rev Psychol*. 2011;62(1):299-329. doi:10.1146/annurev.psych.121208.131619.

198. Tronick E, Beeghly M. Infants' meaning-making and the development of mental health problems. *Am Psychol*. 2011;66(2):107-119. doi:10.1037/a0021631.

199. DuMont KA, Widom CS, Czaja SJ. Predictors of resilience in abused and neglected children grown-up: The role of individual and neighborhood characteristics. *Child Abus Negl*. 2007;31(3):255-274. doi:10.1016/j.chiabu.2005.11.015.

200. Bowes L, Maughan B, Caspi A, Moffitt TE, Arseneault L. Families promote emotional and behavioural resilience to bullying: Evidence of an environmental effect. *J Child Psychol Psychiatry Allied Discip*. 2010;51(7):809-817. doi:10.1111/j.1469-7610.2010.02216.x.

201. Papoušek M. Resilience, strengths, and regulatory capacities: Hidden resources in developmental disorders of infant mental health. *Infant Ment Health J*. 2011;32(1):29-46. doi:10.1002/imhj.20282.

202. Winston R, Chicot R. The importance of early bonding on the long-term mental health and resilience of children. *London J Prim Care (Abingdon)*. 2016;8(1):12-14. doi:10.1080/17571472.2015.1133012.

203. DuMont K, Ehrhard-Dietzel S, Kirkland K. Averting Child Maltreatment: Individual, Economic, Social, and Community Resources that Promote Resilient Parenting. In: Ungar M, ed. *The Social Ecology of Resilience*. New York, NY: Springer New York; 2012:199-217. doi:10.1007/978-1-4614-0586-3_17.

204. Brown DL, Tylka TL. Racial Discrimination and Resilience in African American Young Adults: Examining Racial Socialization as a Moderator. *J Black Psychol COLUMBIA UNIV*. 2016;37(3):259-285. doi:10.1177/0095798410390689.

205. Landau J. Communities that care for families: The LINC model for enhancing individual, family, and community resilience. *Am J Orthopsychiatry*. 2010;80(4):516-524. doi:10.1111/j.1939-0025.2010.01054.x.

206. Mustanski B, Newcomb ME, Garofalo R. Mental Health of Lesbian, Gay, and Bisexual Youths: A Developmental Resiliency Perspective. *J Gay Lesbian Soc Serv*. 2011;23(2):204-225. doi:10.1080/10538720.2011.561474.

207. Pieloch KA, McCullough MB, Marks AK. Resilience of children with refugee statuses: A research review. *Spec Issue Immigrants Refug / Les immigrants les Refug*. 2016;57(4):330-339. doi:10.1037/cap0000073.

208. DiRago AC, Vaillant GE. Resilience in Inner City Youth: Childhood Predictors of Occupational Status Across the Lifespan. *J Youth Adolesc*. 2006;36(1):61-70. doi:10.1007/s10964-006-9132-8.

209. Bariola E, Lyons A, Leonard W, Pitts M, Badcock P, Couch M. Demographic and psychosocial factors associated with psychological distress and resilience among transgender individuals. *Am J Public Health*. 2015;105(10):2108-2116. doi:10.2105/AJPH.2015.302763.

210. Rutter M. Resilience, competence, and coping. *Child Abus Negl*. 2007;31(3):205-209. doi:10.1016/j.chiabu.2007.02.001.

211. LaFromboise T, Hoyt DR, Oliver L, Whitbeck LB. Family, community, and school influences on resilience among American Indian adolescents in the upper midwest. *J Community Psychol*. 2006;34(2):193-209. doi:10.1002/jcop.20090.

212. Bouchey HA. Perceived Romantic Competence, Importance of Romantic Domains, and Psychosocial Adjustment. *J Clin Child Adolesc Psychol*. 2007;36(4):503-514. doi:10.1080/15374410701653120.

213. Edward KL, Welch A, Chater K. The phenomenon of resilience as described by adults who have experienced mental illness. *J Adv Nurs*. 2009;65(3):587-595. doi:10.1111/j.1365-2648.2008.04912.x.

214. Black-Hughes C, Stacy PD. Early childhood attachment and its impact on later life resilience: a comparison of resilient and non-resilient female siblings. *J Evid Based Soc Work*. 2013;10(5):410-420. doi:10.1080/15433714.2012.759456.

215. Liebenberg L, Theron LC, Sanders J, et al. Bolstering resilience through teacher-student interaction: Lessons for school psychologists. *Sch Psychol Int*. 2016;37(2):140-154. doi:10.1177/0143034315614689.

216. Sanders J, Munford R, Thimasarn-Anwar T, Liebenberg L, Ungar M. The role of positive youth development practices in building resilience and enhancing wellbeing for at-risk youth. *Child Abuse Negl*. 2015;42:40-53. doi:10.1016/j.chiabu.2015.02.006.

217. Theron LC, Liebenberg L, Malindi M. When schooling experiences are respectful of children's rights: A pathway to resilience. *Sch Psychol Int*. 2014;35(3):253-265. doi:10.1177/0142723713503254.

218. Wekerle C, Waechter R, Chung R. Contexts of Vulnerability and Resilience: Childhood Maltreatment, Cognitive Functioning and Close Relationships. In: Ungar M, ed. *The Social Ecology of Resilience*. New York, NY: Springer New York; 2012:187-198. doi:10.1007/978-1-4614-0586-3_16.

219. Farruggia SP, Greenberger E, Chen C, Heckhausen J. Perceived Social Environment and Adolescents' Well-Being and Adjustment: Comparing a Foster Care Sample With a Matched Sample. *J Youth Adolesc*. 2006;35(3):330-339. doi:10.1007/s10964-006-9029-6.

220. Sanders J, Munford R, Liebenberg L, Ungar M. Peer paradox: the tensions that peer relationships raise for vulnerable youth. *Child Fam Soc Work*. 2017;22(1):3-14. doi:10.1111/cfs.12188.

221. Stumblingbear-Riddle G, Romans JS. Resilience among urban American Indian adolescents: exploration into the role of culture, self-esteem, subjective well-being, and social support. *Am Indian Alsk Nativ Ment Heal Res*. 2012;19(2):1-19. doi:10.5820/aian.1902.2012.1.

222. Silovsky JF, Niec L, Bard D, Hecht DB. Treatment for Preschool Children With Interpersonal Sexual Behavior Problems: A Pilot Study. *J Clin Child Adolesc Psychol*. 2007;36(3):378-391. doi:10.1080/15374410701444330.

223. Tol WA, Song S, Jordans MJD. Annual research review: Resilience and mental health in children and adolescents living in areas of armed conflict - A systematic review of findings in low- and middle-income countries. *J Child Psychol Psychiatry Allied Discip*. 2013;54(4):445-460. doi:10.1111/jcpp.12053.

224. VanderPlaat M. Activating the sociological imagination to explore the boundaries of resilience research and practice. *Sch Psychol Int*. 2016;37(2):189-203. doi:10.1177/0143034315615938.

225. Herbers JE, Cutuli JJ, Supkoff LM, et al. Early Reading Skills and Academic Achievement Trajectories of Students Facing Poverty, Homelessness, and High Residential Mobility. *Educ Res*. 2012;41(9):366-374. doi:10.3102/0013189X12445320.

226. Greenberg MT. Promoting resilience in children and youth: Preventive interventions and their interface with neuroscience. *Ann N Y Acad Sci*. 2006;1094:139-150. doi:10.1196/annals.1376.013.

227. Toland J, Carrigan D. Educational psychology and resilience: New concept, new opportunities. *Sch Psychol Int*. 2011;32(1):95-106. doi:10.1177/0143034310397284.

228. Baker DP, Salinas D, Eslinger PJ. An envisioned bridge: Schooling as a neurocognitive developmental institution. *Dev Cogn Neurosci*. 2012;2:S6-S17. doi:10.1016/j.dcn.2011.12.001.

229. Blair C. School readiness. Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *Am Psychol*. 2002;57(2):111-127. doi:10.1037/0003-066X.57.2.111.

230. Blair C. How similar are fluid cognition and general intelligence? A developmental neuroscience perspective on fluid cognition as an aspect of human cognitive ability. *Behav Brain Sci*. 2006;29 (2):109-125-160. doi:10.1017/S0140525X06009034.

231. Henderson N. Resilience in Schools and Curriculum Design. In: Ungar M, ed. *The Social Ecology of Resilience*. New York, NY: Springer New York; 2012:297-306. doi:10.1007/978-1-4614-0586-3_23.

232. Song S, Doll B, Marth K. *Classroom Resilience: Practical Assessment for Intervention*.; 2013. doi:10.1007/978-1-4614-4939-3.

233. Doll B. Enhancing Resilience in Classrooms. In: Goldstein S, Brooks R, eds. *Handbook of Resilience in Children*. 2nd ed. Boston, MA: Springer US; 2013:399-409. doi:10.1007/978-1-4614-3661-4_23.

234. Theron LC. Black students' recollections of pathways to resilience: Lessons for school psychologists. *Sch Psychol Int*. 2013;34(5):527-539. doi:10.1177/0143034312472762.

235. Wald J, Losen DJ. Defining and redirecting a school-to-prison pipeline. *New Dir Youth Dev*. 2003; 3(99):9-15. doi:10.1002/yd.51.

236. Cohen J. Creating a Positive School Climate: A Foundation for Resilience. In: Goldstein S, Brooks R, eds. *Handbook of Resilience in Children*. 2nd ed. Boston, MA: Springer US; 2013:411-423. doi:10.1007/978-1-4614-3661-4_24.

237. Lerner RM, Agans JP, Arbeit MR, et al. Resilience and Positive Youth Development: A Relational Developmental Systems Model. In: Goldstein S, Brooks R, eds. *Handbook of Resilience in Children*. 2nd ed. Boston, MA: Springer US; 2013:293-308. doi:10.1007/978-1-4614-3661-4_17.

238. Ungar M, Liebenberg L. Contextual Factors Related to School Engagement and Resilience: A Study of Canadian Youth with Complex Needs. *J Child Youth Dev*. 2013;1(1):3-26.

239. Ungar M, Liebenberg L. Ethnocultural factors, resilience, and school engagement. *Sch Psychol Int*. 2013;34(5):514-526.

240. Obradović J, Masten AS. Developmental Antecedents of Young Adult Civic Engagement. *Appl Dev Sci*. 2007;11(1):2-19. doi:10.1080/10888690709336720.

241. Durlak JA, Weissberg RP, Pachan M. A Meta-Analysis of After-School Programs That Seek to Promote Personal and Social Skills in Children and Adolescents. *Am J Community Psychol*. 2010;45(3-4):294-309. doi:10.1007/s10464-010-9300-6.

242. Williams AL, Merten MJ. Linking Community, Parenting, and Depressive Symptom Trajectories: Testing Resilience Models of Adolescent Agency Based on Race/Ethnicity and Gender. *J Youth Adolesc*. 2014;43(9):1563-1575. doi:10.1007/s10964-014-0141-8.

243. Lavretsky H. Resilience, Stress, and Mood Disorders in Old Age. *Annu Rev Gerontol Geriatr*. 2012;32(1):49-X. doi:10.1891/0198-8794.32.49.

244. Hildon Z, Montgomery SM, Blane D, Wiggins RD, Netuveli G. Examining resilience of quality of life in the face of health-related and psychosocial adversity at older ages: What is "right" about the way we age? *Gerontologist*. 2010;50(1):36-47. doi:10.1093/geront/gnp067.

245. Pietrzak RH, Tracy M, Galea S, et al. Resilience in the face of disaster: Prevalence and longitudinal course of mental disorders following Hurricane Ike. *PLoS One*. 2012;7(6). doi:10.1371/journal.pone.0038964.

246. Barbarin O, Bryant D, McCandies T, et al. Children enrolled in public pre-K: the relation of family life, neighborhood quality, and socioeconomic resources to early competence. *Am J Orthopsychiatry*. 2006;76(2):265-276. doi:10.1037/0002-9432.76.2.265.

247. Jaffee SR, Caspi A, Moffitt TE, Polo-Tomás M, Taylor A. Individual, family, and neighborhood factors distinguish resilient from non-resilient maltreated children: A cumulative stressors model. *Child Abuse Negl*. 2007;31(3):231-253. doi:10.1016/j.chiabu.2006.03.011.

248. Li ST, Nussbaum KM, Richards MH. Risk and protective factors for urban African-American youth. *Am J Community Psychol*. 2007;39(1-2):21-35. doi:10.1007/s10464-007-9088-1.

249. Williamson A, D'Este C, Clapham K, et al. What are the factors associated with good mental health among Aboriginal children in urban New South Wales, Australia? Phase I findings from the Study of Environment on Aboriginal Resilience and Child Health (SEARCH). *BMJ Open*. 2016;6(7):e011182. doi:10.1136/bmjopen-2016-011182.

250. Ungar M, Liebenberg L, Dudding P, Armstrong M, van de Vijver F. Patterns of service use, individual and contextual risk factors, and resilience among adolescents using multiple psychosocial services. *Child Abuse Negl*. 2013;37(2-3):150-159. doi:10.1016/j.chiabu.2012.05.007.

251. Sanders J, Munford R, Thimasarn-Anwar T, Liebenberg L, Ungar M. The role of positive youth development practices in building resilience and enhancing wellbeing for at-risk youth. *Child Abuse Negl*. 2015;42:40-53. doi:10.1016/j.chiabu.2015.02.006.

252. van der Wel KA, Bambra C, Dragano N, Eikemo TA, Lunau T. Risk and resilience: Health inequalities, working conditions and sickness benefit arrangements: An analysis of the 2010 European Working Conditions survey. *Sociol Heal Illn*. 2015;37(8):1157-1172. doi:10.1111/1467-9566.12293.

253. Klasen F, Oettingen G, Daniels J, Post M, Hoyer C, Adam H. Posttraumatic resilience in former Ugandan child soldiers. *Child Dev*. 2010;81(4):1096-1113. doi:10.1111/j.1467-8624.2010.01456.x.

254. Park CL. Religiousness/Spirituality and Health: A Meaning Systems Perspective. *J Behav Med*. 2007;30(4):319-328. doi:10.1007/s10865-007-9111-x.

255. Van Dyke CJ, Elias MJ. How forgiveness, purpose, and religiosity are related to the mental health and well-being of youth: A review of the literature. *Ment Health Relig Cult*. 2007;10(4):395-415. doi:10.1080/13674670600841793.

256. Brewer-Smyth K, Koenig HG. Could spirituality and religion promote stress resilience in survivors of childhood trauma? *Issues Ment Health Nurs*. 2014;35(4):251-256. doi:10.3109/01612840.2013.873101.

257. Koenig HG. Research on Religion, Spirituality, and Mental Health: A Review. *Can J psychiatry*. 2009;54(5):283-291. http://journals.sagepub.com.ezproxy.library.dal.ca/doi/pdf/10.1177/070674370905400502. Accessed March 5, 2017.

258. Theron LC, Liebenberg L, Ungar M. *Youth Resilience and Culture: Commonalities and Complexities*. Vol 11.; 2015. doi:10.1037/t23633-000.

259. Ungar M, Brown M, Liebenberg L, Cheung M, Levine K. Distinguishing differences in pathways to resilience among Canadian youth. *Can J Community Ment Heal*. 2008;27(1):1-13.

260. Hughes D, Rodriguez J, Smith EP, Johnson DJ, Stevenson HC, Spicer P. Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Dev Psychol*. 2006;42(5):747-770. doi:10.1037/0012-1649.42.5.747.

261. Serafica FC, Vargas LA. Cultural diversity in the development of child psychopathology. In: Cicchetti D, Cohen DJ, eds. *Developmental Psychopathology: Vol. 1. Theory and Method*. 2nd ed. Hoboken, NJ: Wiley; 2006:588-626.

262. Evans AB, Banerjee M, Meyer R, Aldana A, Foust M, Rowley S. Racial Socialization as a Mechanism for Positive Development Among African American Youth. *Child Dev Perspect*. 2012;6(3):251-257. doi:10.1111/j.1750-8606.2011.00226.x.

263. Bialystok E, Craik FIM. Cognitive and Linguistic Processing in the Bilingual Mind. *Curr Dir Psychol Sci*. 2010;19(1):19-23. doi:10.1177/0963721409358571.

264. Kirmayer LJ, Dandeneau S, Marshall E, Phillips MK, Williamson KJ. Rethinking resilience from indigenous perspectives. *Can J Psychiatry*. 2011;56(2):84-91.

265. Hackett C, Furgal C, Angnatok D, et al. Going Off, Growing Strong: Building Resilience of Indigenous Youth. *Can J Community Ment Heal*. 2016;35(2):79-82. doi:10.7870/cjcmh-2016-028.

266. Sleijpen M, Boeije H, Kleber R, Mooren T. Between power and powerlessness: a meta-ethnography of sources of resilience in young refugees. *Ethn Health*. 2015; 21(2), p. 158-180. doi:10.1080/13557858.2015.1044946.

267. Ruiz-Casares M, Guzder J, Rousseau C, Kirmayer LJ. Cultural Roots of Well-Being and

Resilience in Child Mental Health. In: *Handbook of Child Well-Being*. ; 2014:2379-2407. doi:10.1007/978-90-481-9063-8_93.

268. Theron LC, Phasha N. Cultural Pathways to Resilience: Opportunities and Obstacles as Recalled by Black South African Students. In: Theron LC, Liebenberg L, Ungar M, eds. *Youth Resilience and Culture*. New York, NY: Springer; 2015:51-65. doi:10.1007/978-94-017-9415-2_4.

269. Eggerman M, Panter-Brick C. Suffering, hope, and entrapment: Resilience and cultural values in Afghanistan. *Soc Sci Med*. 2010;71(1):71-83. doi:10.1016/j.socscimed.2010.03.023.

270. Campbell-Sills L, Stein MB. Psychometric Analysis and Refinement of the Connor–Davidson Resilience Scale (CD-RISC): Validation of a 10-Item Measure of Resilience. *J Trauma Stress*. 2007;20(6):1019-1028. doi:10.1002/jts.

271. Singh K, Yu XN. Psychometric evaluation of the Connor-Davidson Resilience Scale (CD-RISC) in a sample of Indian students. *J Psychol*. 2010;1(1):23-30. doi:10.1080/15305050902733471.

272. Burns RA, Anstey KJ. The Connor-Davidson Resilience Scale (CD-RISC): Testing the invariance of a uni-dimensional resilience measure that is independent of positive and negative affect. *Pers Individ Dif*. 2010;48(5):527-531. doi:10.1016/j.paid.2009.11.026.

273. Jung YE, Min JA, Shin AY, et al. The Korean version of the connor-davidson resilience scale: An extended validation. *Stress Heal*. 2012;28(4):319-326. doi:10.1002/smi.1436.

274. Karairmak Ö. Establishing the psychometric qualities of the Connor-Davidson Resilience Scale (CD-RISC) using exploratory and confirmatory factor analysis in a trauma survivor sample. *Psychiatry Res*. 2010;179(3):350-356. doi:10.1016/j.psychres.2009.09.012.

275. Asante KO, Meyer-Weitz A. Measuring resilience among homeless youth: psychometric assessment of the Connor-Davidson Resilience Scale in Ghana. *J Psychol Africa*. 2014;24(4):321-326. doi:10.1080/14330237.2014.980620.

276. Yu XN, Lau JTF, Mak WWS, Zhang J, Lui WWS. Factor structure and psychometric properties of the connor-davidson resilience scale among chinese adolescents. *Compr Psychiatry*. 2011;52(2):218-224. doi:10.1016/j.comppsych.2010.05.010.

277. Solano JPC, Bracher ESB, Faisal-Cury A, et al. Factor structure and psychometric properties of the Dispositional Resilience Scale among Brazilian adult patients. *Arq Neuropsiquiatr*. 2016;74(12):1014-1020. doi:10.1590/0004-282x20160148.

278. Arias González VB, Crespo Sierra MT, Arias Martínez B, Martínez-Molina A, Ponce FP. An in-depth psychometric analysis of the Connor-Davidson Resilience Scale: calibration with Rasch-Andrich model. *Health Qual Life Outcomes*. 2015;13(1):154. doi:10.1186/s12955-015-0345-y.

279. Derakhshanrad SA, Piven E, Rassafiani M, Hosseini SA. Standardization of Connor-Davidson Resilience Scale in Iranian subjects with Cerebrovascular Accident. 2014;1:73-77.

280. Ni MY, Li TK, Yu NX, et al. Normative data and psychometric properties of the Connor-Davidson Resilience Scale (CD-RISC) and the abbreviated version (CD-RISC2) among the general population in Hong Kong. *Qual Life Res*. 2016;25(1):111-116. doi:10.1007/s11136-015-1072-x.

281. Murtaza G, Sultan S, Ahmed F, Mustafa G. Exploring Construct Validity of Resilience Scale in Pakistani Youth. *J Appl Environ Biol Sci*. 2016;6(2S):79-83.

282. Goins RT, Gregg JJ, Fiske A. Psychometric properties of the Connor-Davidson resilience scale with older American Indians: The native elder care study. *Res Aging*. 2012;35(2):123-143. doi:10.1177/0164027511431989.

283. Aloba O, Ajao O. Exploration of the Psychometric Properties and Correlates of the 10 item Connor-Davidson Resilience Scale among Family Caregivers of Nigerian Patients with Psychiatric Disorder. *Int J Ment Heal Psychiatry*. 2016;2(3). doi:10.4172/2471-4372.1000124.

284. Coates EE, Phares V, Dedrick RF. Psychometric properties of the Connor-Davidson Resilience Scale 10 among low-income, African American men. *Psychol Assess*. 2013;25(4):1349-1354. doi:10.1037/a0033434.

285. Wang L, Shi Z, Zhang Y, Zhang Z. Psychometric properties of the 10-item Connor-Davidson Resilience Scale in Chinese earthquake victims. *Psychiatry Clin Neurosci*. 2010;64(5):499-504. doi:10.1111/j.1440-1819.2010.02130.x.

286. Duong C, Hurst CP. Reliability and validity of the Khmer version of the 10-item Connor-Davidson Resilience Scale (Kh-CD-RISC10) in Cambodian adolescents. *BMC Res Notes*. 2016;9(1):297. doi:10.1186/s13104-016-2099-y.

287. Notario-Pacheco B, Solera-Martínez M, Serrano-Parra MD, Bartolomé-Gutiérrez R, García-Campayo J, Martínez-Vizcaíno V. Reliability and validity of the Spanish version of the 10-item Connor-Davidson Resilience Scale (10-item CD-RISC) in young adults. *Health Qual Life Outcomes*. 2011;9(1):63. doi:10.1186/1477-7525-9-63.

288. Wagnild GM, Young HM. Development and psychometric evaluation of the Resilience Scale. *J Nurs Meas*. 1993;1(2):165-178.

289. Wagnild GM. *The Resilience Scale User's Guide for the US English Version of the Resilience Scale and the 14-Item Resilience Scale (RS-14).* Worden, MT; 2009.

290. Wagnild GM, Collins JA. Assessing Resilience. *J Psychosoc Nurs Ment Health Serv*. 2009;47(12):28-33. doi:10.3928/02793695-20091103-01.

291. Girtler N, Casari EF, Brugnolo A, et al. Italian validation of the Wagnild and Young Resilience Scale: A perspective to rheumatic diseases. *Clin Exp Rheumatol*. 2010;28(5):669-678.

292. Girtler N, De Carli F, Accardo J, et al. Psychometric properties of the Italian version of resilience scale in adults and elderly healthy subjects. *J Aging Res Clin Pract*. 2014;3(2) 82-88.

293. Lei M, Li C, Xiao X, Qiu J, Dai Y, Zhang Q. Evaluation of the psychometric properties of the Chinese version of the Resilience Scale in Wenchuan earthquake survivors. *Compr Psychiatry*. 2012;53(5):616-622. doi:10.1016/j.comppsych.2011.08.007.

294. Nishi D, Uehara R, Kondo M, Matsuoka Y. Reliability and validity of the Japanese version of the Resilience Scale and its short version. *BMC Res Notes*. 2010;3(1):310. doi:10.1186/1756-0500-3-310.

295. Ruiz-Párraga GT, López-Martínez AE, Gómez-Pérez L. Factor structure and psychometric properties of the resilience scale in a Spanish chronic musculoskeletal pain sample. *J Pain*. 2012;13(11):1090-1098. doi:10.1016/j.jpain.2012.08.005.

296. Losoi H, Turunen S, Wäljas M, et al. Psychometric Properties of the Finnish Version of the Resilience Scale and its Short Version. *Psychol Community Heal*. 2013;2(1):1. doi:10.5964/pch.v2i1.40.

297. Oladipo S, Idemudia E. Reliability and validity testing of Wagnild and Young 's Resilience Scale in a sample of Nigerian youth. *J Psychol*. 2015;6(1):57-65.

298. Las Hayas C, Calvete E, Gomez del Barrio A, Beato L, Munoz P, Padierna JA. Resilience Scale-25 Spanish version: Validation and assessment in eating disorders. *Eat Behav*. 2014;15(3):460-463. doi:10.1016/j.eatbeh.2014.06.010.

299. Resnick BA, Inguito PL. The Resilience Scale: Psychometric Properties and Clinical Applicability in Older Adults. *Arch Psychiatr Nurs*. 2011;25(1):11-20. doi:10.1016/j.apnu.2010.05.001.

300. Damásio BF, Borsa JC, Silva JP da. 14-Item Resilience Scale (RS-14): Psychometric Properties of the Brazilian Version. *J Nurs Meas*. 2011;19(3):131-145. doi:10.1891/1061-3749.19.3.131.

301. Cénat JM, Derivois D, Hébert M, Eid P, Mouchenik Y. Psychometric properties of the Haitian Creole version of the Resilience Scale with a sample of adult survivors of the 2010 earthquake. *Compr Psychiatry*. 2015;63:96-104. doi:10.1016/j.comppsych.2015.09.002.

302. Callegari C, Bertù L, Lucano M, Ielmini M, Braggio E, Vender S. Reliability and validity of the Italian version of the 14-item resilience scale. *Psychol Res Behav Manag*. 2016;9:4-7. doi:10.2147/PRBM.S115657.

303. Tian J, Hong JS. Validation of the Chinese version of the Resilience Scale and its cutoff score for detecting low resilience in Chinese cancer patients. *Support Care Cancer*. 2013;21(5):1497-1502. doi:10.1007/s00520-012-1699-x.

304. Abiola T, Udofia O. Psychometric assessment of the Wagnild and Young's resilience scale in Kano, Nigeria. *BMC Res Notes*. 2011;4(1):509. doi:10.1186/1756-0500-4-509.

305. Oliveira A, Matos AP, Pinheiro M do R, Oliveira S. Confirmatory Factor Analysis of the Resilience Scale Short form in a Portuguese Adolescent Sample. *Procedia - Soc Behav Sci*. 2015;165(165):260-266. doi:http://dx.doi.org/10.1016/j.sbspro.2014.12.630.

306. Cénat JM, Derivois D. Psychometric properties of the Creole Haitian version of the Resilience Scale amongst child and adolescent survivors of the 2010 earthquake. *Compr Psychiatry*. 2014;55(2):388-395. doi:10.1016/j.comppsych.2013.09.008.

307. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med*. 2008;15(3):194-200. doi:10.1080/10705500802222972.

308. Tansey TN, Kaya C, Moser E, Eagle D, Dutta A, Chan F. Psychometric Validation of the Brief Resilience Scale in a Sample of Vocational Rehabilitation Consumers. *Rehabil Couns Bull*. 2015;59(2):108-111. doi:10.1177/0034355215573539.

309. Amat S, Subhan M, Jaafar WMW, Mahmud Z, Johari KSK. Evaluation and psychometric status of the brief resilience scale in a sample of Malaysian international students. *Asian Soc Sci*. 2014;10(18):240-245. doi:10.5539/ass.v10n18p240.

310. Macovei CM. the Brief Resilience Scale – a Romanian-Language Adaptation. *Agora Psycho-Pragmatica*. 2015;9(1):70. https://login.ezproxy.net.ucf.edu/login?auth=shibb&url=http://search.ebscohost.com/login.aspx?direct=true&db=edb&AN=102382819&site=eds-live&scope=site.

311. Rodríguez-Rey R, Alonso-Tapia J, Hernansaiz-Garrido H. Reliability and validity of the Brief Resilience Scale (BRS) Spanish Version. *Psychol Assess*. 2016;28(5):e101-e110. doi:10.1037/pas0000191.

312. Friborg O, Hjemdal O, Rosenvinge JH, Martinussen M. A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? *Int J Methods Psychiatr Res*. 2003;12(2):65-76. doi:10.1002/mpr.143.

313. Hjemdal O, Friborg O, Stiles TC, Martinussen M, Rosenvinge JH. A New Scale for Adolescent Resilience: Grasping the Central Protective Resources Behind Healthy Development. *Meas Eval Couns Dev*. 2006;39(July):84-97.

314. Hjemdal O, Friborg O, Braun S, Kempenaers C, Linkowski P, Fossion P. The Resilience Scale for Adults: Construct Validity and Measurement in a Belgian Sample. *Int J Test*. 2011;11(1):53-70. doi:10.1080/15305058.2010.508570.

315. Hjemdal O, Roazzi A, Dias M, Friborg O. The cross-cultural validity of the Resilience Scale for Adults: a comparison between Norway and Brazil. *BMC Psychol*. 2015;3(1):18. doi:10.1186/s40359-015-0076-1.

316. Bonfiglio NS, Renati R, Hjemdal O, Friborg O. The Resilience Scale for Adults in Italy: A Validation Study Comparing Clinical Substance Abusers With a Nonclinical Sample. *Psychol Addict Behav*. 2016;30(4):509-515. doi:10.1037/adb0000176.

317. Jowkar B, Friborg O, Hjemdal O. Cross-cultural validation of the Resilience Scale for Adults (RSA) in Iran. *Scand J Psychol*. 2010;51(5):418-425. doi:10.1111/j.1467-9450.2009.00794.x.

318. Hilbig J, Viliuniene R, Friborg O, Pakalniskiene V, Danileviciute V. Resilience in a reborn nation: Validation of the Lithuanian Resilience Scale for Adults (RSA). *Compr Psychiatry*. 2015;60:126-133. doi:10.1016/j.comppsych.2015.02.003.

319. Basim HN, Cetin F. The reliability and validity of the resilience scale for adults-Turkish version. *Turk Psikiyatr Derg*. 2011;22(2):104-114.

320. Kelly Y, Fitzgerald A, Dooley B. Validation of the Resilience Scale for Adolescents (READ) in Ireland: a multi- group analysis. *Int J Methods Psychiatr Res*. 2016. doi:10.1002/mpr.1506.

321. Von Soest T, Mossige S, Stefansen K, Hjemdal O. A validation study of the resilience scale for adolescents (READ). *J Psychopathol Behav Assess*. 2010;32(2):215-225. doi:10.1007/s10862-009-9149-x.

322. Ruvalcaba-Romero NA, Gallegos-Guajardo J, Villegas-Guinea D. Validation of the Resilience Scale for Adolescents (Read) in Mexico. *J Behav Heal Soc Issues*. 2015;6(2):21-

34. doi:10.1002/mpr.1506.

323. Stratta P, Riccardi I, Cosimo A Di, et al. A validation study of the Italian version of the resilience scale for adolescents (READ). *J Community Psychol*. 2012;40(4):479-485. doi:10.1002/jcop.

324. Liebenberg L, Ungar M, Van De Vijver F. Validation of the child and youth resilience measure-28 (CYRM-28) among Canadian youth. *Res Soc Work Pract*. 2012;22(2):219-226. doi:10.1177/1049731511428619.

325. Liebenberg L, Ungar M, LeBlanc J. The CYRM-12: A brief measure of resilience. *Can J Public Heal*. 2013;104(2):131-136. doi:10.17269/cjph.104.3657.

326. Liebenberg L, Moore JC. A Social Ecological Measure of Resilience for Adults: The RRC-ARM. *Soc Indic Res*. 2016. doi:10.1007/s11205-016-1523-y.

327. Arslan G. Psychometric Properties of Adult Resilience Measure (ARM): The Study of Reliability and Validity. *Ege Eğitim Derg*. 2015;16(2):344-357.

328. Daigneault I, Dion J, Hébert M, McDuff P, Collin-Vézina D. Psychometric properties of the Child and Youth Resilience Measure (CYRM-28) among samples of French Canadian youth. *Child Abuse Negl*. 2013;37(2-3):160-171. doi:10.1016/j.chiabu.2012.06.004.

329. Kazerooni Zand B, Liebenberg L, Sepehri Shamloo Z. Validation of the Factorial Structure of the Child and Youth Resilience Measure for Use with Iranian Youth. *Child Indic Res*. doi:10.1007/s12187-016-9412-0.

330. Mu GM, Hu Y. Validation of the Chinese Version of the 12-Item Child and Youth Resilience Measure. *Child Youth Serv Rev*. 2016;70(November 2016):332-339. doi:10.1016/j.childyouth.2016.09.037.

331. Goldstein S, Brooks R, DeVries M. Translating Resilience Theory for Application with Children and Adolescents By Parents, Teachers, and Mental Health Professionals. In: *Resilience in Children, Adolescents, and Adults*. ; 2013:73-90. doi:10.1007/978-1-4614-4939-3_6.

332. Bombay A, Matheson K, Anisman H. The intergenerational effects of Indian Residential Schools: Implications for the concept of historical trauma. *Transcult Psychiatry*. 2014;51(3):320-338. doi:10.1177/1363461513503380.

333. Mohatt NV, Thompson AB, Thai ND, Tebes JK. Historical trauma as public narrative: A conceptual review of how history impacts present-day health. 2014. doi:10.1016/j.socscimed.2014.01.043.

334. Barber BK. Contrasting portraits of war: Youths' varied experiences with political violence in Bosnia and Palestine. *Int J Behav Dev*. 2008;32(4):298-309. doi:10.1177/0165025408090972.

335. Frankl VE. *Man's Search for Meaning. An Introduction to Logotherapy*. Boston, MA: Beacon Press

336. Folkman S. Stress, coping, and hope. *Psychooncology*. 2010;19(9):901-908. doi:10.1002/pon.1836.

337. Vygotsky LS. *The Vygotsky Reader*. (van der Veer R, Valsiner J, eds.). Cambridge, MA:

Blackwell Publishing Ltd; 1994.

338. Park CL. Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychol Bull*. 2010;136(2):257-301. doi:10.1037/a0018301.

339. Theron L, Theron A. Meaning-making and resilience: case studies of a multifaceted process. *J Psychol Africa*. 2014;24(1):37-41. doi:10.1080/14330237.2014.904099.

340. Ungar M. Resilience, trauma, context, and culture. *Trauma Violence Abuse*. 2013;14(3):255-266. doi:10.1177/1524838013487805.

341. Bottrell D. Youth of Young People ' s Networks. *Youth Soc*. 2009;40(4):476-501. doi:10.1177/0044118X08327518.

342. Johnson CM. African-American teen girls grieve the loss of friends to homicide: meaning making and resilience. *Omega*. 2010;61(2):121-143. doi:10.2190/OM.61.2.c.

343. Dupree D, Spencer TR, Spencer MB. Stigma, stereotypes and resilience identities: The relationship between identity processes and resilience processes among Black American adolescents. In: *Youth Resilience and Culture: Commonalities and Complexities*. Vol 11. ; 2015:117-129. doi:10.1007/978-94-017-9415-2_9.

344. Gone JP. Redressing First Nations historical trauma: theorizing mechanisms for indigenous culture as mental health treatment. *Transcult Psychiatry*. 2013;50(5):683-706. doi:10.1177/1363461513487669.

345. Kirmayer LJ. The health and well-being of indigenous youth. *Acta Paediatr*. 2015;104(1):2-4. doi:10.1111/apa.12843.

346. Sanders J, Munford R, Liebenberg L, Ungar M. Multiple Service Use: The impact of consistency in service quality for vulnerable youth. *Child Abus Negl*. 2014;38(4):687-697. doi:10.1016/j.chiabu.2013.10.024.

347. Mancini AD, Bonanno GA. Resilience in the face of potential trauma: Clinical practices and illustrations. *J Clin Psychol*. 2006;62(8):971-985. doi:10.1002/jclp.20283.

348. Davis MC, Luecken L, Lemery-Chalfant K. Resilience in common life: Introduction to the special issue. *J Pers*. 2009;77(6):1637-1644. doi:10.1111/j.1467-6494.2009.00595.x.

349. Ungar M. The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *Am J Orthopsychiatry*. 2011;81(1):1-17. doi:10.1111/j.1939-0025.2010.01067.x.

350. Walls ML, Whitbeck L, Armenta B. A Cautionary Tale: Examining the Interplay of Culturally Specific Risk and Resilience Factors in Indigenous Communities. *Clin Psychol Sci*. 2016;4(4):732-743. doi:10.1177/2167702616645795.

351. Bottrell D. Qualitative Social Work Understanding "Marginal" Perspectives Towards a Social Theory of Resilience. *New Delhi Singapore*. 2016;8(3):321-339. doi:10.1177/1473325009337840.

352. Tedeshi RG, Calhoun LG. *Posttraumatic Growth: Conceptual Foundation and Empirical Evidence*. Philadelphia, PA: Lawrence Erlbaum Associates; 2004.

353. Liebenberg L, Hutt-MacLeod D. Aboriginal ccommunity development approaches in

response to neoliberal policy: The example of Eskasoni Mental Health Services. In: Dolan P, Frost N, eds. *The Handbook of Global Child Welfare*. London: Routledge; 2017.

354. Carter B, Bradley SK, Richardson R, Sanders R, Sutton CJ. Appreciating What Works: Discovering and Dreaming Alongside People Developing Resilient Services for Young People Requiring Mental Health Services. *Issues Ment Health Nurs*. 2006;27(5):575-594. doi:10.1080/01612840600600032.

355. Munford R, Sanders J. Components of effective social work practice in mental health for young people who are users of multiple services. *Soc Work Ment Health*. 2015;13(5):415-438. doi:10.1080/15332985.2014.959239.

356. Brittain M, Blackstock C. *First Nations Child Poverty: A Literature Review and Analysis*.; 2015.

357. Guerin B. A Framework for Decolonization Interventions: Broadening the Focus for Improving the Health and Wellbeing of Indigenous Communities. *Pimatisiwin A J Aborig Indig Community Heal*. 2011;8(3):61-83. http://proxy.lib.sfu.ca/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=fph&AN=71943745&site=ehost-live&scope=cite.

358. Kirmayer L, Simpson C, Cargo M. Indigenous Populations Healing traditions: culture, community and mental health promotion with Canadian Aboriginal peoples. *Australas Psychiatry*. 2003;11:S15. doi:10.1046/j.1038-5282.2003.02010.x.

359. Public Health Agency of Canada's Innovation Strategy https://*www.canada.ca/en/public-health/services/innovation-strategy.html*

APPENDIX A: INITIAL EXPLORATORY REVIEW

Prior to this knowledge synthesis, PHAC's Mental Health Promotion Unit conducted an initial review of 28 documents; and, consulted with 9 national experts on resilience in order to develop a preliminary understanding of possible common and consensual elements (indicators) of resilience. From these activities, the following findings emerged.

Initial Review of 28 Documents

Almost all the 28 articles reviewed (n = 24) defined resilience as thriving or bouncing back in the face of adversity, underscoring the relationship between the concept of resilience and risk. Half (n = 14) described resilience as comprising both individual characteristics or factors and external factors to cope with challenges and regain mental health. Just under half (n = 11) described these resilience characteristics as protective factors that moderate and/or mediate negative mental health outcomes in the face of risk factors. Building on this interaction, six of the articles explained resilience as a process or as a *dynamic* process. Others (n = 5) explained resilience as multidimensional (i.e. operating as a predictor, factor, trait, process or outcome) occurring in the face of adversity (as explained by 4 of the 5 papers). Finally, three argued that resilience varies throughout the life-course, while a further three argued variance across contexts.

Synthesis of Consultations with Nine National Experts on Resilience

Research Question: Are there common/consensual elements within the diversity of existing definitions (and measurements) on resilience from which we may identify or create a set of resilience indicators?

Objective: To consult among Canadian experts as to their understanding of what may be common/consensual elements within the diversity of existing definitions and measurements of resilience.

Methodology: An external consultation was conducted with nine (9) notable *Resilience Experts* from several key organizations/networks and academic institutions across Canada. They included: the Resilience Research Centre (Dalhousie University); Resiliency Initiatives (Calgary, Alberta); Reaching IN…Reaching Out (RIRO) (Toronto, Ontario); the B.C. Centre of Excellence for Women's Health (BCCEWH) (Vancouver, B.C.); the University of Toronto; University of Lethbridge; and, McMaster University, Lakehead University and McGill University. The interviews were based on the following questions:

1. How do you define resilience? Do you use an operational definition of resilience (internal and external resources)?
2. In which of the following areas does your work focus on resilience? e.g. Research/Surveillance, Community Programs and Evaluation, School Programs, Policy.

3. What population age group are you targeting? Children, Adolescents, Adults, Seniors
4. What do you aim to accomplish? e.g. current and long-term research objectives? What resilience measurement instrument/scale do you use?
5. What would you say are your most important findings in the area of resilience, from recent years? i.e. within your work and/or that of your colleagues, are there any pressing issues regarding resilience? e.g. more research to develop valid resiliency measures for use with different populations, etc.
6. From your many years of research on resilience, what would you say are common, or consensual, elements among all of the existing, varying definitions of resilience? In your opinion, would it be useful to create a common set of consensual resilience indicators? e.g. to facilitate comparisons among various geographic regions or populations? validation? …or to support a common effort towards policy and program development on resilience within various domains of intervention?
7. Are there any additional points that you would like to make or suggestions for additional questions to help us draw more information from other experts?
8. Would you have additional names of experts/colleagues to recommend whom we may also wish to consult?

Key Findings:

N.B.: At the broad, conceptual level, *consensual elements* of resilience were expressed as either *external and/or internal factors*. Few current, key "Resilience Experts" focus on older persons. The majority concentrates on the resilience of *children and adolescents* with an understanding that findings may generally apply to promote the resilience of *adults*.

There was some consensus that resilience is, first and foremost, an "innate capacity" that all individuals have or are able to develop; and, that it involves the potential to "*adapt", "bounce back"*, and, possibly *"transform*" in the face of adversity. Additionally, at the broad, conceptual level, resilience is considered to comprise either external and/or internal factors. Some experts, who focused on the needs of specific groups, their heterogeneity and ever-changing contexts, felt strongly that resilience was more dependent upon external factors than on individuals' internal strengths and assets. However, an important, consensual element linked to both internal and external factors included the understanding of resilience as being *"dynamic"* (versus static). For example, individuals are understood as constantly striving to achieve a balance between minimizing the impact of risks, adversity or threats that compromise their health and sense of well-being (be they minor, major or traumatic), by maximizing appropriate protective factors as they *navigate/ negotiate* for meaningful, external resources.

The *"dynamic nature"* of resilience is also evident in the cumulative result of individuals' *growth* and *experiences* from exploration by trial and error, and adaptation along the life course, and evident as well in the ecological character of resilience, whereby individuals who seek to become more resilient must, invariably, *interact* with various *psychological, social*, *environmental* and *biological factors* (e.g. family, school, workplace, outdoor/indoor built environments) and other

social, health, cultural and environmental supports (i.e. programs and services). At the more specific, conceptual level, consensual elements of resilience were also shared between internal and/or external, factors e.g. personal identify or self-concept; self-esteem; self-control; sense of coherence; self-compassion; self-efficacy; empowerment; sense of connection (with one's history, culture, land, etc.); cultural/social sensitivity; sense of belonging; relationships; family supports; community cohesiveness; and the role of the environment.

With respect to recommended measurements of resilience, most experts advised to proceed with caution due to the fact that many tools are in the initial stages of development and tend to be limited in scope. Also, despite the reliability of certain measurements of individual or collective assets, these do not depict the entire picture about resilience. Notwithstanding, Michael Ungar's Children and Youth Resilience Measure (CYRM28) and, the Connors-Davidson Scale (CD-RISC) were the most highly recommended instruments. Despite a number of experts' cautioning on the importance of remaining inclusive, there was a strong consensus as to the necessity of developing a set of consensual resilience indicators in support of a common effort towards improving mental health capacity in order to inform mental health surveys, surveillance, research, policy and interventions and to allow for comparisons.

APPENDIX B: FINDINGS FROM INITIAL EXPLORATORY REVIEW OF THE LITERATURE

Commonalities among Definitions of Resilience: Sources from External Experts Consulted

Article Title and Author(s)	Definition elements						
	Thrive and bounce back in the face of adversity	(Dynamic) Process	Uses individual & external factors/resources (to regain mental health)	Provides/uses protective and risk factors	Defined as multidimensional (i.e. as a predictor, factor, trait, process, outcome)	Defined in different contexts (i.e. individuals, communities, organizations, societies, cultures)	Varies throughout the life course
Historical Trauma, Race-based Trauma and Resilience of Indigenous Peoples: A Literature Review (Fast & Collin-Vezina, 2010)	X		X				
Resiliency Within (Government of Nunavut, 2016)				X			
Measuring Resilience as an Education Outcome (Patry & Ford, 2016)	X	X	X	X	X		X
Resilience in a Life course Perspective: Reflection on Research and Life (Johnson, 2015)							X
Resilience Definitions, Theory and Challenges: Interdisciplinary Perspectives (Southwick, Bonanno, Masten, Panter-Brick & Yehuda, 2014)					X	X	
A Methodological Review of Resilience Measurement Scales (Windle, Bennett & Noyes, 2011)	X	X	X				X
Ordinary Magic: Lessons from Research on Resilience in Human		X	X				

Development (Masten, 2010)							
Building Resilience in Young Children: Booklet for parents of children from birth to six years (Best Start Resource Centre, 2012)	X						
The CYRM-12: A Brief Measure of Resilience (Liebenberg, Ungar & LeBlanc, 2013)	X		X				
Research Brief: Resilience, Mental Health and Family Violence (MacMillan & Wathen, 2014)	X	X		X			
Protective Factors as a Path to Better Youth Mental Health (New Brunswick Health Council, 2016)	X			X			
From Extraordinary Invulnerability to Ordinary Magic: A Literature Review of Resilience (Winders, 2014)	X						
A Review of Literature of Resilience and Implications for Further Educational Research (Santos, 2012)	X			X			
Child/Youth Resiliency: Assessing Developmental Strengths (Resiliency Initiatives, 2012)	X						
Community Resiliency: Emerging Theoretical Insights (Kulig, Edge, Townshend, Lightfoot & Reimer, 2013)	X					X	
Facing a wildfire: What did we learn about individual and community resilience? (Kulig & Botey, 2016)	X			X	X	X	
National Strategy for Disaster Resilience (Council of Australian Governments, 2011)	X		X		X		
Distinguishing Differences in Pathways to Resilience Among Canadian Youth (Ungar, Brown, Liebenberg, Cheung & Levine, 2008)	X		X				
Resilience across Cultures (Ungar, 2008)	X		X	X	X		

Psychological Resilience (Wikipedia, 2016)	X	X					
Embracing a Strengths-Based Perspective and Practice in Education (Resiliency Initiatives, 2011)	X		X	X			
Child Welfare: Connecting Research, Policy and Practice (Kufeldt & McKenzie, 2011)	X		X	X			
A Psychometric Assessment of the Self-Reported Youth Resiliency: Assessing Developmental Strengths Questionnaire (Donnon, Hammond (2007)	X		X				
A Strength-Based Model of Assessment and Evaluation (Hammond, 2008)	X		X				
Determinants of Resilience in High Risk Groups (Stewart, 2014)	X	X	X				
Youth Resiliency: Assessing Students' Capacity for Success at School (Donnon, Hammond & Charles, 2003)	X						
Understanding How Resiliency Development Influences Adolescent Bullying and Victimization (Donnon, 2010)	X		X	X			
Understanding the Relationship Between Resiliency and Bullying in Adolescence: An Assessment of Youth Resiliency from Five Urban Junior High Schools (Donnon & Hammond, 2007)	X						

***Note:** The following two articles were reviewed but not included in the chart because they did not provide a definition of Resilience:

1. Kordich Hall D. Compendium of Selected Resilience and Related Measures for Children and Youth. The Child and Family Partnership. 2010.

2. Mushquash C. In with the Old, In with the New: Honouring Indigenous Strengths

- 24/28 defined resilience as thriving/bouncing back in the face of adversity
- 14/28 described resilience as using individual and external factors resources to cope and regain mental health
- 11/28 described resilience as providing/using protective and risk factors

- 6/28 defined resilience as a (dynamic) process
- 5/28 noted that resilience can be defined as multidimensional (i.e. as a predictor, factor, trait, process or outcome)
- 3/28 described resilience as varying throughout the life-course
- 3/28 noted that resilience can be defined in different contexts (i.e. individuals, communities, organizations, societies, cultures)

Article links:

- Fast E, Collin-Vezina D. Historical Trauma, Race-based Trauma and Resilience of Indigenous Peoples: A Literature Review. *First Peoples Child & Family Review.* 2010;5(1):126-136.

- Government of Nunavut. Resiliency Within: An Action Plan for Suicide Prevention in Nunavut 2016/2017. Published 2016. http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjXxueYvJTPAhWEeD4KHSc8BPIQFggnMAE&url=http%3A%2F%2Fwww.gov.nu.ca%2Fsites%2Fdefault%2Ffiles%2Fresiliency_within_eng.pdf&usg=AFQjCNFSxR1HfxdnYo0Rh0KSDEBh4JyzPA

- Patry D, Ford R. *Measuring Resilience as an Education Outcome*. Toronto: Higher Education Quality Council of Ontario. http://www.heqco.ca/SiteCollectionDocuments/HEQCO%20Formatted_Resilience.pdf

- Johnson K. Resilience in a Life Course Perspective: Reflections on Research and Life. MME Lecture. American Public Health Association (APHA). Chicago. Published 2015. http://www.cahmi.org/wp-content/uploads/2015/01/KJohnson_The-Concept-of-Resilience-and-the-Life-Course-Perspective__final.pdf

- Southwick SM, Bonanno GA, Masten AS, Panter-Brick C, Yehuda R. Resilience Definitions, Theory and Challenges: Interdisciplinary Perspectives. *European Journal of Pschotraumatology*. 2014(5). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4185134/pdf/EJPT-5-25338.pdf

- Windle G, Bennett KM, Noyes J. A Methodological Review of Resilience Measurement Scales. *Health and Quality of Life Outcomes 2011*. 9(8); 2011. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3042897/pdf/1477-7525-9-8.pdf

- Masten AS. Ordinary Magic: Lessons from research on resilience in human development. *Education Canada*. 2009;49:28-32.

- Best Start Resource Centre. Building Resilience in Young Children: Booklet for parents of children from birth to six years. Published 2012. https://www.beststart.org/resources/hlthy_chld_dev/pdf/BSRC_Resilience_English_fnl.pdf

- Liebenberg L, Ungar M, LeBlanc JC. The CYRM-12: A Brief Measure of Resilience. *Canadian Journal of Public Health.* 2013;104(2):e131-e135. http://journal.cpha.ca/index.php/cjph/article/viewFile/3657/2766

- MacMillan H, Wathen CN. Research Brief: Resilience, Mental Health and Family Violence. *PreVAil – Preventing Violence Across the Lifespan Research Network*. March 2014.

- New Brunswick Health Council. Protective Factors as a Path to Better Youth Mental Health. Published 2016. http://www.nbhc.ca/sites/default/files/brief__protective_factors_as_a_path_to_better_youth_mental_health.pdf

- Winders SJ. From extraordinary invulnerability to ordinary magic: A literature review of resilience. *Journal of European Psychology Students*. 2014;5(1):3-9. http://jeps.efpsa.org/articles/10.5334/jeps.bk/

- Santos RS. Why Resilience? A Review of Literature of Resilience and Implications for Further Educational Research. Claremont Graduate University & San Diego State University. 2012. https://go.sdsu.edu/education/doc/files/01370-ResiliencyLiteratureReview(SDSU).pdf

- Resiliency Initiatives. Child/Youth Resiliency: Assessing Developmental Strengths. 2012 https://www.aoclife.org/subsites/team-coaches/files/GuideandAdministrationManual.pdf

- Kulig JC, Edge DS, Townshend I, Lightfoot N, Reimer W. Community Resiliency: Emerging Theoretical Insights. *Journal of Community Psychology*. 2013;41(6):758-775. http://onlinelibrary.wiley.com/doi/10.1002/jcop.21569/full

- Kulig JC, Botey AP. Facing a Wildfire:What did we learn about individual and community resilience?. *Natural Hazards*. 2016;82(3):1919-1929. https://link.springer.com/article/10.1007/s11069-016-2277-1

- Council of Australian Governments. National Strategy for Disaster Resilience: Building the resilience of our nation to disasters. Published 2011. https://www.ag.gov.au/EmergencyManagement/Documents/NationalStrategyforDisasterResilience.PDF

- Ungar M, Brown M, Liebengerg L, Cheung M, Levine K. Distinguishing Differences in Pathways to Resilience Among Canadian Youth. 2008;27(1):1-13. http://www.cjcmh.com/doi/pdf/10.7870/cjcmh-2008-0001

- Ungar M. Resilience across Cultures. *British Journal of Social Work.* 2008;38:218-235 https://academic.oup.com/bjsw/article/38/2/218/1684596

- Psychological Resilience. 2016 (Wikipedia) https://en.wikipedia.org/wiki/Psychological_resilience

- Resiliency Initiatives. Embracing a Strengths-Based Perspective and Practice in Education. Published 2011. http://www.ayscbc.org/Strengths-Based%20School%20Culture%20and%20Practice.pdf

- Child Welfare: Connecting Research, Policy and Practice. In: Kufeldt K, McKenzie B. eds. Wilfrid University Press. 2011.

- Donnon T, Hammond W. A Psychometric Assessment of the Self-Reported Youth Resiliency: Assessing Developmental Strengths Questionnaire. *Psychological Reports.* 2007*;*100(3) :963-978. http://journals.sagepub.com/doi/pdf/10.2466/pr0.100.3.963-978.

- Hammond, W. A Strength-Based Model of Assessment and Evaluation. Resiliency Canada. 2008. http://www.middlechildhoodmatters.ca/wp-content/uploads/2012/11/Resiliency-Summary-Paper.pdf

- Stewart D. Determinants of Resilience in High Risk Groups, 2014. http://prevailresearch.ca/resources/

- Donnon, T. Hammond W, Charles G. Youth Resiliency: Assessing Students' Capacity for Success at School. *Teaching and Learning*. Winter 2003. https://brock.scholarsportal.info/journals/teachingandlearning/home/article/view/109/132

- Donnon T Understanding How Resiliency Development Influences Adolescent Bullying and Victimization*. Canadian Journal of School Psychology*. 2010;25(1). http://cjs.sagepub.com/content/early/2009/11/19/0829573509345481

- Donnon, T, Hammond W. Understanding the Relationship Between Resiliency and Bullying in Adolescence: An Assessment of Youth Resiliency from Five Urban Junior High Schools. *Child and Adolescent Psychiatric Clinics of North America*. 2007;16(2):449-471. http://www.sciencedirect.com/science/article/pii/S1056499306001180