

A Conceptual and Theoretical Analysis of Resilience in the Context of Aging with Multiple Morbidityies

by

Katherine Leith Coatta

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Approval

Name: Katherine Leith Coatta
Degree: Master of Arts (Gerontology)
Title of Thesis: *A conceptual and theoretical analysis of resilience in the context of aging with multiple morbidities*
Examining Committee: **Chair: Dr. Barbara Mitchell**
Professor and Graduate Program Chair,
Department of Gerontology,
Simon Fraser University

Dr. Andrew Wister
Senior Supervisor
Professor,
Department of Gerontology,
Simon Fraser University

Dr. Scott Lear
Supervisor
Professor,
Faculty of Health Sciences,
Simon Fraser University

Dr. Nadine Schuurman
External Examiner
Professor,
Department of Geography,
Simon Fraser University

Date Defended/Approved: April 23, 2014

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Abstract

The ability to live and age well is a common goal across the lifespan. For older adults with multiple chronic conditions, this goal frequently poses a challenge. A central process by which individuals face these challenges, or adversities, and regain a sense of wellness in their lives is a complex, dynamic phenomenon termed resilience. Cultivating resilience is therefore important for those with multiple chronic conditions, since they face daily stressors and long-lasting adversity. However, the concept of resilience has not been well developed in relation to chronic adversity or aging, and although it is a well-used term, it remains a challenging concept for researchers to engage with. Therefore, this research project conducted a conceptual and theoretical review of resilience in the context of aging with multiple chronic conditions. In addition, a lifespan model of resilience was developed, and an agenda for future research was outlined.

Keywords: Resilience; aging; living well; multiple chronic conditions

*This project is dedicated to my grandparents,
each of whom inspired me to pursue my
Master's in Gerontology and have shown
resilience in their own unique ways.*

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List of Acronyms

AGS	American Geriatric Society
APA	American Psychological Association
CD-RISC	Connor Davidson Resilience Scale
CINAHL	Cumulative Index to Nursing and Allied Health
GAD	General Anxiety Disorder
GHQ-12	General Health Questionnaire
MBSR	Mindfulness-Based Stress Reduction
PTSD	Post-traumatic Stress Disorder
RAS	Resilience Appraisal Scale
SFU	Simon Fraser University
SOC	Selection Optimization and Compensation
WHO	World Health Organization

1. Introduction

In late adulthood there is an increased likelihood of being diagnosed with one or more chronic illnesses – conditions that are characterised by a slow progression and lengthy duration, with fluctuating symptoms and uncertain outcomes (Bury, 1982; Institute of Medicine, 2012). There is also an increase in the likelihood of facing multiple morbidity, which is the co-occurrence of 2 or more chronic illnesses. Multiple morbidity further compounds the effects of individual chronic conditions by increasing symptom burden and complexity. In recent years, the focus on multiple morbidity has increased, due to rising prevalence rates and the potential for synergistic effects across diseases (Trivedi et al., 2011).

The negative impacts of living with chronic illnesses include physical challenges, such as worsening health, pain, loss of function, and a potentially reduced life span, and psychological threats, such as feelings of isolation, loss of self-esteem, and alterations in social roles (Janicki-Deverts & Cohen, 2011). High prevalence rates of chronic conditions have additional impacts on a societal level, conferring longer hospital stays, increased use of health care resources, and decreased productivity (AGS Expert Panel, 2012). Since chronic conditions are long lasting and often not life-threatening, they are frequently the cause of late-life disability, defined as difficulty accomplishing desired activities in any domain due to health or physical challenges (Verbrugge & Jette, 1994).

In light of the challenges associated with multiple morbidity, and prior to commencing the current project, an annotated bibliography was compiled (Coatta & Wister, 2013) that included research indicating living well or “positive deviance” in the context of aging with multiple chronic conditions. This research indicated several key findings that subsequently influenced the direction of this project. Firstly, the annotated bibliography identified a subjective definition of health, supplied by older adults themselves, in which health was defined as the ability to “go and do meaningful things”. This definition contrasts well with the concept of disability, wherein the performance of socially defined roles and tasks is limited (Verbrugge & Jette, 1994).

Additionally, a primary theme found in the literature was the “well-being paradox”, a term that applied when life satisfaction was maintained in the face of objectively poor health (Windle et al., 2010). The well-being paradox indicates a gap between the expected (negative) outcomes of an adverse event, and the actual lived experiences of older adults. Evidence of the well-being paradox among older adults facing multiple chronic conditions was thought to indicate underlying processes of resilience. This provided the motivation to further study resilience as it relates to aging with multiple morbidity.

Resilience is generally defined as the ability of a complex system to demonstrate positive outcomes in the face of adversity (Ungar, 2011). In research involving children and adolescents resilience has been heralded as “ordinary magic” (Masten, 2001), meaning that there is capacity for resilience in all people, including those facing considerable daily challenges. This is encouraging for individuals with multiple chronic conditions, who are often dealing with conditions that fluctuate on a daily basis (Paterson, 2001). Resilience draws attention to the pathways to health and well-being, which are distinct from the causes and courses of psychopathology and disease (Zautra et al., 2010). This distinction encourages the exploration of strengths, protective processes, and resources associated with resilient outcomes, which can be used to create more effective interventive and preventive measures using resilience in late adulthood.

The exploration of positive pathways provides a richer, more complex investigation of the challenges and successes associated with aging with chronic conditions compared to analyzing the pathways to disease and disability alone. Furthermore, the AGS Expert Panel (2012) recommended the study and application of resilience to be a resource for a holistic, person-centred approach to caring for individuals with multiple morbidities. In particular, resilience can enhance the focus on abilities, goals and preferences of the individual, which would make care planning more consistent with older adults’ preference to define successful and healthy aging in terms of meaningful engagement (Coatta & Wister, 2013).

For individuals with multiple morbidities, there are both short term (acute) and long-term (chronic) struggles. This research will aim to identify the role of resilience in coping with the acute daily stressors and changes, as well as with the long-term

consequences of multiple diagnoses. The project will use the disablement process (Verbrugge & Jette, 1994) and older adults' definition of health to contextualize resilience within the experience of multiple morbidity and aging. The intention will be to create a clearer conceptualization that captures the multidimensionality of resilience and multifinality of developmental outcomes (Cicchetti et al., 2010; Greve & Staudinger, 2006).

This project will build upon previous conceptual analyses by Windle (2010) and Earvolino-Ramirez (2007), which addressed resilience across the lifespan, whereas the current work will focus on older adults more specifically, and include an analysis of multiple morbidity. This analysis will also provide greater attention to the theoretical influences on resilience compared to previous studies.

The three aims of this research project are as follows:

1) To critically review the conceptual and theoretical developments directly and indirectly related to resilience. Resilience as a concept has been criticized for being ambiguous and “seductively obscure” (Hazan, 2011), and is at risk of losing credibility due to a lack of conceptual clarity (Wild et al., 2013). While resilience has been used extensively in the literature, there remains a certain “murkiness” that prevents the full scope of the concept from being understood and applied (Windle, 2010). The purpose of this project is thus to critically analyze the concept of resilience by conducting a conceptual and theoretical analysis of resilience in older adulthood, with a focus on the experience of multiple morbidity.

2) To integrate selected conceptual and theoretical aspects into a resilience model applied to multiple morbidity and aging. The creation of a model will help to identify important questions that require further research, guide possible interventions, and provide a visual representation of the process.

3) To develop a research agenda based on the findings. The research agenda will be useful to other individuals interested in understanding the concept of resilience, and will highlight gaps in the current literature. An important contribution this project will make to the literature is an identification of ways and areas in which resilience can be applied that will be meaningful for older adults.

2. Method

The method adopted for this project was a conceptual and theoretical analysis, with methodological influences from Rodgers (1989) and Walker & Avant (1995). A concept is defined as a stable organization in the experience of reality that can be named (Morse, 1995) The purpose of a conceptual analysis is to reduce the ambiguity associated with a concept so that it can be used in a meaningful way (Hansen-Kyle, 2005). For this project, a conceptual and theoretical analysis of resilience has been undertaken because although there is a large body of literature, there is a certain “murkiness” about how the concept of resilience is defined and used, particularly as it pertains to late adulthood.

The framework for the project comprised a six step process:

- Identification of the research question;
- Creation of the search strategy and delineation of parameters;
- Gathering sources;
- Data extraction;
- Conceptual and theoretical analysis and;
- Model development.

The conceptual analysis was further subdivided into six components: defining the concept of resilience, reviewing the historical development of the concept, identifying direct and indirect theoretical influences, summarizing the attributes, antecedents, and consequences of resilience, discussing the empirical references used to measure resilience, and lastly comparing resilience to other similar concepts.

Based on an initial review of the literature, a search strategy was developed to gather resources. Key words used in various permutations and combinations included resilience, resiliency, resilient; multiple morbidity, chronic illness/condition; older adult, senior, aging. Based on the first phase of readings, additional terms such as disablement, adaptation, development, coping, thriving, and life span were added to

further understand the themes that were recurring in the literature. Databases included CINAHL, AgeLine, PsychInfo, and SFU Quicksearch. As articles were gathered, the reference lists were scanned to identify other applicable studies. Article inclusion was limited to papers published in peer-reviewed journals, book chapters, and reports written in English, and included adults over 65 years old. Studies in which resilience was not a primary focus were excluded from the analysis. Date parameters for data collection span January 1990 to August 2013. These parameters were selected since research on resilience notably increased starting in the 1990s (Elmore et al., 2011). Additionally, the study of resilience in older adulthood was signified by the publication of Wagnild & Young's (1990) study of resilient qualities in older women.

Data extraction and organization was facilitated using an Excel spreadsheet. The following headings were included: full APA citation, sample, method and measurement tools used (if the study was empirical) as well as the theory or paradigm influencing the study, definition of resilience, related terms and concepts used, hypotheses or research questions, results (including attributes, antecedents and consequences of resilience identified within the study), implications, a critical review and directions for future research.

Results from the data extraction were reported as a conceptual and theoretical analysis of resilience. The project used the steps mentioned above, following methods outlined in Rodgers (1989).

1) **An overview of the definition of the concept** as it has been used in gerontological research.

2) **A brief historical overview of the concept** was summarized to gain an evolutionary perspective and to see how the use of the concept has changed over time.

3) **The perspectives, theories and models that have influenced the study of resilience were identified.** This step required an additional Excel spreadsheet, which was used to critically evaluate the theories that appeared within the literature. The headings on this spreadsheet were adapted from Parse's critical evaluation of theory matrix (2005), and included full APA citation, name of the theory, underlying paradigm, description, brief historical development, postulates, effectiveness in resilience research, heuristic potential in resilience research and critique.

4) **The attributes of resilience were identified**, which refer to the core, unique aspects of a concept that differentiate it from other terms and concepts (Morse, 1995). This was followed by an identification of the **antecedents of resilience**, which are factors or processes that are manifest before the occurrence of a concept. The **consequences of resilience** were also identified, which occur after or as a result of the concept.



Figure 2.1 - Three Components of a Concept

5) Ascertained the **empirical referents of resilience**, which entailed a review of the measurement tools and scales used to operationalize resilience.

6) **Similar or related concepts to resilience** that appeared within the literature were identified and distinguished from resilience. Differentiating resilience from other similar concepts helped to further reduce the ambiguity and promote the unique features of the concept (Rodgers, 1989).

The conceptual and theoretical analysis was followed by the creation of a model of resilience, which included components of the analysis as well as other theoretical influences. To ensure that the model was responsive to chronic adversity, it was contextualized within the experience of multiple morbidity. An important facet of this work was to identify the possible interventions and applications using the model for future resilience research. This model supports one of the main purposes of resilience research: to improve the effectiveness of interventions and promote well-being through resilience (Luthar & Brown, 2007). The project was concluded with an identification of existing gaps in the literature and directions for future research.

3. Conceptual and Theoretical Analysis

3.1. Resilience Defined

The definition of resilience has been criticised for being an ambiguous construct that lacks conceptual clarity (Allen et al., 2011; Masten, 2007; Ungar, 2011). The basic definition of resilience in human and other biological systems maintains early influences from the physical sciences, which defines resilience as the capacity of a material to return to its original shape following deformation (Kirmayer, 2011). It's origin can be found in the root word "resilire" - to spring back (Resnick et al., 2011; Windle, 2010). These early influences imply that the object remains unchanged following a stressful event, which does not account for the complex biopsychosocial functioning or resulting development experienced by a human being. Over recent decades, there have been a variety of definitions which have built upon this basic understanding of resilience (Masten, 2007).

Primarily, there have been two definitions that have impacted the current conceptualization of resilience. One views resilience as a personality trait, and the other as a process. As a personality trait, resilience has been defined as a stable quality of the individual that allows them to bounce back from adversity and adapt (Jacelon, 1997; Wagnild, 2003). In this capacity, resilience is thought to moderate the effects of stress and act as a protective strength in the face of adversity (Gooding et al. 2012; Nygren et al., 2005; Wells, 2010). It may also be considered a constellation of traits, including optimism, extraversion and conscientiousness (Trivedi et al., 2011). The greatest criticism of this approach is that it explains the phenomenon as a stable resource of an individual. By conceptualizing resilience as a personality trait, there is a risk of underestimating the contextual and external factors that contribute to resilient outcomes (Leipold & Greve, 2009; Ungar, 2011).

As a process, resilience has been defined as positive adaptation to adversity, or "bouncing back" from a stressful event (Hardy et al., 2004; Jopp & Rott, 2006; Luthar et

al., 2000; Netuveli et al., 2008; Windle, 2010). Common terminology used when describing the processes of resilience include rebounding, recovering and reintegrating (Earvolino-Ramirez, 2007). The specific processes are considered coping mechanisms, which provide the pathway to resilient outcomes (Leipold & Greve, 2009). Definitions that attempt to describe resilience as a process are better equipped to explain the dynamic and situational aspects of the phenomenon. However, they often maintain an individualistic view of adaptation and fail to account for the interaction between the person and multiple systemic levels of their environment.

Since neither perspective has been fully capable of capturing the phenomenon of resilience, there has been a growing need to form a definition that incorporates and transcends both conceptualizations of resilience as a trait and a process. For example, Richardson (2002) defined resilience as a motivational force within each person, with the purpose of providing individuals the drive to attain spiritual harmony and self-actualization. Leipold & Greve (2009) stated that resilience is a phenomenon, not an individual trait or process, composed of a constellation of personal characteristics and processes that interact with the environment within the context of a specific adversity.

Ungar (2011), supplied a detailed definition that explored both the processes and domains of resilience:

“In the context of exposure to significant adversity, resilience is both the capacity of individuals to *navigate* 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” (Ungar, 2008, emphasis in original)

This definition acknowledges several key components of resilience. First, it includes the experience of adversity, which is a discriminatory variable that separates resilience from other similar concepts (Lundman et al, 2010; Luthar et al, 2000). Secondly, it includes the access to and activation of resources that span multiple health domains, which will later be explored as a key attribute of resilience. Third, there is an acknowledgement of the potential for resilience to be experienced both individually and collectively. Expanding resilience from the individual to include aspects of the community is an important direction for future research on the processes and constellations of resilience (Wild et al, 2013). Ungar (2011) further advocated for a reduced emphasis on

the individual and increased focus on the interactions between the individual and their environment, termed decentrality, to broaden the scope of resilience. This interaction is indicative of the contextual and dynamic nature of resilience. Lastly, the inclusion of culture and meaning within this definition underscored the variability between cultures and the importance of meaning to the experience of resilience.

Another definition that captured the multidimensionality of the concept defined resilience as:

“... the process of navigating, managing and adapting to significant sources of stress or trauma. Assets and resources within the individual, their life and their environment facilitate this capacity for adaptation and ‘bouncing back’ in the face of adversity. Across the life course, the experience of adversity will vary” (Windle, 2010)

This definition also encompassed the processes of adaptation and the importance of resources. Individual and environmental aspects that contribute to resilient outcomes were acknowledged, and a bridge between the two divergent conceptualizations of resilience (as a trait and as a process) was created. Further, it extolled a lifespan perspective by identifying variance in the experience of resilience over time. Thus, resilience was identified as a developmental process that involves the activation of resources from various domains in an effort to regain a sense of wellness and to experience recovery or even growth in the face of adversity. These definitions were used to guide the conceptualization of resilience throughout this project because they were broad and respected the contextual nature of the concept.

3.2. Historical Development and Evolution

Using an evolutionary perspective to examine the concept of resilience provided a deeper exploration of the contextual and temporal variations in which the concept has been useful. Such a perspective values the dynamic nature of concepts and the interrelationships that exist in reality (Rodgers, 1989). Consistent with a Foucaultian discourse perspective, a historical analysis allows introspection into the emergence of a concept, and can be used to disturb underlying relationships and assumptions (Kendall & Wickham, 1999).

As noted above, the term resilience originated in the physical sciences and was used to describe properties of non-living things. When adapted to biological sciences, the term evolved to incorporate the dynamic process of adjustment and transformation, because living things do not merely “spring back” (Kirmayer, 2011). The emergence of resilience research in the biological sciences was a result of positive psychology and the rise of health promotion which itself resulted from dissatisfaction with the dominant medical model of health care. The medical model focuses on disease, deficit and psychopathology (Cowen & Work, 1988; Windle et al., 2011). Health promotion, by contrast, recognizes that although it is important to look at ways to prevent and treat disease it is equally important to promote human flourishing. Furthermore, health promotion emphasizes the ability for individuals and groups to influence practices and policies related to health, and therefore to influence outcomes such as individual health and collective well-being (Stokols, 1992). Resilience, therefore, is an essential component of health promotion, and contributes to providing a balanced perspective on aging that the “medicalization” of older persons is incapable of providing (Allen, 2011; Nakashima & Canda, 2009; Wild et al., 2013).

The World Health Organization facilitated the growth of health promotion by defining health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). Although the WHO definition dates back to the late 1940s, research into resilience didn’t begin until approximately 20 years later. Werner & Smith (1971) are credited with the burgeoning literature on resilience beginning with the ground-breaking Kauai Longitudinal Study (Wild et al., 2013). Their study identified children who were at risk of psychopathology based on familial and environmental factors. They found that a number of the participants were doing well despite the expectation of negative outcomes (Masten, 2007), and they began to identify the personal and environmental qualities, or protective factors, present in these children who were deemed ‘resilient’.

Initially, the term invulnerability was used to identify the cases wherein negative developmental outcomes were expected yet positive outcomes were observed (Anthony, 1974). Invulnerability was later exchanged for resilience, since the former implied that the avoidance of risk was a fixed and absolute characteristic. Resilience, on the other hand, is variable and context-dependent (Luthar et al., 2000). By replacing invulnerability with resilience, the term was positioned on a continuum opposite vulnerability (Rutter,

2006), however it has been noted that resilience results from the experience of vulnerability rather than the avoidance of it (Felten & Hall, 2001). Resilience is therefore not the opposite of vulnerability, however the use of the concept has been influenced by this continuum.

The original studies on resilience in childhood and adolescence can be identified within the first two waves of resilience research. They followed two primary research agendas: the first wave was a descriptive approach, and sought to create an exhaustive list of traits and environmental characteristics that predicted resilient outcomes (ie. Werner & Smith, 1971). First wave researchers enumerated the resilient qualities within individuals, and measured resilience in its various forms (Masten, 2007; Richardson, 2002). The qualities identified were termed protective factors or resources (Luthar et al., 2000; Masten, 2001). The identification of these traits has been valuable because they indicate potential avenues for future interventions to enhance resilience. However, this research does not clarify how individuals access or use these resources to overcome adversity, nor how the environment interacts with the individual traits to promote resilience (Liepold & Greve, 2009; Ong, et al., 2009).

The second wave focused on the adaptive processes, or coping, that facilitate resilience (ie. Garmezy, 1993). This wave has been characterized by the investigation of the processes of resilience (Masten, 2007; Ong et al., 2009; Richardson, 2002). The establishment of resilience processes can be seen as an evolution of stress theory, in which outcomes are viewed as the product of stressors interacting with risk and protective factors (Norris, 2011). Resilience focuses on the adaptive and positive outcomes of coping with stress (Tusaie & Dyer, 2004). By focusing on the processes of resilience, the significance of environmental factors expanded, including the interactions between individuals and their environment (Wild et al, 2013). Thus, an ecosystemic perspective has been encouraged (Waller, 2001), which acknowledges the interdependence between systemic levels (Stokols, 1992). These first two approaches created the bifurcation in the conceptualization of resilience, resulting in the concept being defined as either a trait or a process, as explored above (Wild et al., 2013).

The purpose of identifying processes has been to enable effective interventions to help individuals and groups overcome adversity (Richardson, 2002), which is the goal of the third wave of resilience research (Masten, 2007). Research from this era has

focused on promoting competence and wellness, and preventing psychopathology. The benefits of intervention and prevention studies are that study designs have allowed for the empirical testing of theories without waiting for the natural course of resilience to take place (Masten, 2007).

Research on resilience in later life has gained momentum as life expectancy has increased, concerns about quality of life in old age have surfaced, and aging in a “healthy, connected and productive manner” has become a priority (Kern & Friedman, 2011). The concept of resilience in older adulthood has thus been influenced by discourses of healthy and successful aging. Healthy aging has been defined as the ability to “go and do meaningful things” (Bryant et al., 2008). This definition has been drawn from qualitative research that elicited the perspectives of older adults. This perspective supports the inclusion of holistic measurements of well-being as outcomes of resilience, and further promotes the importance of meaningfulness to the health of older adults. Healthy aging has been conceptualized as an antecedent to successful aging, which is most commonly associated with Rowe & Kahn’s (1997) three criteria: avoidance of disease and disability, maintenance of physical and cognitive function, and engagement in social and productive activities. These criteria have been criticized for marginalizing older adults who are managing to live well with chronic diseases and other disabling challenges (Strawbridge et al., 2002). Resilience may contribute to the attainment of these criteria, or may provide an alternative goal, which is to manage and adapt to challenge in a way that is meaningful within one’s personal context.

The seminal research on resilience in older adults was conducted by Wagnild & Young (1990), who followed the first wave, trait-centred approach to identify the characteristics common in older women who had displayed positive outcomes in the face of adversity. The themes that they found were deemed to represent the core concept of resilience in aging, supported by previous descriptions of resilience as a quality that modifies individual response to risk (Rutter, 1985), and as an individual ability to modify ego-control according to one’s context (‘ego-resilience’, Block & Block, 1980). The emergent themes encompassed equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness. These formed the basis of their Resilience Scale, which was the first scale developed to measure resilience in older adults (Wagnild & Young, 1990).

The exploration of the processes and traits associated with resilience is an incomplete and evolving study. Research on older adults in particular lags behind childhood and adolescent research (Luthar & Brown, 2007). Additional realms of opportunity beginning to emerge include community and economic resilience (Rose, 2004), and the integration of resilience from multiple systemic levels (Ungar, 2011; Waller, 2001; Wild et al., 2013). The fourth wave of resilience research compels researchers to focus on multilevel analysis and understanding adaptation (Masten, 2007). It has been identified as a means to bridge the concepts of resilience as a trait and resilience as a process, and will build upon the lessons from the previous three waves of resilience research (Rutter, 2006).

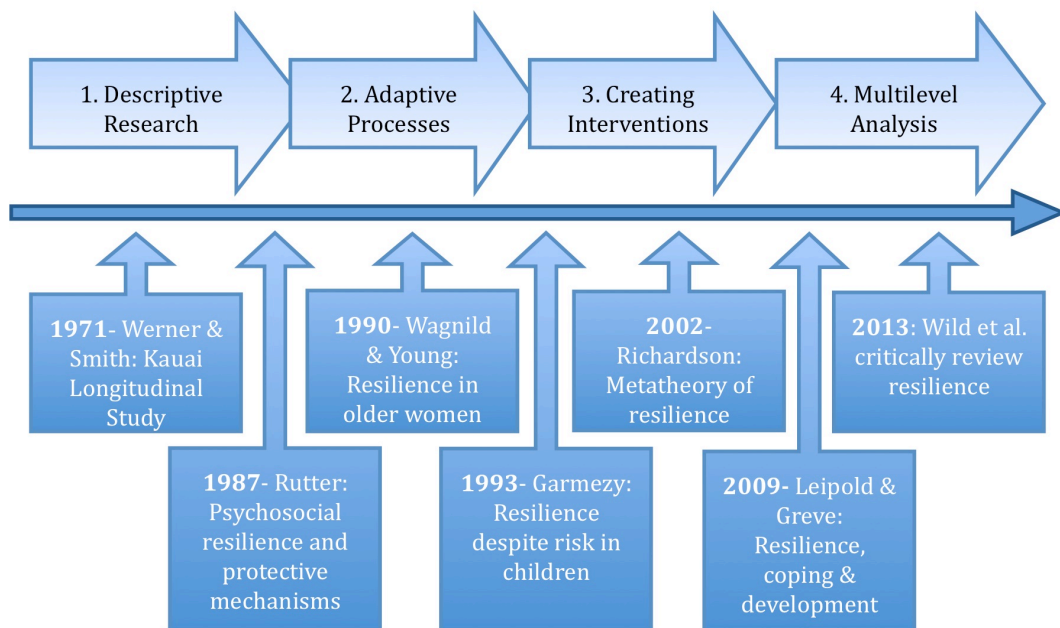


Figure 3.1 - Four Waves of Resilience Research and Key Milestones

3.3. Theoretical Influences

The third component of the conceptual and theoretical analysis was to review the relevant theoretical influences on the study of resilience, including overarching perspectives, theories and models found in the literature. The study of resilience

originated in the discipline of psychology, specifically developmental and positive psychology (Masten, 2001; Seligman & Csikszentmihalyi, 2000). As research has progressed, there has been a greater inclusion of socio-ecological perspectives, which will continue to be important as the fourth wave of research attempts to provide a multi-level analysis of the concept (Greve & Staudinger, 2006). The following section identifies the influences from developmental and positive psychology, as well as socioecological theory, the disablement process model and existing models of resilience.

3.3.1. *Developmental Psychology*

At the core of developmental theory is the concept of development, broadly defined by Leipold & Greve (2009) as the continued possibility for future development. More explicitly, optimal development entails balancing the gains and losses that occur, which vary depending on one's life stage (DeMuth, 2008). A lifespan development perspective has been recognized as critical to the study of resilience. From this perspective, resilience is viewed as an ongoing and continuous process of adaptation that occurs across all stages of the life span (Boerner & Jopp, 2007). A lifespan development perspective sets the stage for the possibility of a resilience "trajectory" in older age, wherein previous experiences of coping and overcoming adversity may enrich one's ability to deal with the continued challenges of aging (Clark et al., 2011).

The lifespan theory of control (Heckhausen & Schulz, 1995) is a developmental theory that has been applied in resilience research. This theory identifies components of human agency: primary control, in which the individual makes changes to the environment or the situation to address a challenge, and secondary control, which refers to making changes within oneself in regards to how the situation is perceived (Boerner & Jopp, 2007). These processes are thought to be activated to maximize gains and minimize losses. In older adults, increased compensatory secondary control is expected as reserve capacity diminishes (Boerner & Jopp, 2007). Lifespan theories of control indicate that, as human beings, we have the capacity to influence our surroundings and ourselves in a way that either contributes to or detracts from resilience.

Another commonly applied developmental theory is selection, optimization and compensation (SOC) (Baltes & Baltes, 1990; Wild et al., 2013). In this theory, the processes of selection, optimization and compensation work dynamically and

interdependently to enable positive adaptation. Selection refers to choosing what to focus on, optimization is the recruitment and application of appropriate resources, and compensation is the use of alternate means to maintain function (Boerner & Jopp, 2007). The theory suggests that positive adaptation, and therefore resilience, is most likely to occur when individuals select goals that align with or optimize their available resources (Baltes & Carstensen, 1996). The theory is responsive to intentional changes, or elective selection, and unexpected changes, or loss-based selection (Boerner & Jopp, 2007; Freund & Baltes, 1998). It has been valuable in explaining how older adults face adversity, and may be applied in a specific domain or as a complementary framework to other theories (Boerner & Jopp, 2007). Wiles et al. (2012) found that the resilient older adults they interviewed exemplified selective optimization and compensation as they described their daily activities. It was common for the resilient participants to persist with activities that were important to them, even if it took longer than it used to.

The model of assimilative and accommodative coping is another influential model that has been used to understand resilience. It encompasses two antagonistic coping processes: assimilation, which is the persistent effort to pursue goals through modification of life circumstances, and accommodation, which is the adjustment of goals due to limitations or restrictions (Boerner & Jopp, 2007). In assimilation, it is assumed that the original goals of the individual have been maintained, and the individual is actively attempting to return to homeostasis (Leipold & Greve, 2009). An example of assimilative coping may be to treat depression using medication and behavioural change (Hardy et al., 2004). In the process of accommodation, goals, perceptions and preferences are changed to allow an individual to cope with changes they cannot control (Leipold & Greve, 2009). Some examples of accommodative processes are to reinterpret situations and use downward social comparisons (Greve & Staudinger, 2006).

The model postulates that these processes are activated in response to the cognitive appraisal of a discrepancy between the actual and desired states of an individual. Although the processes are described as antagonistic, there is evidence in the literature of the two working in tandem to maximize the adaptation of older adults (Jopp & Rott, 2008). For older individuals, it is theorized that there will be an increased reliance on the process of accommodation as abilities diminish (Boerner & Jopp, 2007). In a study of positive adaptation and valuation of life, Jopp & Rott (2006) found evidence of assimilation and accommodation in the social tactics of resilient older adults who

maintained their goal of social connectedness by revising their preference for in person interactions with friends and instead used the telephone to contact loved ones. By revising their preferences, they were able to maintain the goal of social connection, and thus demonstrate resilience while adapting to declining health.

3.3.2. *Positive Psychology*

Another foundational perspective of resilience research is positive psychology, or the pursuit of the adaptive, creative, and emotionally fulfilling aspects of human behaviour (Masten, 2001). It has been noted that positive psychology experienced a surge of research due to the growing recognition that individuals can actively contribute to positive outcomes with strength and resilience (Seligman & Csikszentmihalyi, 2000).

An aspect of positive psychology is the “strengths perspective” (Cowen & Work, 1988). This perspective is grounded in a belief in the capacity of individual strengths to enable positive change, and that the strengths and resources of people and their environment are central to well-being (Chapin, 1995; Saleeby, 1997). Furthermore, it recognizes that there is reciprocity between an individual and their environment, even in the most difficult circumstances (Emlet et al., 2011). For older adults, this perspective highlights the possibility for gains and growth into old age, and addresses the pursuit of wisdom, transcendence and peace of mind (Alex, 2010). Positive psychology also encompasses salutogenesis, which aims to study the etiology of health and is antithetical to the pathology perspective or medical model (Emlet et al., 2011; Stokols, 1992).

3.3.3. *Socio-ecological Perspectives*

Although psychological theories are integral to understanding the outcomes of resilience, they lack an integration of the person-environment interaction and the impact of socio-environmental factors on resilience. There has been little consideration of the physical, social, and affective environments that play a key role in the adaptation of older adults (Fry, 1990). A key perspective that addresses this gap is the ecosystemic perspective or socio-ecological approach. An ecosystemic perspective emphasizes the interrelatedness and interdependency between individuals, social systems, and the environment (Hobfoll et al., 1990; Stokols, 1992). It has been characterized by the

balance between an individuals' needs and abilities, and the demands of the environment (Greve & Staudinger, 2006). To illustrate the different socio-ecological levels, Wild et al. (2013) created a diagram which nested individual resilience within family resilience, within community and neighborhood resilience, within community resilience, and lastly societal resilience. This model helps one visualize the interconnectedness and interdependence of multiple social realms in which a person exists.

Resilience Model

Resilience as contextual and collective:
Scales of resilience in later life



Wild et al., 2013

Figure 3.2 - Resilience as Contextual and Collective – Used with permission of Cambridge University Press.

The socio-ecological approach has been influenced by Lewin's (1951) behavioural expression: $B=f(P,E)$ in which behaviour is a function of person-environment interaction (Ungar, 2011). This equation shows the person and their environment to be mutually dependent, and ranks the context and resourcefulness of the social and physical environments as equal to the individual qualities of a person (Zautra et al. 2010). This perspective is essential as resilience research tackles complex relationships and interactions between the individual and their environment in the fourth wave of resilience research (Waller, 2001). This approach is also enhanced by the lifespan perspective, which posits that development occurs due to reciprocal interaction between these systemic levels over one's lifetime, and that current perceptions and behaviours are influenced by previous experiences (Waller, 2001).

The socio-ecological approach is the basis of person-environment models such as Lawton & Nahemov (1975) socio-ecological model. Person-environment fit refers to the correspondence between the abilities and characteristics of the individual (their competence) in relation to the demands and resources of his/her environment (Fry, 1990). An assumption of this model is that too much or too little environmental demand may lead to maladaptive behaviour and negative outcomes. The model can be criticized however for failing to capture the interactional effects of external resources on personal competence. This theory is useful in resilience research as it underscores not only the importance of the environment to successful adaptation, it also introduces the concept of an optimal zone of development. Windle (2010) identified this optimal zone as the “challenge model” of resilience research, wherein the relationship between a risk factor and outcome are curvilinear. The assumption is that too much and too little exposure results in negative outcomes, whereas moderate levels enable growth and positive adjustment, and thus resilience.

3.3.4. *The Disablement Process*

The disablement process has been a useful model to link multiple morbidity and disability (Verbrugge & Jette, 1994). The process is considered a sociomedical model of disability, and begins with pathology, which can lead to impairment, followed by functional limitation and ultimately disability. This process occurs in the context of the sociocultural and physical environment. What this clarifies is that a chronic illness (the pathology) alone does not create disability, but that the functional limitations that may arise from impairments brought on by a chronic illness will manifest as disability if there is a gap between personal capacity and environmental demand. Disability is therefore related to the socioecological models described above, since it is a reflection of poor person-environment fit. The process also includes the impact of risk factors, exacerbators and interventions that create feedback loops in the pathway. In the current project, resilience will be a key intervention in the process, and a means of coping with the pain and disability instigated by multiple morbidity.

3.3.5. *Models of Resilience*

In addition to psychological and socioecological theories, several models of resilience were found within the literature. Richardson (2002) described a model of

resiliency, that referred to the personality characteristic or first wave of resilience research. His model was based on biopsychospiritual homeostasis, and was informed by social learning theory (Bandura 1970). It posits that resilient qualities are obtained through disruptions and reintegration, and that resiliency can be learned. Furthermore, it upholds the value that disruption (adversity) is necessary for growth and to access latent human potential (Richardson, 2002). The resiliency model proposed four levels of reintegration that may occur following a disruption to homeostasis. The uppermost outcome, resilient reintegration, entailed growth, knowledge, self-understanding, and importantly, increased strength of resilience resources. Alternatively, individuals may reintegrate back to homeostasis, which was characterized by recovery, healing, and getting past a negative event. Reintegration with loss referred to individuals who gave up on a hope or dream, and dysfunctional reintegration entailed a lack of introspective abilities which prevented the person from being able to deal with the situation or “bounce back”.

This model is useful to visualize the variety of outcomes that are possible from a reaction to a disruption, but it does not provide answers to the question of *how* resilient reintegration occurs. It has also been criticized for preferentially focussing on the individual rather than the context and environment. Additionally, disruptions occur in multiple domains, and this model does not explain that a person may display resilient reintegration psychologically yet reintegration with loss physically (Janssen et al., 2011). This tension between domains is a challenge for older adults, especially those facing chronic illnesses.

By contrast, Harris (2008) provided a resilience framework informed by the historical development of the construct. Resilience was defined as the ability to bounce back and overcome negative events, which are influenced by a number of factors. A key facet of this model was the interaction between competence and protective factors versus risk and vulnerability. Competence is the individuals' ability to overcome adversity, which is enhanced by assets in both high and low risk situations, and specifically by protective factors and processes in high risk situations. Risks increase the possibility for negative outcomes, but do not necessarily apply to everyone in the same situation, whereas vulnerability is associated with negative outcomes, especially for individuals facing high adversity. This framework calls attention to the capacity in every

individual to display some form of resilience, as there are numerous pathways to resilience (Harris, 2008; Wild et al., 2013).

Greve & Staudinger (2006) also provided a model of resilience which identified risks on the one side and developmental outcomes on the other. Bridging these two factors were resources, including psychological regulatory processes, such as coping, and structural characteristics. This conceptualization positions resilience as a constellation of processes, individual characteristics, risks and developmental outcomes (Greve & Staudinger, 2006; Leipold & Greve, 2009). This framework is useful for the continued development towards understanding the interaction between the individual characteristics and assets that have been identified with the processes that combine to create resilient outcomes. Leipold and Greve (2009) built upon this model, and added a temporal component that showed how individual and contextual factors had an impact along the progression of resilience, including the perception of adversity, regulatory processes, and eventual outcomes.

The fourth model identified in the literature was found in Trivedi et al. (2011), who outlined a conceptualization of resilience in chronic illness in which resilience encompassed invulnerability as well as the ability to recover from stress. In their model, there were three levels of resilience:

1. *Primary Resilience*: transient loss of well-being in response to an adverse event. These individuals appear to have sufficient resources to ensure resilient outcomes.
2. *Secondary Resilience*: moderate loss of well-being and/or subclinical distress, but soon regain equilibrium using their own resources.
3. *Tertiary Resilience*: significant loss of well-being, and may experience psychiatric symptoms. May regain equilibrium following a longer delay or with professional intervention.

This model recognizes that measures of resilience change over time, and is applicable in a clinical environment since it identifies individuals who may need extra attention or intervention. This conceptualization is responsive to the temporal changes in resilience over time, which are especially important as a person progresses through their chronic disease trajectory (Trivedi et al., 2011). This model and the others have provided a conceptual basis from which to further explore the attributes, antecedents and consequences of resilience.

3.4. Attributes of Resilience

Attributes represent the core components that form a concept, which are applicable in any situation that the concept is used (Morse, 1995). Additionally, the combination of attributes are unique to the concept, creating the real definition as opposed to a dictionary definition (Rodgers, 2000). The attributes of resilience can be summarized as a constellation of factors that work through dynamic processes to result in a good outcome despite adversity.

3.4.1. A Good Outcome Despite Adversity

The defining attribute of resilience is the attainment of “good outcomes” in the face of adversity (Harris, 2008; Netuveli et al., 2008). This attribute provides a description of resilience that highlights the balance and integration of different forces within the constellation of resilience described below. Defining “a good outcome despite diversity” requires the identification and operationalization of two variables:

- There is or has been adversity
- There is evidence of good outcomes

Creating agreed-upon definitions and criteria for these components has been contentious within the literature (Harris, 2008; Masten, 2007). Challenges in assessing adversity arise from diversity in the severity and type of adversity measured (Luthar et al., 2000). Adversity is further explored in this project as an antecedent to resilience. Similarly, agreeing upon the constituents of good outcomes is a challenge. Briefly, good outcomes encompass the consequences of resilience: wellness, recovery, growth or development. For example, positive psychological indicators, such as high subjective well-being or lack of pathological symptoms such as PTSD (Beutel et al., 2010; Pietrzak & Cook, 2013) and positive adaptation (Leipold & Greve, 2009) have been identified as good outcomes in the literature. A further exploration of “good outcomes” is addressed within the discussion of consequences.

3.4.2. Constellation of Factors

Reflecting on the various definitions and theoretical influences of the concept, resilience is best characterized as a constellation of interactive features (Leipold &

Greve, 2009). This constellation includes personality characteristics, individual assets, social resources, environmental and situational conditions, and protective processes. It is a multidimensional construct composed of three fundamental factors: the individual, their context, and the specific stressor or problem being faced. This attribute transcends the conceptualization of resilience as either a trait or a process, and instead combines both into a holistic understanding of the multifaceted, multidimensional nature of the concept.

The exact components of the constellation will differ with each person, situation and stressor. As such, there are a multitude of possible permutations of factors leading to resilience. An in depth exploration of the variety of factors that contribute to the constellation of resilience emerge in the examination of the resources and processes of resilience. The constellation can be visualized as an equation, wherein positive outcomes are the result of dynamics between stressors, risks, resources, and abilities (Harris, 2008). In the equation, competence, which is the individual adaptive use of internal and external resources (Fredricksen-Goldsen et al., 2013; Windle, 2011) outweighs risk to maintain well-being. Changes in the variables can disrupt the balance, requiring resilient processes to be initiated and equilibrium to be restored (Richardson, 2002). Wiles et al (2012) further described the equation to be a balance between resistance and acceptance. This tension was demonstrated in Nakashima & Canda's (2005) study of resilience in the dying process. They found that surrendering to the dying process while continuing to resist death characterized resilience and helped maintain quality of life in their sample. The imagery of an equation was also found in the work of Waller (2001) who used a socio-ecological lens to highlight the dynamic balance of resilience within and between different ecological levels. The ability to create balance and resilience is therefore more important than the ability to avoid adversity (DeMuth, 2004).

3.4.3. *Processes of Coping and Adaptation*

Overall, resilient aging can be understood as a continuous process of restructuring or reintegrating (Fry & Debats, 2010). Specifically, regulatory processes of change and adaptation are required. Collectively, these processes are referred to as coping, a concept which is differentiated from development, an outcome of resilience, by virtue of time. Coping is a short term, problem driven approach to a challenge, whereas

development represents a longer term change in a persons' cognitive, behavioural and emotional repertoire (Leipold & Greve, 2009). Coping processes are an integral component of the resilience phenomenon (Greve & Staudinger, 2006).

Coping is an umbrella term that defines the processes by which individuals manage the demanding, threatening, harmful or otherwise adverse situations that they face (Greve & Staudinger, 2009). The concept can be generally divided into two broad categories: active and avoidant coping (Wu et al., 2013). In active coping the individual takes steps to mitigate the impact of adversity on his/her psychological, social, physical or emotional health. These steps can be differentiated by the developmental goals they serve to achieve, which may be to improve or maintain one's current abilities, or to reorient one's goals and preferences to align with the current situation (Boerner & Jopp, 2007). Active coping processes allow individuals to effectively deal with adversity (Greve & Staudinger, 2009), and are associated with adaptability and psychological resilience (Wu et al., 2013). Avoidant coping, on the other hand, is the response of individuals who do not address the adversity. This form of coping may provide short term protective effects for psychological and subjective well-being, but is not thought to be beneficial in longer term assessments of resilience (Wu et al., 2013).

Coping processes such as reconciliation and reconstruction have been identified as important to individuals facing chronic illness (Kralik et al., 2006). Since it may not be possible for individuals facing chronic illness to return to life as it was previously understood, they may use reconciliation to first put the changes and new experiences into perspective, and then reconstruction to create a sense of coherence. Both of these processes would be seen as secondary or adaptive adjusting forms of coping which address the developmental goal of reorientation. They provide resilience of one's sense of self, a noted element of well-being (Fry & Debats, 2011). Reconstructing was also discussed in Hildon et al (2008) as a way to build meaning out of challenges, which is an important consequence of resilience. One strategy to enable this process has been using story-telling or narratives, a strategy that was demonstrated by dying older adults (Nakashima & Canda, 2005) and with native elders (Kirmayer, 2011). Storytelling allowed these individuals to make sense of their current situation and generate reflection, which in turn promoted a recognition of individual strengths and resilience.

Other processes that have been discussed in relation to adapting to chronic stress have been social learning and modelling. Kralik et al. (2006) conducted a study with chronically ill older adults in which resilience was not seen as a personal attribute nor as a discrete coping skill, but as the ability to reflect, learn and act to overcome adversity. In their study, the participants learned specific skills to address their illnesses, as well as gained new perspectives on life with chronic disease through purposeful social engagement in an online community. Social learning theory can inform the study of resilience in chronic illness by providing a framework by which individuals acquire coping skills and resilience resources to complement their existing repertoire. In their study, learning offered an avenue to reach beyond recovery and promote growth in the face of adversity (Kralik et al., 2006).

Another key process that has been reported to promote resilience is affect regulation (Ong & Bergeman, 2004; Zautra et al., 2010). Affect regulation refers to the ability to maintain boundaries between positive and negative emotions in times of stress, with the experience of positive emotions providing protective and restorative functions (Ong & Bergeman, 2004). It facilitates active coping techniques by interrupting negative emotions when facing adversity (Ong et al., 2006). The ability to experience emotional complexity and positive affect has been found to enhance resilience in widows (Ong et al., 2006). It was discovered that women who were resilient in widowhood displayed greater control over their positive emotions and experienced a range of positive and negative emotions. Targeted strategies to improve emotional regulation included the use of humour and mindfulness training (Ong & Bergeman, 2004; Zautra et al., 2010). Zautra et al. (2010) reported on an intervention using mindfulness training in which positive emotions were promoted and negative responses were regulated in patients with rheumatoid arthritis and fibromyalgia. The participants reported increased coping efficacy and physicians reported a decrease in joint swelling and tenderness following the intervention. Other research has identified that the adaptive benefits of emotional regulation are highest under adversity (Ong et al., 2006), which indicates that it is a protective factor, not merely an individual asset (Harris, 2008).

Gooding et al. (2012) found older adults to be better than younger adults at achieving resilience through emotional regulation. Additionally, a factor analysis of the Connor-Davidson Resilience Scale involving older women found acceptance of negative affect to be a component of resilience, which was interpreted to signal a heightened

ability to accept and experience emotions in later life (Lamond et al., 2008). Further support for the importance of emotional regulation for resilience comes from results that indicate that positive emotions were more common among resilient individuals, that low psychological resilience was associated with difficulty regulating emotions, and lastly that positive emotions increased the speed of recovery from stress (Ong et al., 2006).

3.5. Antecedents

Antecedents are the events or conditions that precede the occurrence of a concept (Morse, 1995). In the case of resilience the essential antecedent, which occurs in every situation and context, is the experience of adversity (Earvolino-Ramirez, 2007; Luthar et al., 2000). The second key antecedent to resilience is the activation of resources. Resources have been consistently reported in the literature to greatly enhance the possibility for resilient outcomes, and are frequently predictive of resilience. Furthermore, resources are hypothesized to lead to good outcomes since they provide the building blocks for positive adaptation (Jopp & Rott, 2006).

3.5.1. Adversity

The experience of adversity precipitates the phenomenon of resilience, which separates it from ego-resiliency and from other life strengths, such as sense of coherence or self-transcendence (Fry & Debats, 2010; Nygren et al., 2005). Therefore, to study resilience, the indication that adversity has occurred (or is occurring) must be established (Hildon et al., 2010). Adversity is defined as a negative event or occurrence that has the potential to disrupt adaptive functioning (Harris, 2008). The impact of adversity can be visualized as a disruption to an individual's assumptions, behaviours, self-concept and explanatory systems (Bury, 1982). Furthermore, adversity is characterized by limitations in opportunities or well-being brought on by social, mental or physical loss (Hildon et al, 2008).

Adversity in chronic illness can be understood through the disablement process (Verbrugge & Jette, 1994). The four stages of the disablement process each confer adversity to the individual with chronic illness, however the impacts of disability (the final component of the disablement model) have the capacity to confer the greatest adversity.

Since disability is the gap between the persons capabilities and environmental demands, adversity arises as this gap becomes apparent, and impacts an individual's ability to engage in meaningful activity. Therefore, this model explains that it is not the chronic illness itself that is causing adversity, but the challenges facing an individual and their ability to go and do meaningful things that is causing adversity.

The judgement and measurement of adversity has faced challenges in the literature. Typically, it has been assessed as a negative life event or trauma which has a high probability of causing a decrease in quality of life indicators or poses a developmental challenge (Luthar et al., 2000). While certain studies identified one instance of adversity, others tallied life events in recent years or gained a lifespan perspective by soliciting experiences of adversity throughout one's personal history (Becker & Newsom, 2005; Luthar et al., 2000).

Adversities can be categorized as internal disruptions, such as the experience of depression, or as external events, such as war (Fuller-Iglesias et al., 2008; Pietrzak & Cook, 2013). Negative life events in research with older adults have included death of a loved one, chronic illness, or a decline in a health domain over the past five years (Hildon et al, 2008). Kinsel (2008) operationalized adversity simply as a self-defined negative life event. Additionally, adversity can be classified as an acute or chronic issue, each of which may require different resources to overcome (Kralik et al., 2006). There is also evidence that an acute stressor can become a long-term chronic adversity, further complicating these relationships. For example, in the exploration of resilience related to death of a spouse, the death is an acute stressor but the lingering reminders of the loss contribute to chronic adversity (Bennet, 2010; Bonnano, 2004).

While identifying specific sources of loss and trauma has been common in the literature, some note that it may be more relevant to focus on the every-day challenges that older adults face (Allen et al., 2011; Richardson, 2002). Older adults are more likely to face daily struggles as well as significant adverse events compared to younger cohorts. Allen et al. (2011) advocated for the inclusion of normative developmental change in older adulthood to be a valid assessment of adversity, thus making resilience a task for all older adults. Research from this perspective has followed the daily lives of older adults through diary entries, which have revealed important discoveries on the nature of emotional regulation and resilience, previously discussed (Ong et al., 2006).

Typically, studies of resilience have focused on the responses that are elicited from an adverse situation, since people respond to events based on how they are perceived (Clark et al., 2011; Hildon et al., 2008). For this reason, developmental researchers have further defined adversity as a discrepancy between how an individual perceives a situation “is” versus how they believe it “ought” to be. Adversity, or the “is-ought” discrepancy, leads to the activation of coping processes to either actively reduce the source of the problem or to change their perception of the situation (Leipold & Greve, 2009). Taken from stress theory, this perception has been referred to as cognitive appraisal, in which the person evaluates whether a specific encounter is relevant to his or her well-being (Lazarus & Folkman, 1984). Cognitive appraisal is impacted by the meaning and significance of an event, and by the larger social context in which it occurs (Resnick, 2011). For example, in research on widowhood, the centrality of the deceased person to the individual’s daily life and routine determined the stressfulness and duration of perceived adversity (Hildon et al., 2010).

Lastly, the potential for resilient outcomes has been correlated with the severity and accumulation of adversity. Nygren et al. (2005) noted that extreme physical constraint and functional limitation appeared to dampen resilience, while Hardy et al. (2004) found that resilience was negatively correlated with the stressfulness of an event. Similarly, the total number of adversities faced has been associated with fewer instances of resilience (Netuveli et al., 2008). These findings indicate that there is a limit to resilience, and that resilience does not entail invulnerability to adverse events.

3.5.2. *Activation of Resources*

The activation of resources following adversity begins the processes of resilience discussed above. This activation requires energy, which Richardson (2002) describes as the innate “force within everyone that drives them to seek self-actualization, altruism, wisdom, and harmony with a spiritual source of strength”. This inner drive has also been referred to as motivation (Resnick, 2011), which functions to “kick start” the processes of resilience. In a study of resilience in older adults, resilience was defined as the mobilization of sources of strength, which included pride, mastery, acceptance of help, and anticipation of future losses (Janssen et al., 2011). They found that older adults engaged different resources based on the specific stressor they were facing and their surrounding environment to maximize their available resources and achieve successful

outcomes. Another study that compared motivation to resilience found that the relationship between resilience and physical activity was mediated by self-efficacy, which is a central component of motivation (Resnick, 2011).

Energy and motivation interact with the availability and accessibility of resources, which are central components of Ungar (2008) definition of resilience, which explains that individuals and groups must navigate and negotiate resources to achieve well-being. Resource theory provides a theoretical explanation for how resources contribute to resilience - the theory posits that resources support well-being by providing the prerequisites needed to accomplish daily tasks and ultimately achieve developmental goals (Jopp & Rott, 2006).

Resources have been considered antecedent factors because they are accessed prior to the outcomes associated with resilience (Norris et al., 2011). By labelling resources as antecedent factors, they can be differentiated from the attributes and the consequences of resilience. Earvolino Ramirez (2007) noted that protective factors (resources) cannot be considered attributes of resilience because they are contextual, situational, and individual, and may or may not be present or beneficial in each case of resilience. In relation, the exact combination of resources that will be effective in one instance of resilience will vary by function of the severity and type of stressor, cultural practices, and other contextual factors (Ungar, 2011). The unique combination of resources that are available to an individual within a given situation have been referred to as a “resilience repertoire” (Clark et al., 2011), which reflects the conceptualization of resilience as a balanced constellation of factors.

The identification of resources, also called protective factors and assets, has therefore been a major focus in the literature since the first wave of research (Jacelon, 1996). Protective factors and processes can be distinguished from assets: a protective factor is activated in times of high risk or adversity, whereas assets are equally engaged during times of low or high stress (Harris, 2008; Hildon et al., 2008). This examination of protective factors and assets has drawn from the model of resilience found in Wild et al., (2013, Fig. 3.2) that identified multiple systemic levels of influence including individual, social and environmental resources, to which we now turn.

3.5.3. Individual Resources

Resources that are classified within the individual domain have received the most attention in the literature (Jacelon, 1997; Luthar & Brown, 2007), and are most closely associated with the first wave of resilience research that focused on individual strengths and personality characteristics (Fry & Debats, 2010). The individual factors can be subdivided into psychological, behavioural, social and physical or tangible resources.

Psychological factors are the most commonly cited individual resources. They include competence, self-referent beliefs, sense of purpose and disposition. Competence is the individual ability to access and mobilize resources (Harris, 2008). It was frequently named as an important individual resource because it facilitates the adaptive use of other internal and external resources (Fredricksen-Goldsen et al., 2013; Windle, 2011). In socio-ecological models (ie. Lawton & Nahemow, 1975), competence is thought to be an enduring personal characteristic that interacts with the environment to produce a given behaviour. In the case of resilience, competence promotes adaptive behaviours, or coping, previously discussed. In a factor analysis of resilient characteristics, competence encompassed perseverance, or the will to persist in the face of adversity; meaningfulness, or the recognition that life has purpose; and self-reliance, which is the ability to recognize and utilize one's personal resources (Windle et al., 2008).

Competence is intimately linked with self-referent beliefs, since it interacts with self-efficacy (Janssen et al., 2011). Self-efficacy is the belief in oneself that a task can be successfully completed, or the belief in one's own competence (Greve & Staudinger, 2006). Self-efficacy has been highly correlated with resilience (Resnick & Inguito, 2011). This finding may be explained in reference to social cognitive theory, which asserts that self-efficacy influences motivation and action, thus leading to the mobilization of resources and resilient outcomes (Fry & Debats, 2010). Having high self-efficacy has been empirically correlated with the mobilization of social support (Jopp & Rott, 2006) and has been a robust predictor of physical and psychological health outcomes (Ong & Bergeman, 2004; Resnick, 2011). For example, in a study of happiness in centenarians, self-efficacy was found to have direct positive effects on happiness, which is an important component of subjective well-being (Jopp & Rott, 2006). Self-esteem, defined as the appraisal of one's own self-worth, is another self-referent belief that has been

associated with resilience (Collins & Smyer, 2005). Maintaining positive self-esteem is associated in particular with psychological well-being (Earvolino Ramirez, 2007), and can be enhanced by recalling past experiences of mastery or engaging in activities that provide a sense of accomplishment (Resnick, 2011).

Having a sense of purpose is another psychological attribute that has been found to contribute to resilience (Pietrzak & Cook, 2013). The ability to create meaning and derive a sense of purpose from an adverse event is a resource that enables development and growth (Wagnild & Young, 1993). It has been identified that older adults who have a sense of purpose live longer and healthier lives than those who do not (Fry & Debats, 2010; Pietrzak & Cook, 2013). Wiles et al (2012) found that purpose in life was a common theme in the discussion of resilience, and included being involved with friends and neighbours, work, and helping others. Loss of work and retirement have been cited as a cause of adversity for young-old adults, since these events impact a person's sense of purpose (Hildon et al, 2008). Sense of purpose has also been related to spirituality, which has been another resource that older adults have reported in relation to resilience (Becker & Newsom, 2005; Crowther et al., 2002). Spirituality has been discussed as a source of resilience in a sample of chronically ill older African American adults (Becker & Newsom, 2005), in the dying process (Nakashima & Canda, 2005), and in community dwelling women over the age of 85 (Felten, 2000).

Owing to the history of understanding resilience as a personality characteristic, dispositional factors are also prevalent in resilience research. Optimism, or the tendency to expect positive outcomes (Trivedi et al., 2011), has been shown to be predictive of resilience, measured by the Ego Resilience Scale (Baldwin et al, 2010). In their study of older African Americans, high optimism and low psychological distress were significant predictors of ego resiliency. Optimism has been correlated with longer lives, less depression and a higher likelihood of seeking out medical attention (Wagnild, 2003).

Conscientiousness and extraversion are two of the "big five" personality traits that have been associated with resilience (Trivedi et al., 2011). Conscientiousness is the tendency to act dutifully, aim for achievement and show self-discipline (Friborg et al., 2005; Trivedi et al., 2011), while extraversion is characterized as an outgoing personality with generally high levels of positive emotions (McHugh & Lawlor, 2012). One hypothesis for the correlation between conscientiousness and resilience is that

conscientiousness may confer higher rates of adherence to treatment (Trivedi et al., 2011). A group of studies reported in Martin et al. (2010) suggested a pattern of low scores in neuroticism and high scores in conscientiousness and extraversion to be common in resilience among older adults. Further support from Jopp & Rott (2006) found that extraversion had a strong positive effect on happiness, and Pietrzak & Cook (2013) found that those in a resilient group of veterans scored higher on measures of extraversion than the less resilient group.

The final two psychological factors include flexibility and a sense of humour. Resilience has been referred to as a “type of plasticity or flexibility” (Ong & Bergeman, 2010) and flexibility has been termed the “essence of adaptability” (Earvolino-Ramirez, 2007). Being able to adapt to changing and challenging circumstances is a hallmark of resilience. Wagnild and Young (1990) note that the five themes of resilience exemplified by older women (perseverance, meaningfulness, self-reliance, existential aloneness, and equanimity) all contain processes of flexibility. Having a sense of humour is also thought to be important to the processes of resilience, as it allows for the experience of positive affect and helps put difficult events into perspective (Earvolino-Ramirez, 2007).

Healthy behaviours are also important antecedents to resilience, since they strengthen the mind and body, making an individual more capable of accessing resources during an experience of adversity. Such behaviours include physical activity, nutrition, and self-care (Clark et al, 2011; Jacelon, 1997). Physical activity is a well-documented strategy to enhance health, since it creates a reserve capacity for those facing physical challenges, as well as improves psychological functioning imperative for cognitive resilience (Clark et al, 2011; Wu et al, 2013). Nutrition is another factor which links physical resilience and psychological resilience, since a healthy diet will fortify the body and again build upon one’s reserve capacity, making one better able to face adversity (Clark et al., 2011). In a study of the correlation between resilience and health behaviours, it was found that resilient older adults were more likely to have a high consumption of fruit and vegetables and moderate to high physical activity levels (Perna et al., 2012). In a qualitative study, Felten (2000) found that self-care activities such as physical activity and not smoking or drinking were commonly cited as tools to promote resilience. Lastly, other self-care initiatives such as medication compliance and maintenance are positive factors that contribute to the possibility of resilience outcomes (Clark et al., 2011).

Related to healthy behaviours, physical health and physical resilience have also been viewed as protective mechanisms for general resilience and health (Wells, 2010). Lamond et al. (2008) found that physical health was correlated to resilience, however it was a less important component compared to psychological health and well-being in a sample of community dwelling older women. Physical resources also include genetic and neurochemical factors, such as neuropeptide Y, the hypothalamic pituitary adrenal axis, and the neural circuitry of reward and fear (Wu et al., 2013). The study of the neurobiology of resilience is an emerging topic in resilience research, and offers another layer of investigation to understand the expression of resilience outcomes.

Tangible individual resources that have been discussed in relation to resilience include financial, medical, and educational resources, as well as the clothing, food and shelter to meet ones basic needs (Runswick-Cole & Goodley, 2013). While financial stability has shown a protective effect on resilience, absolute measures of individual financial resources show a curvilinear effect, wherein too much money can be as detrimental as too little (Hildon et al., 2010; Wells, 2010). This interesting finding would benefit from further research to untangle the relationship between financial resources and resilience. Lastly, social integration is an individual resource which links an individual to their social resources. It refers to the degree of engagement in social activities and relationships, and the perception of being embedded in a social structure within which one identifies and has a social role (Janicki-Deverts & Cohen, 2011). Individuals with high social integration have a greater ability to access social resources, which are discussed next.

3.5.4. Social Resources

Social or interactional resources refer to the interpersonal resources that support resilience (Janssen et al., 2011). Several theoretical perspectives begin to explain this relationship. First, the convoy model is a social resource theory which posits that social relations enhance a person's ability to cope with and overcome adversity (Fuller-Iglesias et al., 2008). This theory is supported by numerous findings that link the presence of social ties to resilience (Fuller-Iglesias et al., 2008; Jopp & Rott, 2006; Netuveli et al., 2008). Another example is the social support resource theory (Hobfoll et al., 1990), which posits that social resources interact with personal resources to protect ones sense of coherence and promote resilience. The mechanisms that are proposed to link social

support to positive outcomes are the provision of information, encouragement of coping behaviours, enhancement of self-esteem and availability of instrumental support, which serve to buffer the experience of stress (Antonucci, 2001).

Different types of social relations have been identified to contribute to resilience. For example, in a study of older adults living in the community, Wiles et al. (2012) found that friends and neighbours were a significant source of support that was relied upon more than family. Conversely, Wells (2010) found that family, but not friends, were a significant predictor of resilience in community dwelling older adults. Generally however, studies have found that a mix of friends and family who offer a mix of emotional and instrumental support are predictive of resilient outcomes (Harris, 2008; Hildon et al., 2010; Alex, 2010; Wu et al., 2013).

Social resources have consistently been found to promote and predict resilience in older adults (Resnick, 2011). Positive relationships help individuals cope with loss, strengthen self-esteem and self-efficacy, and foster continuity of the self (Clark et al., 2011; Resnick, 2011). Social ties act by influencing emotions, thoughts and behaviours, which in turn impact mental and physical health (Janicki-Deverts & Cohen, 2011). Social resources encompass the provision of social support, including instrumental, emotional, and informational support. The efficacy of social support can be understood using the optimal fit or social support matching hypothesis (Colvin et al., 2004). This theory contends that improvements in well-being will only be realized if there is an appropriate match between the type of social support offered and type of support desired. Therefore, if emotional support is required, then an offer of instrumental support will not be seen as useful for promoting resilience. Research has shown that perceived social support has had a greater impact on positive outcomes than actual received support, which may be due to the offers of support not matching the individuals' needs, as per the social support matching hypothesis (Janicki-Deverts & Cohen, 2011).

Socioemotional selectivity theory also identifies the influence that social relationships have on resilience. It posits that older adults choose to maintain only those relationships which are emotionally gratifying to them, in a bid to optimize energy for social interaction (Mlinac et al., 2011). This theory reflects tenets of the developmental theory of selection, optimization and compensation, discussed within the processes of resilience. Hildon et al (2010) found support for the socioemotional selectivity theory.

They found that high quality relationships, support from family, close confiding relationships, a wide circle of family and friends, contact in the past week with family and friends, and integration with the community were assets available to resilient individuals. However, under adverse conditions, older adults preferred to maintain the high quality relationships rather than interact with a wide circle of family and friends.

The greatest support for classifying social resources as antecedent factors comes from Netuveli et al. (2008). In a longitudinal study, they found that social support before the onset of adversity was the greatest predictor of resilient outcomes in older adults. In their research, social support was measured as the availability of others who can provide help, comfort and appreciation, and who can be trusted. Their findings led them to conclude that resilience is a process wherein social goods are converted to good outcomes (Netuveli et al., 2008, p. 990). Resilience in their study was measured as improvement in General Health Questionnaire (GHQ-12) scores following adversity. Glymour et al (2008) also found that baseline social ties were predictive of cognitive recovery and resilience following a stroke.

Due to the positive findings linking social support and resilience, some researchers have proposed the creation of social support interventions to promote resilience (for example, see Janicki-Deverts & Cohen, 2011). Unfortunately, the evidence supporting these interventions has been weak, perhaps because contrived social ties do not provide the same effects as genuine social support. Further research is needed to explore how voluntary social support can be sustained to enhance resilience in a natural way. Janicki-Deverts & Cohen (2011) also suggest interventions that focus on recognizing the receipt of support prior to the onset of an illness, which may mitigate loss of self-esteem associated with receiving support, and identify avenues to reciprocate. This is valuable since the benefits of social relationships are bidirectional and mutually reinforcing (Kinsel, 2005). This means that receiving social support can boost resilience, and giving social support can also be a means of enhancing well-being and resilient outcomes (Sells et al., 2009). Giving support to others can be a means of supporting one's self esteem and identity by creating the perception of being needed and valued (Hutchinson & Nimrod, 2011). This was reinforced by research that identified prosocial behaviours, such as altruism, were associated with resilience (Wu et al., 2013).

3.5.5. Environmental Resources

Access to resources is governed not only by competence, but also by the availability and accessibility of resources as determined by the environment. The environment, encompassing social¹, cultural and physical aspects, plays a role in either facilitating or impeding resilience. Environmental resources support the individual and social resources discussed in previous sections (Netherland et al., 2011). From a socio-ecological perspective, environmental resources are equally as important as individual and social resources. Furthermore, an appropriate balance between individual abilities and environmental factors, or person-environment fit, is a key theory recurring throughout definitions of resilience. Ungar (2011) also indicated that the discrete resources of the individual and environment are less important than the interaction between resources in facilitating resilience. The importance of interaction is supported by findings that indicate that the social, cultural and economic resources are moderated by demographic variables such as gender, ethnicity and class (Clark et al., 2011).

As noted, environmental or contextual resources are comprised of the social, cultural and physical environment, including social policy, community level resilience, and features of the built environment. The World Health Organization has highlighted the role of high quality environments in contributing to global age-friendly cities. Factors include access to outdoor spaces and buildings, transportation, housing, respect and social inclusion, social participation, communication, and information, civic participation, employment, and community support and health services (Netherland et al., 2011). These criteria encompass a variety of environmental resources that are needed by all members of society to experience good quality of life, and should be further explored in relation to resilience and the experience of multiple morbidity.

Social capital, the environmental-level resource, has been applied to studies of community resilience to assess civic engagement, trust, and reciprocity within neighbourhoods to better understand the role of the environment (Wild et al., 2013). Zautra et al. (2010) found that neighbourhoods scoring higher in aspects of social capital

¹ Social resources can be considered an integral component of resilience at all levels of inquiry. Whereas social integration refers to an individual level resource, and social support is considered a social or relational resource, social capital is an environmental resource that combines social support and social network resources (Clark et al., 2011; Norris et al., 2011).

also showed greater stability and vitality under stressful conditions. Additionally, a stable and loving care-giving environment was also a key social environmental aspect for resilience in the dying process (Nakashima & Canda, 2005). This environment consisted of primary caregivers, family, friends, hospice workers, and other service providers. This intricate web of individuals indicated the need for diversity within a social network to ensure a person's social, emotional, mental and instrumental or physical needs were being met to maximize the potential for resilience.

The social environment also includes social policy. One example is policy that dictates access to healthcare services. For example, in Janssen et al. (2011), older adults who were identified as resilient reported that they had received the health and social services they needed. Empirical evidence has shown that resilience is fostered when there is adequate access to health care resources and a stable caring environment (Clark et al., 2011; Nakashima & Canda, 2005). In Canada, the "medicare" program has provided medically necessary care on the basis of need rather than the ability to pay since 1957 (Health Canada, n.d.). However, it does not necessarily cover all aspects of care needed to promote resilience (Penning et al., 2006). For example, there has been recent advocacy to create national mental health strategies and prescription medication strategies, areas which may be causes of concern for older adults, particularly those with multiple morbidity.

Social policies that support the participation of older adults as volunteers or activists in their communities have also been identified to promote resilience by enhancing civic engagement and feelings of connectedness (Morrow-Howell, 2011). Volunteerism has been shown in the literature to provide positive effects on mental health, self-esteem, and life satisfaction for older adults. There are three mechanisms by which volunteering is hypothesized to contribute to resilience. The first is by offering a valued role for older adults, which contributes to one's self esteem and continuity of identity. The second is by providing an avenue for creating and maintaining social relationships with people outside of the home. Third, volunteering can be seen as an active coping mechanism, allowing older adults to have a purpose and feel useful (Morrow-Howell, 2011).

Cultural environmental resources have also been identified to promote resilience. They may include the availability of culturally relevant services and programs within a

community, and the cultural congruence of social services and programs (Wild et al., 2013; Ungar, 2011). Wiles et al. (2012) reported that many of their study participants expressed gratitude for the local cultural community centre, which supported their social and physical needs. One institution that was often cited within the literature was the church or other religious holy place. While spirituality can be seen as an individual resource that helps older adults face adversity, religious institutions may provide environmental resources that promote resilience. They provide a physical space for the development of social connectedness and social capital. Crowther et al. (2002) also indicated that religious institutions may be a prime location for health promotion initiatives, since outreach to vulnerable populations is part of their role within a community.

Environmental resources in the physical or built environment can also contribute to resilience in older adults (Netherland et al., 2011; Resnick, 2011), however this area has received far less attention compared to social environmental resources. Basic considerations are that the environment is non-toxic and non-pathogenic (Stokols, 1992). Beyond that, it has been recognized that it may be less necessary to identify the actual physical components of an environment but rather to assess how an individual interacts with the components. A key theory to reflect on is person-environment fit, wherein the environment can support the optimal development of the individual by providing feelings of controllability and predictability as well as some novelty and challenge (Stokols, 1992). Resilience research therefore needs to expand to include a multi-level approach to capture environmental influences and interactions in relation to one's health (Masten, 2007).

3.6. Consequences of Resilience

The consequences of a concept are the events that happen proceeding the occurrence, or as a result of the concept (Rodgers, 2000). The consequences of resilience are the key outcomes that have been associated with the concept. These consequences reflect the purpose of resilience, which is to produce long term positive outcomes and improve quality of life. The connection between the processes of resilience and the eventual consequences was drawn from empirical research and theoretical influences, including developmental theory which identified the importance of

resilience in promoting future development. The three outcomes identified in the research encompassed wellness, recovery or “bouncing back” and growth/ development.

3.6.1. *Wellness as an Outcome of Resilience*

A key attribute of resilience is the consideration that one is “doing well” after the experience of adversity (Harris, 2008). Therefore, a critical consequence of resilience is a measurement of well-being, referred to here as wellness. Wellness is the process of achieving one’s potential, as defined by the individual, within a holistic view of human beings (McMahon & Fleury, 2012). This view of wellness is influenced by but is not dependent on objective health or illness. As noted in the introduction, older adults tend to describe their health as the ability to go and do meaningful activities (Bryant et al., 2001). This conceptualization of wellness incorporates a multi-domain, person-centred approach to well-being that reflects the perceptions of older adults. It can be visualized as a the integration of multiple dimensions of well-being in older adults, including psychological and emotional status, social relationships, physical and functional health (Cohen-Mansfield, 2011; Stokols, 1992). Wellness is the foundation for future positive growth and development.

Theories of well-being help define the outcomes of resilience. Subjective and psychological well-being are key components of quality of life (Higgs et al, 2003), and enhanced quality of life is an intended consequence of resilience (Hildon et al, 2010). Theories of subjective well-being consider happiness, or the judgement of greater positive affect compared to negative affect, to be an indicator of quality of life (Ong & Bergeman, 2004). Jopp & Rott (2006) used happiness as an outcome of resilient adaptation in centenarians. They found that self-referent beliefs and attitudes towards life had the greatest positive impact on happiness. Life satisfaction is also a component of subjective well-being (Ong & Bergeman, 2004). Themes of life satisfaction have manifest in qualitative studies of resilience in older adults (Alex, 2010; Janssen et al., 2011). Beutel et al. (2009) found that resilience, as measured by the Wagnild & Young Resilience Scale, was the strongest predictor of life satisfaction in men across all ages. This finding indicates the need to further scrutinize the contribution of resilience to the well-being paradox, wherein life satisfaction is maintained in the face of objective health crises (Windle et al., 2011).

The premise of psychological well-being is eudaimonism, or self-actualization, which is measured by self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy (Ong & Bergeman, 2004). Erikson's theory of the life cycle (Erikson, 1963) posits that it is the accumulation of wisdom and pursuit of self-actualization that is the basis of the resilient self (Windle et al., 2008). This view has been supported in research that correlates self-referent beliefs, such as self-esteem and self-efficacy, to individual resilience (Windle et al., 2008). Additionally, the theory of transcendence, and specifically gerotranscendence, entails a shift in preoccupation from the physical self to increased awareness of the mental self (Nygren et al., 2005). Lastly, psychological well-being can also refer to a lack of negative psychiatric outcomes, such as PTSD and GAD (Pietrzak & Cook, 2013). In the antecedent phase of resilience, adversity disrupts one's sense of well-being. Therefore, reintegrating psychological and subjective well-being is a key goal of resilience.

The maintenance of social relationships and adequate role function is another outcome associated with resilience (Norris et al., 2008). Zautra et al. (2010) defined this consequence as sustaining meaningful engagements, meaning that resilience allowed one to continue to function socially and be a part of a community in which they have a social role. Wellness also encompasses improved physical health and functional ability as possible outcomes of resilience. Additionally, Ong & Bergeman (2004) identified intraindividual trajectories of improved physical health and functional status to be consequences of resilience. Improvements in functional ability are significant because they have the potential to directly impact the degree of disability. This relates to feelings of control and autonomy, which have been associated with quality of life in older adults (Higgs et al., 2003). Autonomy and independence were outcomes of resilience identified in a qualitative study of resilient older adults (Alex, 2010), while independence in instrumental activities of daily living has been an outcome measured in a quantitative studies (ie. Hardy et al., 2004).

3.6.2. Recovery or “Bouncing Back” as an Outcome of Resilience

A critical consequence of resilience is recovery following a setback. Zautra et al. (2010) define resilience in part as the “speed and thoroughness of recovery”. Bouncing back is a common term used in the literature to portray positive adaptation as a key feature of resilience (Earvolino-Ramirez, 2007; Zautra et al., 2010). As noted in the

beginning, the root word of resilience is *resilire*: “to spring back”, which emphasizes the dynamic process of recovery (Resnick, 2011, p.199). In a stakeholder interview, Windle (2010) found that the term “bouncing back” provided useful imagery for practitioners engaging with the concept of resilience.

When considering recovery or bouncing back in the context of living with multiple chronic conditions, an outcome of resilience may be a degree of recovery, rather than returning to one’s original status (Hardy et al., 2004). It may also mean a full recovery in one aspect, such as a return to high psychological well-being, with concurrent partial recovery for physical resilience.

Resilience has been described as a two stage process, which is initiated by an acute or disruptive phase, and followed by recovery or reintegration of well-being and the self (Earvolino-Ramirez, 2007; Richardson, 2002; Kralik et al., 2006; Jacelon, 1997). Earvolino-Ramirez (2007) found rebounding and reintegration to be consequences of resilience. She compared the themes that she found in the literature to the Resilience Scale for Adults (RSA), and found that rebounding/reintegration corresponded with the personal competence subscale. Specifically, items such as “I know I will succeed if I carry on”, “No matter what happens I always find a solution”, and “I have realistic plans for the future” were seen to exemplify the attribute of bouncing back. Reintegration can also be described as re-centering, in which an adverse experience is incorporated into one’s sense of self, allowing the individual to display resilience (Rosowsky, 2011).

Ong et al (2006) used recovery from stress for the basis of daily diary studies involving older adults. They examined the mediating effect of emotion on next-day stress levels, and found that positive emotions could predict faster recovery from stress. Research on recovery following a stroke found that baseline emotional support helped individuals reach cognitive recovery within six months at a higher frequency than those without emotional support (Glymour et al, 2008). Importantly, recovery may not necessarily mean that one returns to their pre-adversity abilities, since in many cases when considering chronic illness this will not be a possibility. However, resilience can result in a recovery of some abilities, and promotes the adaptive capacity to strive to improve where possible.

Recovery or 'bouncing back' may occur gradually, or as a result of a turning point, or as a combination of the two. Bennet (2010) reanalyzed research on bereavement and widowhood to identify the temporal processes of resilience. For the men identified as resilient in her analysis, 13% demonstrated resilience throughout the grieving process which corresponds to Bonanno's (2004) conceptualization of resilience hallmarked by stability without decline. Another 39% achieved resilience gradually, while 35% attributed resilience to a "turning point". A final 13% demonstrated resilience as a combination of both turning points and gradual recovery. Examples of such turning points included dramatic events such as hospitalizations as well as smaller scale changes such as joining a local organization or club. Notably, an offer of support was a key factor in many of the men's turning points (Bennet, 2010).

3.6.3. *Development and Growth as an Outcome of Resilience*

An important consequence of resilience is the capacity for development and growth to occur following an adverse event. Development has been a difficult concept to define in late adulthood, as absolute indicators of development are not applicable to all older adults due to high heterogeneity in this population. Therefore, Leipold & Greve (2009) defined positive development as the maintenance of or enhanced possibility for continued future development. This broad definition also included an acknowledgement that there is a necessary degree of person-environment fit for successful outcomes. This definition has influenced the understanding of development throughout this report.

Short term processes of coping and adaptation, which are attributes of resilience, form the bridge that connects resilience to longer term outcomes of positive development. The developmental adaptation model (Martin & Martin, 2002) can also be used to visualize resilient development since it draws upon a number of variables associated with resilience. Key components in this model include individual, social and economic resources, behavioural skills and proximal events (ie. adversity). Additionally, it includes the influences of distal life events, such a previous trauma, and past personal achievements, which have been identified in the literature to contribute to resilience in later life (Martin et al., 2011).

Growth is a specific aspect of development that entails finding meaning, strengthening bonds, and gaining mastery (Zautra et al., 2010). Specifically, benefit-

finding has been reported as a tool used by individuals with chronic illness to learn from their illness experience and find meaning in suffering (Stewart & Yuen, 2011). Benefit-finding has been associated with better adjustment, lower morbidity over time and improved spiritual and mental well-being (Stewart & Yuen, 2011).

In the Georgia Centenarian Study, personality resources such as extraversion, competence and trust were specifically linked to successful adaptation in the growth aspect of psychological well-being (MacDonald & Cho, 2011). Similarly, Bauer & Park (2010) suggested that the growth narrative of resilience is associated more strongly with eudaimonic (psychological) well-being which incorporates the past (autobiographical memories), present and the future (personal goals) to achieve prosocial development. In Richardson's (2002) model of resilience, growth was included as a component of resilient reintegration. In his view, disruption is necessary to access latent human potential and create opportunities for growth. From this perspective, resilience goes beyond merely "bouncing back" and requires improvement in some capacity.

Long term physiological and psychological adjustment can be seen as development in chronically ill older adults (Janicki-Deverts & Cohen, 2011). Psychological adjustment can be identified as attenuated psychological distress and role dysfunction resulting from the diagnosis. Physiological adjustment is considered to be a slowed disease progression and lower disease related mortality (Janicki-Deverts & Cohen, 2011). For older adults and individuals facing chronic illness, loss management was also seen as a form of development (Staudinger et al., 1993). Stewart & Yuen (2011) reviewed resilience in physically ill individuals and found numerous accounts of chronically ill individuals reporting personal growth and positive change in light of their diagnosis. Furthermore, participants with HIV/AIDS have been cited to use their negative experiences as growth opportunities (Emlet et al., 2011).

The three consequences of resilience - wellness, recovery, and growth and development, are common goals across the lifespan. Through resilience, it is hoped that older adults with multiple morbidity will be able to attain these outcomes and enhance their quality of life.

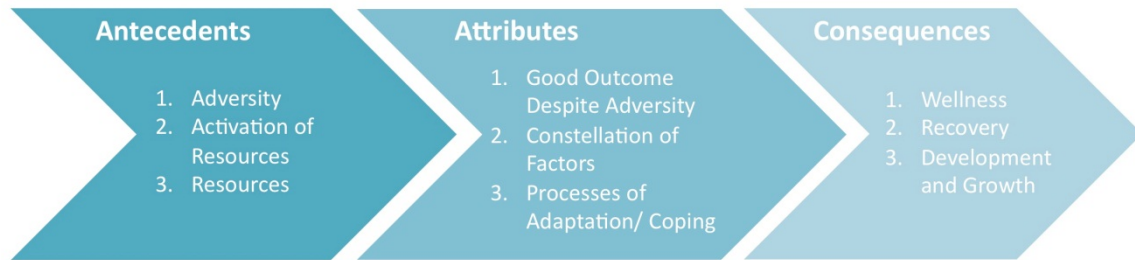


Figure 3.3 – Three Components of a Concept Applied to Resilience

3.7. Empirical Referents of Resilience

The empirical referents refer to the ways in which a concept has been measured (Walker & Avant, 1995). These include study design/method and specific measurement tools that have been used to capture resilience. Windle (2010) distinguished between two primary approaches in which research on resilience has been conducted. The first is a person-centred approach, wherein the key factors are assets or risks. This helps researchers classify individuals as resilient or not resilient, and discern differences between the two groups (Windle, 2010). Much of the research on older adults has used this method by applying a resilience scale to a sample and assessing the significant correlations with other variables. The other method is the variable approach, which can follow one of three models: compensatory, protective, or challenge. In a compensatory model, the goal is to uncover the main effects of risks or resources on the outcome. In the protective model, protective factors are thought to moderate the impact of a risk, and can also predict the direction of the intended outcome. These models were exemplified in Janicki-Deverts & Cohen’s (2011) discussion of social ties, wherein social support acted as a buffer for health (protective model) and social integration provided main effects on health (compensatory model). In the challenge model, the protective factor is assumed to take on a curved shape, wherein too much stress and too little stress lead to worse outcomes. Research on financial resources have demonstrated the challenge model, as it was found that being at the low and high end of the financial spectrum was related to less resilient outcomes (Hildon et al., 2010).

Within the literature there have been a number of measurement tools created that attempt to capture the concept of resilience. Each one is bound by its definition and conception of resilience. In a recent review of 19 resilience scales none reached the status of a “gold standard” for use in empirical research (Windle et al., 2011).

The first scale developed for older adults was the Resilience Scale (Wagnild & Young, 1993; Wagnild, 2009). Its creation was based on the assumption that resilience is an individual personality trait, and thus assesses the five themes of individual or dispositional resilience that Wagnild and Young discovered in their early research on community dwelling older women. In the initial creation of the Resilience Scale, Wagnild & Young (1990) used the Philadelphia Morale Scale to identify individuals with high morale or subjective well-being. They operationalized resilience as involvement in a local seniors centre, mid to high level of morale, and self-reported successful adjustment. A total of 24 women were included in the qualitative analysis, which uncovered the following five themes deemed to encapsulate resilience: equanimity, self-reliance, meaningfulness, perseverance and existential aloneness. In an exploratory factor analysis, the five themes were divided into two factors: personal competence and acceptance of life and self (Wagnild, 2009). Perhaps the most widely used scale (Windle et al, 2011), it has reported high internal consistency scores with alpha coefficients of 0.83-0.91, however factor analyses have found low loadings (>0.50) on at least 8 of the 25 factors (Resnick & Inguito, 2011). Within the literature, these personality characteristics have been used to predict life satisfaction (Beutel et al., 2010), and to compare resilience between urban, suburban and rural older adults (Wells, 2010). In a qualitative study with older adults in Sweden, those classified as highly resilient according to the Resilience Scale were reported to feel more connected, independent and to create meaning in their daily lives (Alex, 2010).

In critique, the scale is not responsive for differentiating individuals who have high resilience characteristics, although it is capable of identifying those low in resilience and can be used to target individuals for intervention. Fundamentally this scale is troublesome as it only assesses the personal characteristics of resilience, not accounting for relational, cultural or environmental aspects that greatly impact the expression of resilience. Therefore, it is considered a measure of dispositional resilience, not a measure of general resilience (Resnick & Inguito, 2011).

Another common resilience scale that has been used in studies with older adults has been the Connor Davidson Resilience Scale (CD-RISC). This is another tool that was developed from perspective that resilience is an individual resource, and was designed to measure stress coping ability (Windle et al, 2011). In its original application it was determined to contain five factors: personal competence, trust, tolerance and strengthening effects of stress, acceptance of change and secure relationships, control and spiritual influences (Connor & Davidson, 2003). Research with a group of older women revealed that although the overall scores were similar, the factors identified were somewhat different, indicating that there may be alternative pathways to resilience for older adults. The factors identified in the older age group included goal orientation, tenacity and personal control, negative affect adaptability, leadership, acting on a hunch and spiritual orientation (Lamond et al, 2009). The increased emphasis on acceptance and tolerance of negative affect may be a critical difference in the experience of resilience between younger and older individuals. The CD-RISC was evaluated in a review of resilience measures by Windle et al (2011), and was ranked among the highest in quality.

A scale measuring psychological resilience that was developed in adults aged 50-90 is the Psychological Resilience Scale (Windle, Woods & Markland, 2008). This scale has an alpha coefficient of 0.83, and as the name implies it is an individual-level measure of resilience focused on the psychological component. It is mentioned here because it was specifically developed with older adults. The scale has three dimensions, which include self esteem, personal competence and interpersonal control.

Measures of ego-resilience have also been used in the literature to assess the personality trait of resilience in older adults. Block & Kremen (1980) created the Ego Resilience Scale, a 14 item scale designed to assess adaptation in the face of threat (Baldwin et al., 2011). It was assessed to have an alpha coefficient between 0.72-0.77 (Ong & Bergeman, 2006), which therefore classifies it as having moderate internal consistency. Baldwin et al (2011) used the scale to compare resilience to optimism in African American older adults, and found that it was positively correlated with optimism and negatively correlated with distress.

Another scale that has been used with older adults is a resilience scale developed from the AHEAD resilience module (Soldo et al., 1997), based on Rowe &

Kahn's (1997) criteria for successful aging. The questions in the tool are based on the subjective experience of adversity, as well as recovery and long term consequences of the experience (Hardy et al., 2004). It is a short, 6 item questionnaire that includes the identification of adversity within its structure. The scale was found to have an alpha coefficient of 0.70, and a test-retest reliability of 0.57. Hardy et al. (2004) found that independence in instrumental activities of daily living, lower depression and good self-rated health were statistically significantly correlated with the scale. Moreover, the psychosocial components remained salient when controlling for the perceived stressfulness of the event. However, the scale was not adequate for differentiating between individual levels of resilience.

The Resilience Appraisal Scale has been used in research comparing younger and older adults (Gooding et al., 2012). It is a 12-item measure specifically for psychological resilience. The subscales relate to social support, emotional regulation, and problem solving, all of which are aptitudes noted to promote resilience. The alpha coefficient was 0.88 for the entire scale. In Gooding et al. (2012), results indicated that older adults were more resilient than their younger counterparts, specifically in the emotional regulation and problem solving subscales. This reflected similar findings from the CD-RISC measure (Lamond et al., 2009), and further supported the notion that emotions and emotional regulation are critical components for older adults to achieve resilience.

Other studies of resilience have used surrogate measures to identify the presence of resilience. These measures include depression and life satisfaction scales (Fuller-Iglesias et al., 2008), Rosenberg self-esteem scale (Collins & Smyer, 2005), the general health questionnaire (GHQ-12; Netuveli et al., 2008), mini mental health exam (MMSE; Jopp & Rott, 2006; Lou & Ng, 2012), post-traumatic stress disorder (PTSD) and generalized anxiety disorder (GAD; Pietrzak & Cook, 2013) and the CASP-19 (Hildon et al., 2008; 2010). These measures correspond with the expected outcomes or consequences of resilience, spanning wellness, recovery and growth. For example, Pietrzak & Cook (2013) measured PTSD and GAD in veterans, and operationalized resilience as low scores on these measures, indicating that resilient veterans were able to avoid pathological outcomes. Netuveli et al. (2008) used longitudinal changes in the GHQ-12 subsequent improvements in health following an adverse event. This study was

able to show the speed and thoroughness of recovery, which is an important consequence of resilience.

Not all studies have used specific measurement tools to identify resilience. For example, Moore & Stratton (2003) classified older widowers as resilient if they met the following criteria: viewed their current life positively, currently actively participating in life, have returned to a life of meaning, and were coping. The difficulty with these criteria is they are ambiguous and different interpretations of what each one entails may lead to reliability error. Another innovative approach to operationalizing resilience has been the Lifespace Analysis, used by Sawyer & Allman (2010) to measure mobility resilience in community dwelling older adults. An unrestricted lifespace meant a person was able to go and do what they wanted, which related to social participation and therefore resilience.

Overall, the different methods used to measure resilience have been insufficient in providing a general measure of resilience. Each one was found to be restricted to a particular domain, for example the first two scales calculated dispositional resilience while the final method revealed mobility resilience. The scales that did attempt to measure general resilience were useful to differentiate between groups, but not between individual levels of resilience. This may indicate that general resilience is too broad of a concept to reliably measure with one tool. Future research on measurement tool development was recommended by Windle et al. (2011), including more rigorous validation of measurement tools and their intended population groups.

Table 1 - Measurement Tools for Resilience

Tool Name	Author/s	Target Population	Dimensions	Pros/Cons	Psychometric Properties
Connor-Davidson Resilience Scale (CD-RISC)	Connor & Davidson (2003)	Adults (mean age 43.8)	(5) Personal competence, trust/tolerance/strengthening effect of stress, acceptance of change and secure relationships, control and spiritual influences	PROS: May assist in identifying resilience and quantifying change in resilience during therapy – intervention oriented. CONS: Considers resilience as a personality trait.	α coefficient = 0.90
The Resilience Scale	Wagnild & Young (1993)	Adults (Developed in older women)	(2) Personal Competence and Acceptance of Life and Self	PROS: Developed for older adults CONS: Construct validity challenged because the two dimensions may not be mutually exclusive.	α coefficient = 0.83-0.91
Psychological Resilience	Windle, Markland and Woods (2008)	Older adults (50-90 yr old)	(3) Self-esteem, personal competence, interpersonal control	PROS: Developed with older adults CONS: Only targets psychological resilience	α coefficient = 0.83
Ego Resiliency	Block & Kremen (1996)	Adults	(1) Ego Resilience	PROS: Successful adaptation to challenges or threats to their ego CONS: Resilience as a personality trait	α coefficient = 0.72-0.77
The Resilience Appraisal Scale	Johnson et al., 2010	Adults with suicidal ideation	(3) Emotional regulation, social support, problem solving	PROS: Tests for emotions/ emotional regulation. CONS: Not tested with older adults but the subscales are a good fit	α coefficient = 0.88 - 0.93
AHEAD Resilience module	Soldo et al., (1997); Rowe & Kahn (1997)	Oldest Old	(3) Low probability of disease and disability, high cognitive and physical capability, active engagement with life (ie. Successful Aging)	PROS: Includes measure of adversity, developed for older adults. CONS: Resilience as successful aging – not inclusive to older adults with multiple morbidity	α coefficient = 0.70

3.8. Concepts that are Similar or Related to Resilience

The final component of the conceptual and theoretical analysis is to identify similar and related concepts to resilience. This allows for the nuances of concepts to be separated from one another, further clarifying the specific qualities of resilience.

Resilience is frequently posed as the antithesis of vulnerability, stemming from early research which described children with positive outcomes as “invulnerable” (Luthar et al., 2000). The term invulnerability was abandoned since it implies risk evasion and a fixed state, whereas the concept of resilience is dynamic and situation dependent (Waller, 2001). Moreover, resilience is not the absence of vulnerability but rather the experience of it and development because of it. Rutter (2006) identified situations wherein resilience was developed through controlled exposure to a risk factor, rather than by avoiding it. Examples included exposure to pathogens in vaccines and exposure to a feared object to overcome phobias. Resilience can therefore be enhanced by the recognition of vulnerability, and by taking steps to build resources to overcome sources of vulnerability.

In recent conceptual analyses, hardiness was selected to demonstrate a similar but contrary example (Earvolino-Ramirez, 2007; Windle, 2011). Hardiness has comparable consequences to resilience, such as positive outcomes in the face of adversity. However, it is considered a stable personality trait, which resilience is not. Similar to invulnerability, hardiness has been conceptualized as a resistance to illness and adversity (Felten, 2000), whereas resilience requires the experience of adversity and includes recovery and in some cases improvement through adaptation and development (Earvolino-Ramirez, 2007). Therefore, hardiness can be considered an inflexible concept relative to the dynamic and contextual concept of resilience. Due to this difference, hardiness may be viewed as a pathway to resilience, since it can buffer against the negative impact of a stressor (Bonnano, 2004). Ong et al. (2009) included personal hardiness as a component of trait resilience, since it is considered a beneficial personality characteristic.

A third related concept is thriving, which encompasses a positive response to stress leading to enhanced mental, emotional or physical outcomes (Hardy et al., 2004).

Resilience, on the other hand, considers a broader range of possible outcomes, including recovery and reintegration with loss. Resilience also has the capacity to consider the severity of the adversity and the degree of recovery (Hardy et al., 2004). The focus on exclusively positive results limits the usefulness of the concept of thriving, however, it may be considered a component of resilience. Wild et al. (2013) described resilience as “thriving versus merely surviving”, indicating that it can be used within discussions of resilience, but is not a replacement for the diverse concept of resilience.

4. A Lifecourse Model of Resilience Applied to Multiple Morbidity

A goal of this project was to develop a model of resilience that reflected the tenets of resilience found in the conceptual and theoretical analysis. Furthermore, it was to build upon previous models that have not adequately addressed the interaction between the individual and their environment, nor the possibility of facing multiple challenges simultaneously (Richardson, 2002), which is a reality for many older adults. Therefore, the experience of multiple morbidity was included to ensure this model of resilience would be responsive to chronic and compounding types of adversity commonly faced in later life (Sells et al., 2009). This model was then used to identify avenues for future research and interventions for individuals facing the challenges of living well with multiple chronic conditions.

4.1. Development of the Lifecourse Model of Resilience

The development of the Lifecourse Model of Resilience was influenced by the conceptual and theoretical review of resilience, as well as previous models of resilience and models of chronic illness. The purpose of the model is to capture the multidimensional, dynamic nature of resilience in accordance with the conceptual and theoretical analysis within in the context of multiple morbidity and lifespan development. Therefore, the model of resilience that has been developed for this project has carefully considered the experience of multiple morbidity. Several models and theories of chronic illness were used to inform the development of the lifecourse model of resilience, and are explored briefly below.

A recurring theme throughout this project has been the disablement process described at the beginning of this project (Verbrugge & Jette, 1994). The disablement process has provided a means to understand the connection between a disease and its

potential impacts on an individual's daily life, via outcomes such as functional limitation and disability. Verbrugge & Jette (1994) described the onset of disability due to chronic illness in late adulthood to be "mild or moderate, initially restricted to a few activity domains but expanding overtime, and slow to accumulate." By understanding the onset and implications of chronic illness, the resilience model can be responsive to these factors.

To build on the disablement model, the experience of chronic illness and multiple morbidity has also been described as an ongoing and continually shifting process (Paterson, 2001), in which the structures of everyday life and knowledge are disrupted (Bury, 1982). Sells et al. (2009) described a theory of cascading crises that indicated that secondary diagnoses or other challenges that occur while an individual is already in a period of reorganization led to the experience of compounding adversity. They found that the trajectory of multiple chronic conditions typically followed a pattern of disrupted personal identity associated with multiple medical, emotional and social hardships followed by adaptation. A major theme in their research was loss, including the loss of valued roles, relationships and independence, and that a period of grieving may be necessary before the possibility of resilient outcomes. Furthermore, positive adaptation required effort and was supported by the giving and receiving of social support.

Additionally, Paterson (2001) outlined a model of chronic illness in which the perception of reality shaped how individuals responded to their illness, called the shifting perspective model. In the model, when illness is in the foreground an individual is absorbed by the sickness, suffering and loss that accompanies their condition. This perspective serves a protective and utilitarian function, as it allows the individual to conserve their energy and work towards having wellness in the foreground. Conversely, when wellness is in the foreground, individuals experience the opportunity for meaningful change, and create consonance between their self-concept and their identity as it has been shaped by disease. This perspective is associated with resilience, since one is able to focus on emotional, social and spiritual components and experience growth (Paterson, 2001).

4.2. Lifecourse Model of Resilience

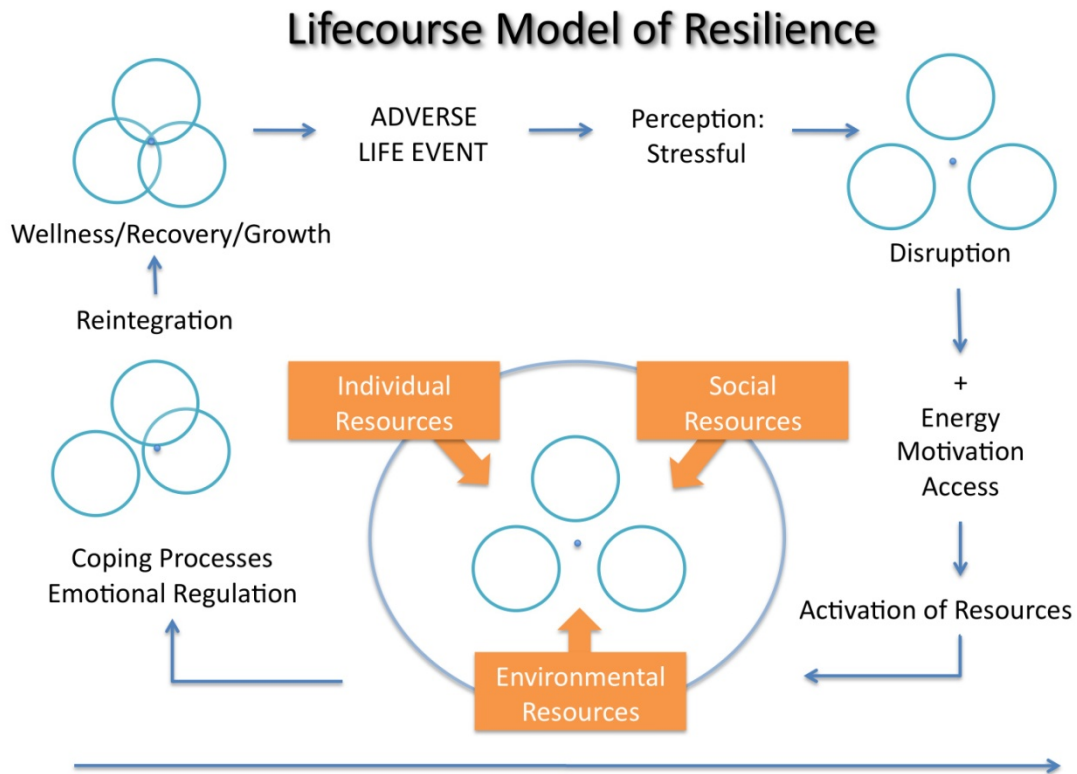


Figure 4.1 - Lifecourse Model of Resilience

This model builds upon previous resilience models and theories from the literature, and incorporates theoretical influences from stress and coping, development, and socioecological perspectives. Firstly, it positions the individual as a complex and multidimensional being, centered in a social and environmental context. The three overlapping circles in the top left corner represent a well-integrated individual, reflecting the biopsychospiritual homeostasis included in Richardson's (2002) model. It represents a sense of self or sense of coherence (Nygren et al., 2005) within the interaction between multiple individual, social and environmental domains associated with complex systems theory (Stokols, 1992). The integration is also symbolic of the concept of wellness (McMahon & Fleury, 2012) which is the process of achieving one's potential, as

defined by the individual, within a holistic view of human nature. When one is well, he/she is able to meaningfully engage in their lives, which is a central component of healthy aging (Bryant et al., 2001).

The model itself is cyclical, beginning and ending with an integrated concept of individual well-being. The first stage in the resilience process is the onset of adversity, which is the primary antecedent to resilience (Windle, 2010). For example, the onset of adversity could be the diagnosis of a chronic illness like arthritis. To this extent, the model borrows from stress theory, since reaction to adversity is the focus of stress research (Allen et al., 2011). This is called cognitive appraisal, wherein the decision is made regarding the stressfulness of a situation. In the disablement process, the degree of stressfulness would be linked to the degree of disability that the illness confers on one's daily life.

The cognitive appraisal of stressfulness and challenges that are faced due to pain and disability lead to the disruption of assumptions, behaviours, self-concept and explanatory systems (Bury, 1982). To summarize, Kralik et al. (2006) stated that "when a customary or familiar pattern of living is shattered by chronic illness, people feel fragmented", which captures this experience of disruption, denoted in the model by the three circles disconnecting in the upper right corner.

The second phase of the process is the activation of resources. To successfully overcome adversity, the individual must activate resources, which require motivation, energy and access (Resnick, 2011; Richardson, 2002; Sells et al., 2009). In reaction to chronic illness, the activation of resources may be internal or external. The internal activation of resources is an expression of agency – the individual exerts primary control by exploring environmental and social resources, and secondary control through the activation of individual resources (Heckhausen & Schulz, 1995). An external activation of resources may include support from a friend or family member, or the addition of hand rails in the washroom to facilitate independence. Additionally, the activation of resources is impacted by the availability of resources, meaning that no matter how much energy or motivation a person has, they cannot activate a resource they do not have access to.

The resources that a person mobilizes may be a combination of individual, social or environmental factors. The influence and interaction between these resources are a central component of this model, and are therefore represented in the middle of the diagram, with a circle denoting the interconnectedness of the different resources. An example of interaction between the domains was identified by Jopp & Rott (2006), who found that high self efficacy and personal control were related to mobilization of other resources, specifically social support. Ripple effects (Waller, 2001) or positive feedback loops also occur between the resources, fostering a positive spiral towards resilience.

Within this central sphere, the counteracting risk and vulnerability factors must also be acknowledged, which complicate and may delay resilient outcomes (Harris, 2008). The disablement process also includes exacerbators, which increase the chances of disease and subsequent disability. Risk factors are generally predisposing, sociodemographic factors, whereas exacerbators are actions and behaviours, and therefore may be modifiable (Verbrugge & Jette, 1994). As risk factors increase, the ability to rely on individual resources decreases, and social/environmental support becomes more important (Ungar, 2011).

The opposite of an exacerbator is an intervention. The activation of resources is an intervention that further engages the protective processes of coping and emotional regulation, which result in reintegration of a sense of self and ultimately positive adaptation. As the resources and processes work together, the individual progresses towards the consequences of resilience, which are wellness, recovery, growth and development.

Importantly, the reintegrated self is not a direct reflection of the original configuration. The elements may have recombined in a different order or with differing strengths. In this way, the model avoids judging the degree of reintegration as good or bad, but rather as a new whole. This is particularly important in chronic illness, where an individual may not recover, but may learn to function better with the illness as a result of resilience. They may also experience benefit-finding and post-traumatic growth, which are important consequences of resilience (Stewart & Yuen, 2011).

The line along the bottom of the model depicts the ongoing nature of these interactions and processes, and the lifespan approach used to conceptualize resilience. Although the model is organized as a cyclical and unidirectional, changes in a persons' situation, such as a secondary diagnosis, may cause further disruption before the person is able to fully reintegrate. In this way, an individual may not follow the components of the model in a linear manner, which reflects Sells et al. (2009) theory of cascading crises. Furthermore, each step of the model and the associated outcomes are involved in feedback loops which influence subsequent reactions to adversity, and affect multiple stages of the resilience process. For example, lessons learned from one experience of adversity may enable the development of coping skills needed for subsequent recovery.

4.3. Applying the Lifecourse Model of Resilience

The purpose of resilience research, especially from the second and third wave, has been to identify interventions and applications for the research findings to improve the health and well-being of various populations (Masten, 2007; Richardson, 2002). Using the lifecourse model of resilience as a guide, there are several areas of opportunity that may improve interventions and applications of resilience research in the future. A persona was developed to further explore how the model might be applied to promote resilience in an older adult facing multiple morbidity.

Case Example: “Mr. F” – Age: 75 years, Diagnoses: Hypertension, Diabetes and Chronic Kidney Disease requiring dialysis. Lives in his own home with his wife, and the closest care centre is 50 km away.

4.3.1. *Elements of an Intervention*

A key concern for effective interventions is to discern the critical elements (Luthar & Brown, 2007). Using the model to identify the components of resilience, there are four central elements that should be taken into consideration when developing an intervention. An effective intervention should consider the person foremost, and their unique situation. This includes evaluating their access to available resources, and the dynamic interactions between resources. Since the model of resilience is a process, interventions should align with the different processes of coping and adaptation that

contribute to the phenomenon. Lastly, the intervention should specify the outcomes desired.

As noted, the first is to take into account the unique attributes and context of the individual. It has consistently been identified in the literature that resilience is made up of a “constellation” of factors, and a person-centred approach to resilience would consider the nature of these factors. In this sense, it is also valuable to design and test interventions in real world scenarios (Luthar & Brown, 2007).

A large portion of the individual and contextual factors are resources. The centrality of resources within the model indicate that interventions to improve resilience will be largely impacted by the availability and accessibility of resources. The model further subdivides and gives equal weighting to individual, social and environmental resources, indicating the need for interventions to also consider all three resource domains.

To use this model in a practical application, an intervention could be used to identify and tailored to expand resources within domains of low perceived availability to enhance resilience. Alternatively, the model could be used to identify areas of individual strength to build upon. Participants in Nakashima & Canda (2005) used narrative techniques to identify sources of strength. This type of research could then reflect upon the model of resilience to support areas of strength and compensate for potential weaknesses.

Case Example: A resource analysis for Mr. F can be used to identify potential targets for an intervention. Examples of resources were drawn from the conceptual and theoretical analysis.		
	Strengths	Weaknesses
Individual	Optimistic Quit smoking 10 years ago Is financially stable	Low physical activity Low sense of purpose
Social	Support from wife Mix of visitors – family and neighbours	Does not feel like he has the opportunity to give support to others – feels dependent on others.
Environmental	Lives in an area with accessible local trails, low crime	Drives over 50 km to local care center for dialysis treatment daily

In addition to discovering the key resources, there is also a benefit to identifying barriers to resilience resources. This may be enabled by frameworks such as the candidacy framework, which has been applied to accessing medical resources (Dixon-Woods et al., 2006).

The third consideration that interventions must consider is the dynamic and process-oriented aspect of resilience. On the right hand side of the model, accessing and activating resources are key processes, while coping and adaptation appear on the left hand side. An intervention aimed to enhance resilience should consider the research associated with these processes, which have garnered more attention than specific resilience research alone.

Processes associated with resilience also include both internal and external components. Internal processes, or agency, include the development of self care behaviours such as increased physical activity and improved nutrition (Felton, 2000). For example, leisure time has been identified as a tool to manage difficulties and develop resilience (Hutchinson & Nimrod, 2012). In a study of older adults with chronic conditions, leisure was found to strengthen personal and social resources, and increase experiences of success, which had the potential to improve self esteem (Hutchison & Nimrod, 2012). By contrast, an external intervention may include modifying the home environment or the local government improving sidewalks in the neighbourhood. Exploring both internal and external modifications will result in a greater range of interventions, and can lead to a better person-environment fit (Verbrugge & Jette, 1994).

Other important considerations for interventions are to identify the interactions between resources, and whether there exists a hierarchy amongst types of resources. Interactions include cascading influences, whereby improving a resource in one area strengthens another resource. This can be seen as the antithesis to “cascading crisis” identified in the chronic illness experience by Sells et al. (2009). Facilitating positive resource cascades or spirals help move a person through adaptive coping processes, and build towards the consequences of resilience.

Case Example: In consideration of Mr. F's available resources and specific challenges, some potential interventions and their cascading interactions might be recommended:

1. Joining a support group. This may address gaps in resilience resources such as: improving his opportunity to offer support to others and learn how to cope with his illnesses. In turn, being able to provide support may influence his sense of purpose.

2. His health authority implements a program to provide at-home dialysis care and regular visits from a home health nurse. This would eliminate the daily commute for treatment, perhaps leading to more time for physical activities which would be beneficial for all three diagnoses and may help prevent future illnesses.

In terms of resource hierarchies, the current lifecourse model of resilience does not rate any one resource as more important than the next, however, if a hierarchy among resources were identified, an intervention could be targeted to ensure that an individual has the basic foundation from which to create resilience. The conceptual and theoretical analysis outlined a number of important resources identified in the literature that could be used to develop a resource hierarchy, and to further understand the relative contributions each resource makes to resilience. Additionally, the interactions between resources and risk factors, which are typically predisposing, sociodemographic factors including gender, culture and ethnicity, may impact the efficacy of an intervention (Ungar, 2011). Interactions between risks and resources are a noted priority for future research, to be discussed in the research agenda.

Lastly, the intervention should consider and specify the outcomes of resilience that it is targeting, whether it is an aspect of wellness, recovery, or growth/development. Although each category is not mutually exclusive, there may be subtle differences in how one would approach an intervention for wellness compared to growth. For example, an intervention that was interested in wellness alone would not focus as much attention on the potential meaning of the adverse experience, whereas an intervention focused on growth may neglect subjective well-being. Similarly, an intervention should specify which domain of resilience is being targeted to reduce ambiguity in the research.

Case Example: Potential outcomes related to the interventions:

1. Joining a support group. The group Mr. F joined was very philosophical and what he learned in the group gave him an opportunity to think about “larger than life” questions and come to terms with his own mortality. In this sense, he experienced growth from a psychological perspective of resilience. The group also enhanced his sense of purpose and therefore contributed to improved wellness.

2. His health authority implements a program to provide at-home dialysis care and regular visits from a home health nurse. This intervention improved Mr. F’s physical resilience since he gained a comprehensive care plan and now has more time to engage in physical activity. He has experienced the recovery of some functional abilities, making household activities like mowing the lawn more enjoyable.

4.3.2. Tailoring an Intervention

Once the core elements of an intervention have been identified, one can consider other aspects that the model exhibits that would be useful for tailoring an intervention.

Using the model as a guide, interventions can be targeted to the various phases of resilience. This recommendation draws from the transtheoretical model, which has been used to target interventions for individuals according to their readiness to change. Accordingly, an individual in the initial phases of disruption will require different support than someone who is actively coping and beginning to reintegrate. The model of resilience in chronic illness presented in Trivedi et al. (2011) also infers that interventions should be targeted to individuals who get “stuck” within the experience of adversity and are unable to independently reach resilient outcomes. This is referred to as tertiary resilience, and may require psychiatric interventions such as cognitive behavioural therapy or psychotropic medication (Trivedi et al., 2011).

In relation to the stage of resilience, it may also be prudent to target interventions according to the degree of adversity. It has been found that greater levels of adversity have resulted in fewer resilient outcomes (Nygren et al., 2005), indicating that interventions may be most beneficial for those experiencing high adversity. This also includes tailoring interventions to critical periods of adversity attributed to the onset of

chronic conditions. For example, this model indicates the non-linearity of the resilience process, and the potential for cascading crises to delay resilient outcomes. Interventions may focus on helping people manage multiple competing conditions, and work towards reintegrating and redefining themselves within the context of multiple morbidity. The conceptualization of the individual as a complex, interactive being (as represented by the overlapping circles) indicates that chronic illness may be a facet of an individual's life experience, but does not preclude him/her from attaining the outcomes of resilience.

Case Example: In the case of Mr. F, the first two chronic illnesses that he was diagnosed with (hypertension and diabetes) caused him some minor setbacks in terms of overall well-being. He made some adjustments in his dietary habits, and felt able to manage the stress of his conditions. However, the diagnosis of kidney disease came as a shock, and the major impact of daily dialysis caused a significant downturn in his ability to cope and maintain a sense of purpose in life. In order to recover with resilience to this third diagnosis, Mr. F had to expand his support system by joining a Kidney Foundation support group and was also fortunate to be supplied with an at-home dialysis solution.

4.3.3. *Expanding Beyond the Individual*

This model may also be applied to understanding community level resilience, with the multiple interacting circles representing the social, cultural, and physical components of our environments. Research on resilience to disasters has indicated the need for community competence and resilience in the face of natural occurrences and other destructive influences (Masten, 2007). The model could be applied in these larger scale demands for resilience, wherein the same pattern could be followed as in individual resilience. Applying resilience to larger regional, national and international contexts is a growing area of research (Wild et al., 2013). Community wide interventions on resilience will benefit from a better understanding of individual resilience, and will also contribute to the multi-level inquiries of the fourth wave of resilience research.

5. Discussion

Five key themes emerged from the literature throughout the course of this project. The first was that resilience is a cyclical, developmental process. It was also acknowledged to have a dynamic quality, which was a characteristic that influenced the measurement of the concept in research. There were a number of different domains of resilience, which may or may not be captured within an umbrella of general resilience. The challenge of defining positive adaptation for older adults was encountered, and lastly, the discussion returns to the relationship between disablement and resilience, and what has been learned about this relationship through this project.

1. Resilience was noted to be a cyclical, developmental process, whereby the outcomes of one occurrence of resilience impacted future reactions to adversity. The cyclical nature of resilience was demonstrated in the lifecourse model of resilience above. Previous experiences connect the outcomes of resilience to future perceptions of adversity, the ability to activate resources, and also to the availability of resources and coping mechanisms. The feedback loops also create ripple effects between and among resources, generating additional positive outcomes and possibilities for resilience. These influences are incorporated into the individual's resilience repertoire, and the outcomes of previous experiences therefore influence current behaviours and beliefs.

This cyclical process also means that over the lifespan the diversity in experience increases, resulting in heterogeneous life histories. Due to this heterogeneity, it has been argued that intraindividual changes in resilience are more important and more significant than differences between people (Lamond et al., 2009). This intraindividual approach is also more reflective of the desire to provide person-centered care for individuals with multiple chronic conditions (AGS Expert Panel, 2012). The heterogeneity in pathways to resilience identified in a lifespan approach indicate the multidimensionality and diversity of experience related to resilience, further discouraging

a “one-size fits all” method to promoting resilience. Understanding resilience from a lifespan development model also challenges the innate, or trait-based view of resilience.

The cyclical nature of resilience can thus be understood as a component of the maturation hypothesis, in which the ability to activate resources and engage in coping processes develops over time and through previous experience (Elmore et al., 2011). It has been posited that older adults are more adept in selecting and utilizing coping strategies because they are more mature and have had more time and experiences to develop resilience (Elmore et al., 2011; Richardson, 2002). This also aligns with Richardson’s (2002) argument that resilience can only be developed as a result of the experience of adversity over time.

2. Another theme that recurred throughout this project has been that resilience is dynamic. Despite the widespread acknowledgement of the dynamic nature of the concept, resilience continues to be studied using cross-sectional designs that evaluate participants as either resilient or non-resilient at one point in time. The outcomes of these studies are therefore highly dependent on the time frame of the sampling. As Bennet (2010) noted, some people are resilient to a particular adversity soon after the event, whereas others take longer. The model of resilience in chronic illness (Trivedi et al., 2011) also indicated that there may be a variable time span in the attainment of resilience.

Therefore, resilience researchers need to determine how long after an event resilience can be said to have taken place. Zautra et al (2010) included the swiftness and thoroughness of the recovery as a reflection of resilience, and therefore advocated for a short time lapse. By contrast, psychologist George Vaillant is quoted to have said “Call no man happy until he dies” (Seligman & Csikszentmihalyi, 2000), a sentiment that reflects the dynamism of subjective well-being, and the necessity of taking a lifespan approach when investigating psychological outcomes. This quote summarizes the challenge of measuring resilience, since it highlights the ever-changing nature of human existence.

3. The concept is comprised of a number of different domains of resilience, such as physiological, emotional, and spiritual resilience (Allen et al., 2011). The general

essence of resilience that has been portrayed in this paper attempts to encompass all different types of resilience, however it has mainly been influenced by psychological theories and conceptualizations of resilience. This is due to an emphasis on psychological resilience and the neglect of physical, community and other forms of resilience in the literature (Wild et al., 2013).

While it is unclear whether or not there can be a measure of general resilience, Wild et al. (2013) recommended that researchers be specific about the domain of resilience that is the focus of research, and not presume psychological resilience to be equated to general resilience.

4. There is a challenge in defining and measuring positive adaptation in older adults, especially those with multiple chronic conditions. Positive adaptation at younger ages has been defined by developmentally appropriate standards against which individuals are compared. At older ages, these developmental milestones can be non-existent or less applicable, due to the high variability and heterogeneity in life experiences, as discussed previously. The solution adopted for this project was to understand positive adaptation as a function of the person and their unique strengths or challenges interacting with the environment, and dependent on the constrained availability or accessibility of resources (Ungar, 2011). Consistent with the definition of healthy aging supplied by older adults outlined at the beginning of the paper, positive adaptation is also associated with the construction of meaning over time. This understanding of adaptation is also supported by the definition of development supplied by Leipold & Greve (2009), which simply states that successful development is any reaction that maintains or enhances future or further development.

By conceptualizing development and adaptation as an individually defined interaction between the person, the environment and resources, this project was able to be inclusive of resilience in older adults with multiple chronic conditions. An alternative approach that would have been exclusive to older adults with multiple morbidity would have been to use the “successful aging” perspective defined by Rowe & Kahn (1997). Since a cornerstone of their definition of successful development is having a low probability of disease or disease-related disability, an individual with a chronic illness would be precluded from achieving “success”.

5. The disablement process and resilience. The disablement process was used in this paper to separate the physical and functional impairments of the chronically ill body from the social constraints of disability. By taking a socioecological approach to both disability and resilience, a number of possibilities for intervention were identified. Resilience focuses attention on strengths and potential, and therefore challenges the direct pathway from pathology to disability. The role of resilience in the disablement process is therefore to examine the assumption that illness equates to disability, and instead to explore the possibility that the activation of resources and coping processes can result in wellness, growth and development even in the face of significant daily challenges.

Resilience itself can be thought of as an intervention between pathology and disability. In the disablement process, a chronic illness results in disability when there is incompatibility between the capacity of the individual and the demands of the environment (Verbrugge & Jette, 1994). By engaging in the process of resilience, individuals may be able to identify the resource(s) they need, be it individual, social or environmental, to mitigate the impact of an impairment on their ability to “go and do” meaningful activities.

5.1. Gaps and Opportunities for Future Research

Gaps and opportunities for future research were identified through the process of the conceptual and theoretical analysis, and with the development of the lifecourse model of resilience. Overall, it is recommended that there be more research into resilience in older adults, as research on this population lags behind the prolific body of research on children and adolescents (Wild et al., 2013). Additionally, research that considers multiple morbidity and aging will be useful as more older adults face the challenges of achieving a higher quality of life while living with chronic illness. The slow, progressive nature of chronic illness provides a dynamic context from which to study resilience, since individuals are struggling with both daily stressors and acute exacerbators. Three areas to guide future research are outlined below.

5.1.1. Interventions for Resilience

As noted in the discussion of the lifecourse model of resilience and in previous research (ie. Richardson, 2002), one of the purposes of studying resilience is to develop and improve possible interventions to enhance resilience and increase the probability of achieving wellness, recovery and growth. To summarize the opportunities identified by the potential application of the lifecourse model of resilience, interventions should be studied in real-world scenarios, with attention paid to contextual factors such as culture, ethnicity, gender, age, financial stability, and of course multiple morbidity. Interventions can learn from research on other processes associated with resilience, and will be improved if the outcomes of resilience are specified. Interventions will also be enhanced by identifying and targeting stages of the resilience process, studying the speed of recovery, and the degree of adversity being faced.

There is a noted lack of peer-reviewed studies that have considered interventions for resilience research (Windle, 2012). Furthermore, there is a lack of longitudinal studies that test resilience promotion along with risk reduction in real world scenarios (Tusaie & Dyer, 2004). One approach that has gained some attention has been mindfulness training (Zautra et al., 2004), or mindfulness-based stress reduction (MBSR; Trivedi et al., 2011). In this research, participants in the mindfulness group were found to be less reactive to stress and less prone to respond to pain by “catastrophizing” (Zautra et al., 2004). It was interpreted that the improvements in emotional regulation led to enhanced capacity for resilience.

A challenge for studying resilience interventions will be to incorporate multiple levels of inquiry, and to assess how the different levels interact with one another to promote or perhaps inadvertently detract from resilience (Masten, 2007). Another aspect of this is to assess how the internal activation of resources impacts resilience differently than external offers of support or intervention. Enhancing resilience in older adults with multiple chronic conditions may draw on the disablement process to target the socioecological factors that result in disability. However, while identifying and mitigating weaknesses may facilitate resilience, any approach should also include opportunities to build upon the positive aspects of a persons life, thereby reflecting the strengths perspective and honouring the goal of resilience.

5.1.2. Longitudinal Study Designs for Resilience Research

One of the most pressing issues for research in resilience is to gain a better understanding of the interactive processes of resilience (Masten, 2007). This requires the implementation of longitudinal, mixed methods approaches to account for the dynamic and complex phenomena associated with resilience. A longitudinal study design can assess the changes in resilience over time, and will also offer greater information on changes in influential factors such as risk, resources, and adversity (Waller, 2001). An opportunity for future research using this approach may draw from Bennet's (2010) study of resilience in older widowers, which lay the groundwork for discovering multiple temporal pathways to resilience. Research of this nature may also be able to determine whether there are stages in the resilience process, and how interventions may be targeted to individuals based on their stage in the process, similar to a transtheoretical or stage of change model discussed previously.

Longitudinal research would also enable the study of the compounding impacts of multiple morbidity over time, which as noted can pose a threat to resilient outcomes. Following a chronic illness trajectory prospectively from the onset of the first diagnosis through accumulating multiple morbidities and the associated changes in resilience could offer valuable insight to the processes of resilience. This approach would also enable the verification of consequences of resilience, and to explore what the outcomes of wellness, recovery, growth and development mean to someone with multiple morbidities. The study of resilience in chronic illness may also seek to identify the common periods of decline in resilience, indicating beneficial opportunities for intervention. For example, it would be useful to determine whether there are significant declines in resilience upon diagnosis, during aggressive treatment, or during other stressful life events such as the death of a spouse. The potential for multiple challenges throughout the chronic illness trajectory has been documented by Sells et al. (2009) as "cascading crises", wherein a secondary adversity may occur before an individual adapts to the first crisis situation. Identification of these vulnerable periods within the chronic illness experience may help guide interventions to enhance resilience.

A longitudinal exploration would also benefit from a historical lifespan approach, which would account for distal or historical influences on current reactions to adversity

(Martin et al., 2011; Pietrzak & Cook, 2013). Gooding et al. (2012) advocated for an examination of protective factors prior to the onset of the current adverse situation to further understand individual variability, and Rutter (2006) noted that resilience may derive from factors that confer risk in the absence of adversity. The variation in historical and individual influences indicate the complexity of antecedent factors that remains to be explored. It has been hypothesized that historical experiences of resilience will positively influence subsequent competence in adversity, however since the majority of research has been cross-sectional this has not been proven (Windle, 2010). This approach would confirm whether there is a correlation between resilience at different time periods, and indicate the relative stability of the construct over time (Cicchetti, 2010). When considering multiple morbidity, this approach would also identify whether previous experiences with chronic illness increase the probability of resilience in response to a secondary diagnosis, and under what circumstances the secondary diagnosis results in a further disruption rather than resilience.

Documenting patterns of resilience is another application of longitudinal research of resilience in older adults. These patterns become more meaningful as contextual elements are embedded within the research, clarifying the cultural, social and environmental circumstances within which resilience is most common. Additionally, longitudinal research would be enhanced by a mixed method approach. A number of researchers have advocated for increased inclusion of qualitative methods to grasp the complexity of the concept (Alex, 2010; Hildon et al., 2010). For the same reason, subjective narrative accounts have also been advocated to address the dynamic and individual experience of resilience (Waller, 2001). Using this approach, an exploration of resilience in multiple morbidity can be used to gain contextual information, and perhaps identify components of resilience that have not been previously explored by researchers.

5.1.3. *Expanding the Knowledge of Resources for Resilience*

Resources are a key component of resilience. The resources and adaptive processes identified in this analysis indicate “hot spots” (Masten, 2007) from which to focus future research endeavours and multi-level analyses. These hot spots also illuminate areas that are lacking in research. More research is needed into how social and environmental resources facilitate resilience. Compared to research on younger

populations, there is relatively little research on the external sources of resilience in older adults (Luthar & Brown, 2007). In particular, there has been a noted lack of research on environmental factors (Waller, 2001). For example, research on children has incorporated family dynamics and influences from institutional environments (ie. schools), whereas research on older adults has tended to focus on personal characteristics alone (Windle, 2010). Key priority areas include identifying how the resources in the social and environmental domains are accessed, barriers to accessibility, and how social policies enhance or detract from resilience. Specifically, there needs to be greater attention paid to the social determinants of resilience, just as there is increasing awareness of the social determinants of health. As Ungar (2011) noted, as adversity increases, individuals are less able to rely on their personal resources and become more dependent on social and environmental resources. It is therefore imperative to understand how these resources can be best implemented to achieve greater levels of resilience.

As the focus of research is expanded to include external factors, there is also a pressing need to incorporate a better understanding of biological factors that influence or are influenced by resilience. Early researchers indicated the potential for genetic and epigenetic biological factors to be implicated in the expression of resilience. However, the available technology was insufficient to test the hypotheses and research was thus heavily influenced by behavioural methods popular at that time (Masten, 2007). There still remains a noted lack of research on the biological mechanisms related to resilience (Windle, 2010; Wu et al., 2013). Research should seek to further link biological factors and functions to other levels in the multilevel model of resilience. For example, how emotional regulation is linked to neurobiological factors such as hypothalamic-pituitary activity, and how this in turn impacts behaviour (Luthar & Brown, 2007). Other research questions that explore the gene x environment interactions seek to identify how good genes protect against bad environments, and how good environments can buffer bad genes (Rutter, 2006). This line of research will also become increasingly relevant for multiple morbidity researchers, as biological links between comorbidities are discovered.

Another key area for future research concerning resources is to gain a better understanding of how resources interact with each other across domains and between systemic levels (Masten, 2007). It may be useful to conduct an analysis of the relative

contribution of resources, and whether there is a hierarchical structure to resources. These analyses would need to include the circumstances a particular resource is most successful. There may be certain resources that are pre-requisites for the attainment of other resources, or act synergistically to promote resilience. The relationships between resources may be additive or multiplicative. An important consideration is how to initiate an “upward spiral” towards resilient outcomes by providing access to external resources, and how external resources, which can be manipulated, bolster internal resources to ultimately result in resilience.

Resources also need to be further investigated in the context and interplay of risk. Resources are typically expected to act as protective factors, supporting the possibility for resilient outcomes. However, under certain circumstances a typically protective factor may react as a risk factor and contribute to further vulnerability. For example, research that has studied psychological well-being in later life has identified an interaction between extraversion and social support. In general, extraversion has been found to be a positive individual resource. However, in conditions of low social support, individuals with high extraversion fared worse than their low extraversion counter-parts. Therefore, in certain conditions, extraversion is a risk factor rather than a protective factor (McHugh & Lawlor, 2012).

Considering the opposing effects a factor may cause may also be related to the dose response (Tusaie & Dyer, 2004). For instance, physical activity is a powerful health promotion tool, but in too great of a dose it can negatively impact a persons health. Further research into the optimal amount of a given resource should reflect the consideration of dose-responses, as well as the competence-press model. Resilience may be hindered by an over-supportive environment, which contributes to the call for attention to the unique individual context of resilience.

6. Constraints and Limitations

The study of resilience has been influenced by cultural and historical biases, and this paper is not immune to these influences. In particular, there has been criticism for the emphasis on Western-centric values such as self-efficacy, mastery and control (Fry & Debats, 2010). Because the extant literature has been prominently based in Western culture, this report has been biased by these factors. There are also noticeable biases in the type of resilience that has been focused on in this report. Psychological resilience is more prominent than other forms of resilience, which as noted above is partially due to the lack of research in other domains of resilience.

As the opportunities and possibilities of resilience continue to be explored, it is also important to identify the limitations of the concept (Rutter, 2006). Some researchers have observed that higher levels of adversity resulted in a lower likelihood of resilient outcomes (Hildon et al., 2010). This may be due to a lack of understanding of how social and environmental resources can be activated to offset decreases in individual competence. Examining research from a lifespan approach has also revealed that resilience may be limited by damage to neural structures and constrained by biological programming (Rutter, 2006). These studies indicate the importance of studying neural plasticity and adaptation across the lifecourse.

Furthermore, there are gaps in our understanding of how resilience can be improved, and to what extent it can be taught. Kralik et al. (2006) argue that it can be fostered through social learning and modeling, while Janicki-Deverts & Cohen (2011) have noted few results in research that has attempted to bolster resilience through artificial social support. According to socioecological theory there is value in approaching this concern both by improving individual competence and by enhancing environmental compatibility to ultimately foster resilience. Another practical limitation of the study of resilience is the lack of measurement tools that are able to clearly measure resilience (Windle et al., 2011), and a lack of methodology and rigour in interdisciplinary studies

(Luthar & Brown, 2007). As noted, the multiple domains of resilience may be better studied independently than under the umbrella of general resilience.

Another concern that has been raised about the discourse of resilience is that it continues to valorize successful aging and positive outcomes, at the risk of ignoring or minimizing the reality of pain and suffering (Morell, 2003). This concern is partially addressed by including the possibility of growth and development as consequences of resilience, and by defining wellness as a personally meaningful holistic representation of health that may include chronic illness and suffering. This also indicates that the “innateness” of resilience should be questioned in future research (Luthar & Brown, 2007), since it blinds us to the dynamic and contextual facets of the concept.

Lastly, the framework for the concept analysis required the categorization of factors into attributes, antecedents and consequences. These categories are somewhat arbitrary, and therefore influenced by my own interpretation and understanding. Additionally, much of the literature was not longitudinal in nature, making it difficult to ascertain whether the consequences were outcomes of resilience or if they caused resilience. Longitudinal studies using a resilience framework focused on the attributes, antecedents and consequences of resilience would enhance the understanding of the direction of influence.

7. Conclusion

This project has contributed to the literature through the creation of a conceptual and theoretical review of resilience in the context of multiple chronic conditions. This has allowed for the exploration and integration of research on resilience, aging, and multiple morbidities. It has also led to the creation of a model of resilience across the life course, which offers a visual representation linking aspects of the research, and to the identification of opportunities and directions for future research.

The conceptual and theoretical review identified three valuable consequences of resilience which reinforce the importance and the purpose of the concept. These include the outcomes of wellness, recovery, and growth/ development. These factors relate to subjective and psychological well-being and quality of life, and affirm that efforts towards improving and supporting resilience have the potential to impact meaningfully on the lives of older adults, including those struggling with multiple chronic conditions.

These accomplishments are anticipated to provide rationale for future research in the area of resilience, particularly with reference to older adults facing chronic conditions. The project has articulated some of the gaps in the current literature, and outlined ideas for future research. Many of these recommendations were driven by the lifecourse model of resilience, which was used to identify opportunities and considerations for future interventions to promote resilience. Continued research into the multidimensional, dynamic concept of resilience has the potential to uncover exciting new ways to approach living well with multiple morbidities. The positive perspective and hope that resilience offers as a strategy to living and aging well is a primary reason to continue to explore factors that lead to resilience. It is also a reason to test and improve interventions that target resilience, diminish disability, and study how it can be fostered in individuals, communities and beyond.

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