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Examining the Roles of Life Satisfaction, Meaning in Life, and Daily Hassles in Predicting Suicide Ideation Among Community-Residing Older Adults

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Epidemiology and Biostatistics

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EXAMINING THE ROLES OF LIFE SATISFACTION, MEANING IN LIFE, AND
DAILY HASSLES IN PREDICTING SUICIDE IDEATION AMONG COMMUNITY-
RESIDING OLDER ADULTS

(Thesis format: Monograph)

by

Orsolya Gyorgy

Graduate Program in Epidemiology and Biostatistics

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science

The School of Graduate and Postdoctoral Studies
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Abstract

Research is needed testing models that potentially promote psychological well-being and reduce suicide risk in later life (Heisel, 2006). In the present study, we tested Shmotkin (2005) and Shrira's (2011) theory proposing that subjective well-being and meaning in life serve unique as well as interrelated roles in promoting psychological functioning in the face of adversity. We specifically investigated whether life satisfaction and meaning in life are more strongly inter-correlated in the presence of daily hassles, and tested the premise that when either life satisfaction or meaning in life is low, the other variable is more strongly associated with suicide ideation, especially among those reporting greater adversity. The present analyses included findings from 126 community-residing older adults (mean age = 74.5 years, SD = 6.0, including 92 women). We employed multiple linear regression analyses to investigate cross-sectional associations among life satisfaction, meaning in life, daily hassles and suicide ideation. Consistent with previous findings, suicide ideation was significantly negatively associated with life satisfaction and meaning in life, and positively associated with depressive symptom severity and frequency of daily hassles. Although findings from this study did not support Shmotkin (2005) and Shrira's (2011) theory, life satisfaction and meaning in life each remained robust predictors of suicide ideation, even after controlling for depressive symptom severity and daily hassles. These positive factors may be potent indicators of psychological resilience and well-being and may serve as potential targets for suicide risk assessment and intervention among community-residing older adults.

Keywords

Older adults, suicide ideation, life satisfaction, satisfaction with life, subjective well-being, meaning in life, adversity, daily hassles

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List of Abbreviations

CI	Confidence Interval
DH	Daily Hassles Scale
EMIL	Experienced Meaning in Life Scale
GDS	Geriatric Depression Scale
GSIS	Geriatric Suicide Ideation Scale
HRS-D	Hamilton Rating Scale for Depression
HWS	Hostile-World Scenario
IPT	Interpersonal Psychotherapy
LEP	Life Events Profile
M	Mean
MCGP	Meaning Centered Group Psychotherapy
MIL	Meaning in Life
MMSE	Mini Mental State Examination
SD	Standard Deviation
SDS	Self-Rating Depression Scale
SGP	Supportive Group Psychotherapy
SLEP	Short Life Events Profile
SPSS	Statistical Package for the Social Sciences
SSI	Scale for Suicide Ideation

SWB	Subjective Well-Being
SWLS	Satisfaction with Life Scale
WHO	World Health Organization

List of Terms

Death by suicide: According to Sommer-Rotenberg (1998), terms related to suicide such as “attempt” or “commit”, although commonly heard, may be erroneous to use as they evoke connotations of criminality, which in turn may stigmatize individuals touched by suicide. Others have also argued that the term “completed suicide” may suggest a sense of incompleteness to someone engaging in non-lethal suicidal behaviour, which can imply a destructive message (Sommer-Rotenberg, 1998). Similarly, the term “successful suicide” may imply that those who survived non-lethal behaviours may have somehow failed (Sommer-Rotenberg, 1998). Furthermore, using the term “success” also ignores the fact that many individuals are ambivalent when contemplating suicide and suggests that they are not conflicted about dying (Sommer-Rotenberg, 1998). As a result, the current thesis will use the term “death by suicide”.

Older adult: In this thesis, an older adult is defined as an individual who is 65 years of age or older.

Suicidality: “A spectrum of activities related to thoughts and behaviours that include suicide thinking, suicide attempts, and death by suicide” (U.S. Department of Health and Human Services, 2001)

Suicide Ideation: According to O’Carroll and colleagues (1996), suicide ideation can be defined as “any self-reported thoughts of engaging in suicide-related behavior”.

Suicide-Related Behaviour: “Potentially self-injurious behaviour with a nonfatal outcome, for which there is evidence (either explicit or implicit) that the person intended at some level to kill himself/herself” (O’Carroll et al., 1996). A more recent definition of suicide-related behaviour also includes evidence where “the person wished to use the appearance of intending to kill himself/herself in order to attain some other end” (Silverman et al., 2007). This definition of suicidal behaviour uses the term “potentially self-injurious”, highlighting the fact that not all behaviours result in injury (O’Carroll et al., 1996). The term “suicidal behaviour” is a preferred phrase over others such as “attempted suicide” or “suicide attempt”, as the latter two can have underlying negative connotations that may perpetuate the stigma of suicide (Canadian Coalition for Seniors’ Mental Health, 2006).

Chapter 1

1 Introduction

Suicide is a global public health problem, claiming roughly 800,000 lives every year (WHO, 2014a; WHO, 2014b). The World Health Organization (WHO) has reported that suicide rates are highest among older adults worldwide (WHO, 2014c). In 2011, 517 older adults died by suicide in Canada, comprising 408 (78.9%) men and 109 (21.1%) women (Statistics Canada, 2014d). The high risk of suicide among older adults, coupled with the aging of the historically large baby boom cohort, suggests that suicide will continue to be a substantial problem in Canada for decades to come (CCSMH, 2006; Statistics Canada, 2014a).

A body of literature exists that supports the associations between late-life suicide ideation and various risk factors including depression and hopelessness (Heisel & Flett, 2014). Yet it is increasingly recognized that the study of risk factors, in conjunction with resilience factors, may in fact provide an enhanced understanding of processes that reduce or increase the risk of late-life suicide (Heisel & Flett, 2014). Theory has suggested that subjective well-being and meaning in life are two adaptive processes that may confer resilience to suicide in older adults (Heisel & Flett, 2008). Life satisfaction refers to the cognitive component of subjective well-being and is a common psychosocial indicator used to assess the mental health state of individuals (Bray & Gunnell, 2006). Although earlier work has shown robust associations between life satisfaction and suicide ideation, the nature of this relation is not clear. Shmotkin (2005) and Shrira and colleagues (2011) have theorized that life satisfaction may function in conjunction with meaning in life in order to help individuals maintain functioning in times of adversity. This thesis will test this theory by assessing the manner in which life satisfaction, meaning in life, daily hassles and suicide ideation may be associated in a sample of community-residing older adults. By attempting to understand how subjective-well being and meaning in life are associated with suicide ideation, this thesis might provide new insights that can be useful in understanding what factors enhance mental health and well-being and decrease the risk of suicide among community-residing older adults.

1.1 Canadian Demographics

The Canadian population is aging. It has been estimated that the number of older adults will rise from approximately 5.0 million in 2011 to around 10.4 million by the year 2036 (Statistics Canada, 2014d). Moreover, Statistics Canada reports that by 2051, approximately one in four Canadians will be 65 years of age or older (See Figure 1 below).

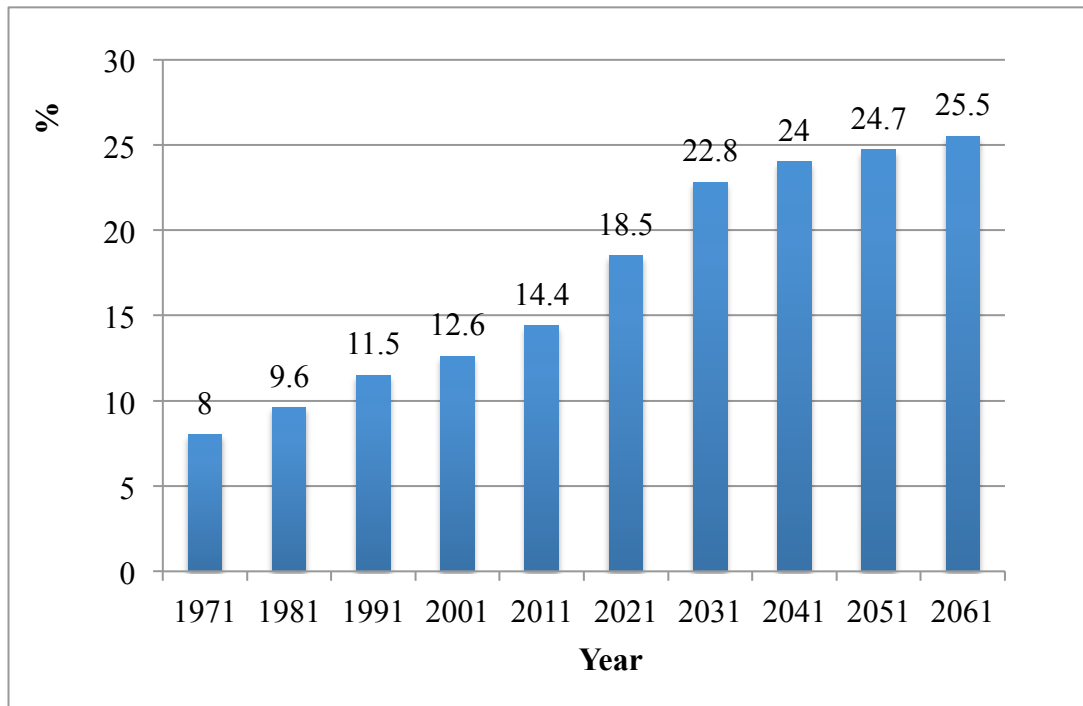


Figure 1: Percentage of the Canadian population aged 65 years or older, Canada, historical (1971-2011) and projected (2012-2061) Source: Adapted from (Statistics Canada, 2014d).

There is a perception among the general population that aging is a sign of impending disease, disability, and deterioration (Jeste, 2012). Yet there are an increasing number of older adults who are not only thriving, but also making valuable contributions to society (Jeste, 2012). Traditional definitions of successful aging have focused on the absence of physical and cognitive ailments. For instance, Rowe and Kahn (1987) posit that successful aging is made up of three criteria: 1) freedom from disease and disability, 2) high cognitive and physical functional capacity and 3) active engagement with life

(Montross et al., 2006). This model has been criticized as being too restrictive and not inclusive of other potentially important factors such as well-being (Montross et al., 2006). Recent work has demonstrated that some individuals who did not meet Rowe and Kahn's criteria evaluated themselves as aging successfully (Montross et al., 2006). This suggests that there may be a discrepancy between subjective perceptions and objective definitions of successful aging, necessitating further exploration of models of well-being in later life (Montross et al., 2006).

1.2 Well-Being

There are different schools of thought on the nature of well-being, including eudaimonism and hedonism (Ryff, 1989). The eudaimonic perspective posits that striving for a virtuous life and actualizing one's true potential will lead to well-being (Ryff, 1989; Ryff, 1995). Influenced by the eudaimonic perspective, Ryff and Singer (1989) developed a multidimensional measure of psychological well-being, which assesses six different constructs including: autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relatedness to others (Ryff, 1989; 1995).

The hedonic view suggests that happiness is achieved through maximizing pleasurable experiences and minimizing pain (Henderson & Knight, 2012). Proponents of this theory have suggested that individuals are capable of subjectively evaluating their well-being. Andrews and Whitney (1976) described subjective well-being (SWB) as a construct with cognitive and affective components (Henderson & Knight, 2012). The cognitive component of SWB, termed life satisfaction, is a process in which individuals assess the quality of their lives by comparing their present circumstance to a self-imposed standard (Diener, Emmons, Larson, & Griffin, 1985). The affective component of SWB represents an individual's observable emotional expression, whether positive such as pleasant moods and emotions, or negative, such as unpleasant moods and emotions (Diener, Suh, Lucas & Smith, 1999). Researchers and policy makers are increasingly utilizing components of SWB as indicators of population mental health (Bray & Gunnell, 2006). For instance, Statistics Canada found that in 2013, approximately 91.7% of the Canadian population reported that they were satisfied or very satisfied with their lives (Statistics Canada, 2014e) (See Figure 2).

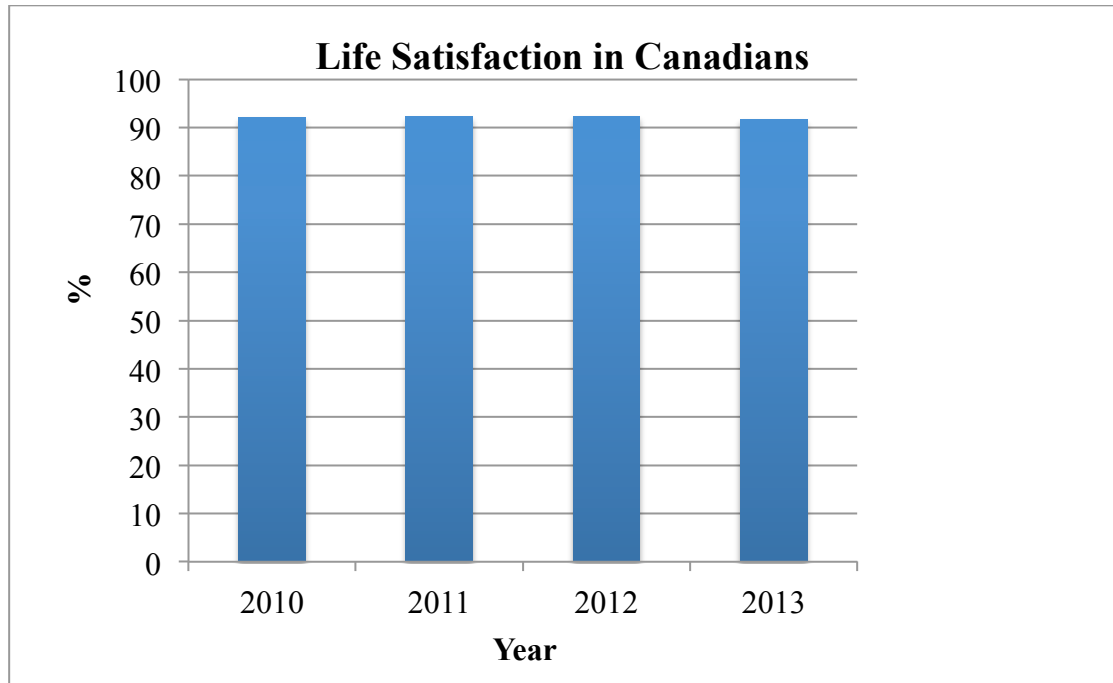


Figure 2: Percentage of the Canadian population reporting their life satisfaction as satisfied or very satisfied, 2010-2013. Source: Adapted from (Statistics Canada, 2014e)

1.3 Epidemiology of Suicide in Canada

Despite evidence suggesting that over 90% of the Canadian population is satisfied or very satisfied with life, a troubling minority is not satisfied with life and may experience poor mental health. Suicide is oftentimes considered a mental health indicator. Canadian mortality statistics show that there were 3728 deaths by suicide in 2011 (Statistics Canada, 2014a). Statistics Canada has suggested that these deaths by suicide reflect only a small portion of the number of suicide-related behaviours (Navaneelan, 2014). For every death by suicide, there are as many as 20 suicide-related behaviours for the general population (Conwell et al., 1998). However, it has been estimated that for every death by suicide, there are only approximately four suicide-related behaviours in older adults (Conwell et al., 1998). These estimates suggest that as individuals age, the lethality of suicide-related behaviour increases (Heisel & Duberstein, 2005). Conwell and Thompson (2008) have argued that since older adults in general tend to be frailer, they are more likely to die as a result of any self-inflicted injury. Older adults are also more

likely than younger individuals to live alone, reducing the opportunities for intervention after engagement in suicide-related behaviour (Conwell & Thompson, 2008). Older adults also tend to use methods that are more likely to result in death (Conwell & Thompson, 2008). For instance, in Canada, firearm use is the most common means of suicide among older men (Statistics Canada, 2014c). These findings highlight the importance of intervening prior to any suicide-related behaviour in enhancing the prevention of death by suicide.

Suicide ideation is a well-established risk factor for suicide-related behaviour, as well as for death by suicide (Heisel & Flett, 2006; Waern et al., 1999). Existing literature on suicide ideation has focused on assessing associated risk factors (Heisel & Flett, 2006). For instance, research findings have shown strong associations between suicide ideation and depression (Heisel & Flett, 2008). Yet, most depressed older adults do not die by suicide, suggesting that the onset or exacerbation of suicide ideation may be determined in part by the presence of other risk factors and the absence of resilience (Heisel & Flett, 2008). Resilience has been defined as a dynamic process that enables an individual to adapt to struggles in a positive manner and “bounce back” from adversity (Hochhalter & Smith, 2011; Luthar, 2006). Resilience is not just a negative correlate but also a factor that fosters strength in the face of adversity (Hochhalter & Smith, 2011; Luther, 2006). Investigating resilience factors that prevent the onset or exacerbation of suicide ideation may provide a potentially useful target point for promoting mental health (Olfson et al., 1996; Yip et al., 2003).

1.4 Subjective Well-Being as a Resilience Factor

Subjective well-being may be regarded as a resilience factor. Reviews of the literature have demonstrated life satisfaction to be significantly negatively associated with suicide ideation (Lyons, 1984; Pavot & Diener, 2008). Although the relation between life satisfaction and suicidality may seem fairly straightforward, it appears as though this association may be influenced by other factors. Luhmann and colleagues (2013) suggested that high levels of life satisfaction and positive affect might prevent suicide ideation through various modes of behaviour including creativity. Diener (2012) contended that researchers should focus on discovering the reasons why subjective-well

being might predict future events, such as suicide ideation. Heisel and Flett (2008) posited that the relation between satisfaction with life and suicide ideation might be mediated by factors more directly linked to suicide, such as meaning in life. Heisel and Flett's (2008) findings resonate with Frankl's (1963) work, which suggested that if an individual actively pursued needs, such as those proposed by Maslow including esteem, achievements or self-actualization, they would not necessarily find happiness or life satisfaction. Frankl (1963) argued that these needs are often self-focused, where a task or goal is pursued in order to benefit the self. He theorized that meaning in life should be regarded as the highest human need in Maslow's hierarchy, as it goes beyond the self and represents transcendence (Frankl, 1963; Rajasakran, Sinnappan & Raja, 2014). Using Frankl's work as a foundation, Heisel (2013) argued that if an individual actively sought out meaningful tasks and goals, happiness and life satisfaction might follow, as depicted in Figure 3.

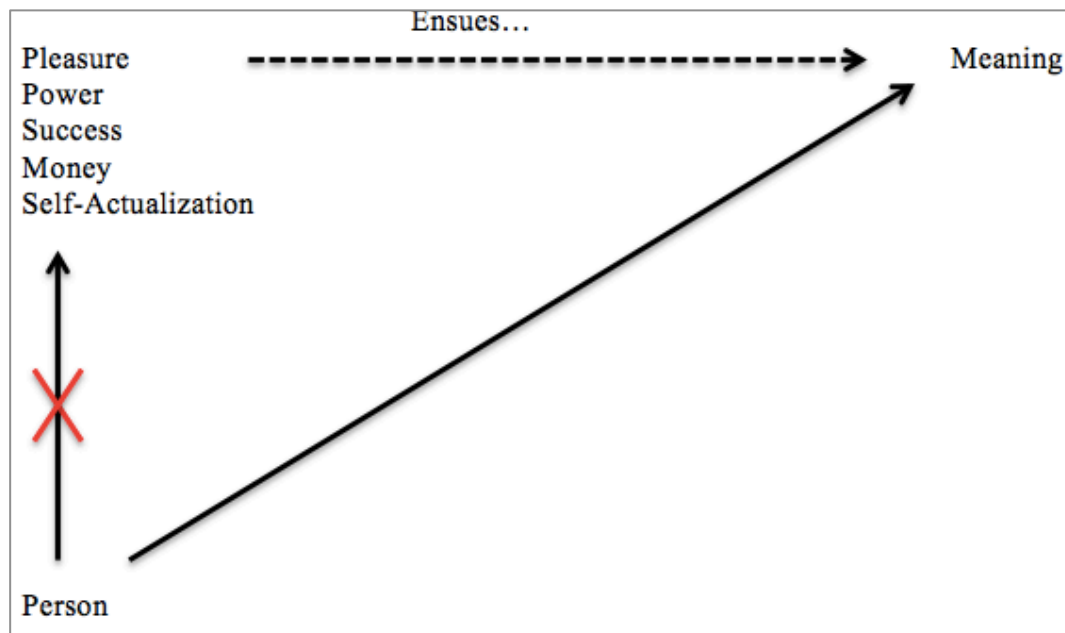


Figure 3: Subjective Well-Being and Meaning in Life. Note: Diagram obtained from Presentation Slides (Heisel, 2013)

1.5 Meaning in Life as a Resilience Factor

Viktor E. Frankl, an Austrian neurologist, psychiatrist and founder of a meaning-centered school of psychotherapy known as Logotherapy, detailed his experiences as a concentration camp inmate and Holocaust survivor in his well-known book, *Man's Search for Meaning* (1963). Frankl (1963) posited that individuals who searched for or found meaning, even in the midst of negative circumstances, were better able to endure the harsh environment of a concentration camp than those who thought of survival alone. Put simply, meaning in life played a valuable role in preventing despair and suicide among these inmates (Frankl, 1963). Frankl (1963) argued that this search for meaning is central to human existence and that individuals are free to decide what they do or how they approach a situation or experience. As such, meaning in life is influenced by an individual's knowledge, abilities, experiences, desires, beliefs and values (Frankl, 1963).

According to Frankl, the notion of "search for meaning" implies that there is meaning to be discovered rather than to be created (Frankl, 1963). In order to understand how meaning could be discovered, Frankl identified four broad values in which most people found meaning, including 1) creative pursuits, 2) life experiences, 3) attitudes towards successes and challenges and 4) a transcendent pursuit of one's ultimate purpose in life (Frankl, 1988). The "creative value" represents what individuals might "give" to the world including volunteering, work, charity and other contributions. The "experiential value" represents what individuals "experience" from the world such as love, friendship, beauty and other positive experiences. The "attitudinal value" represents an individual's approach to triumphs and challenges such as acceptance, understanding, anger and other attitudes. Lastly, the "ultimate meaning" refers to an individual's awareness that his or her life serves a greater purpose. This "ultimate meaning" represents the most existential dimension of "meaning in life" as it goes beyond an individual's intellectual capacity (Frankl, 1963).

Frankl (1963) argued that when meaning is not found, individuals might become existentially frustrated and experience an existential emptiness, or "existential vacuum" (Frankl, 1963; Heisel & Flett, 2014). This existential vacuum does not necessarily represent a sign of impending psychopathology (Heisel & Flett, 2004). Instead, it can

serve as an indicator that something is amiss in one's life thereby encouraging one to reassess his or her priorities (Frankl, 1963; Heisel & Flett, 2014). When an individual fails to recognize this warning sign, he or she may try to fill this feeling of emptiness with meaningless action, such as substance misuse, and may develop an existential or "noogenic" neurosis. "Noogenic neurosis is a psychopathological response to a perceived absence of MIL that can ultimately engender suicidality" (Heisel & Flett, 2014, p.305). For instance, meaning in life has been shown to be positively related to life satisfaction, and psychological well-being among people of all age groups (Ardelt, 2003). On the other hand, a loss of meaning tends to have a negative effect on the health and well-being of individuals (Moore, 1994).

1.6 Theoretical Framework

This thesis investigates data collected in the context of a longitudinal cohort study that was designed to investigate risk and resilience factors associated with the onset and/or exacerbation of suicide ideation among community-residing older adults (Heisel & Flett, 2014). Heisel and Flett's (2014) multidimensional model built upon previous existing theories of late-life suicide ideation by incorporating resilience factors. They argued that older adults who possessed one or more risk factors and experienced precipitating stressors or other negative life events might be primed for suicide ideation, but by drawing upon MIL or other internal sources of resilience, they might prevent or alleviate such thoughts even in the face of negative life events (Heisel & Flett, 2014).

Although subjective well-being (SWB) and meaning in life (MIL) are oftentimes assessed as individual resilience factors within such models, research has shown that they tend to influence each other. Shmotkin and Shrira (2013) theorize or conceptualize "subjective well-being (SWB) and meaning in life (MIL) as discrete, yet conjoint, systems that function to facilitate adaptation in the face of life adversity" (p.77). Their model specifies that subjective well-being and meaning in life can function as complementary systems for coping with the "hostile-world scenario" (HWS). Shmotkin (2005) stated that the HWS represents life adversity or an "aggregate of any real or prospective threats to an individual's life or to their physical and mental well-being" (p.295). Evolution has depended on the ability of organisms to recognize dangers in a

hostile world (Shmotkin, 2005). Failure to manage these potential threats to life may ultimately lead to death (Kastenbaum, 1992; Shmotkin, 2005).

The HWS or adverse life events may be classified as major or minor, as both may represent a real or potential threat to an individual's well being (Lester & Rogers, 2013). Major life events may significantly impact an individual's ability to function and may often require a longer period of adjustment. Examples of major events can include traumatic abuse and loss of a loved one (Lester & Rogers, 2013). The HWS treats "catastrophes" as events that are "likely to occur"; therefore anticipating these potential future negative events may help keep an individual safe in an "otherwise disastrous world" (Shmotkin, 2005).

Minor life events, or daily hassles, are regarded as less distressing and often involve feelings of irritation when dealing with day-to-day challenges (Lester & Rogers, 2013). Examples of minor life events can include such daily stressors as having an argument with a spouse, being late for work, concerns about financial security or having too many social obligations. Although daily hassles are less traumatic in nature than major life events, research has shown that the cumulative effect of repeated and co-occurring daily hassles can have a significant negative impact on mental health (Lester & Rogers, 2013). For instance, research has previously demonstrated that daily hassles were more strongly associated with somatic health problems than were major/negative life events (De Longis et al., 1982). Luo's longitudinal study of daily hassles and mental health also found that daily hassles correlated with psychological symptoms, even after adjustment for previous symptom level (Luo, 1991). This thesis will assess the HWS using a daily hassles measure, in order to determine if the frequency of adversity plays a role in the relation between life satisfaction and meaning in life in associating with suicide ideation.

Shmotkin (2005) and Shrira and colleagues (2011) model postulates that both SWB and MIL can work together as a flexible system to enable individuals to live a happy life by regulating any disturbances caused by life adversity. Therefore, by seeking

SWB and MIL, human beings may be able to return to their baseline functioning following any type of adversity.

Shmotkin (2005) and Shrira and colleagues (2011) model assumes that SWB and MIL engage differently with the HWS. For instance, if individuals are capable of assessing their overall life as good, even in the face of adversity, then SWB is able to *regulate* the HWS (Shrira et al., 2011). On the other hand, if individuals can find meaning in a negative situation, then MIL can *reconstruct* the HWS to be more understandable (Shrira et al., 2011). In most cases, SWB and MIL will interact and promote each other when successfully engaged with the HWS. For instance, Shrira and colleagues (2011) posited that SWB and MIL promote each other and become more closely linked as adversity intensifies. For example, if an individual is able to assess one's life as favourable, even in the face of adversity, then he/she is fostering a psychological environment that is conducive to finding meaning (Shrira et al., 2011).

Shrira and colleagues (2011) also posited that SWB and MIL should “complement each other as enhancers of functioning to a greater extent as the HWS intensified”. When either SWB or MIL is low, the other should play a more critical role in influencing well-being and functioning, especially among those who report higher levels of HWS (Shrira et al., 2011). For instance, if meaning in life was low, even the smallest amount of life satisfaction would be helpful in improving coping strategies and thereby functioning, especially at times of adversity. According to Shrira (2011), this has been found indirectly in Heisel and Flett's (2004) study that reported purpose in life, a variable closely associated with MIL, as most protective against suicide ideation at higher, rather than lower levels of depression (Heisel & Flett, 2004). Although Heisel and Flett (2004) did not assess SWB and MIL in the context of adversity, their findings do suggest that resilience factors may play a more critical role in reducing the risk of suicide ideation.

The larger study from which the present data were drawn, was designed to test a more specific model of that proposed by Heisel and Flett (2004), in which psychological resilience factors, and meaning in life in particular, protects against the onset or

exacerbation of suicide ideation, accounting for the impact of precipitating negative life events or transitions (Heisel & Flett, 2014). The model proposed by Shmotkin (2005) and Shrira (2011), however, provides a different way of conceptualizing how resilience factors may work to impact mental health in the face of adversity. This is particularly important because older adults are continually presented with a variety of types of adversity, from daily hassles to major social and physical losses (Moore, 1994). Unfortunately there is limited research assessing Shmotkin (2005) and Shrira and colleagues (2011) model in older adults. By addressing this knowledge gap and investigating the potential ways in which subjective well-being and meaning in life may interact with adversity in protecting against suicide ideation specifically, we may have an opportunity to better understand how to promote mental health and well-being among older adults who are experiencing challenges. The current thesis is designed to test Shmotkin (2005) and Shrira and colleagues (2011) further assumptions by using data collected from a sample of community-residing older adults.

Chapter 2

2 Literature Review

2.1 Subjective Well-Being and Suicidality

A literature search was conducted to identify published studies investigating the association between subjective well-being and late-life suicide ideation, suicide-related behaviours and death by suicide. The electronic databases MEDLINE, PsycINFO, WEB OF SCIENCE, EMBASE and CINHALL were searched simultaneously between August 2014 and April 2015. Various key words were used to identify all relevant articles, including “life satisfaction”, “satisfaction with life”, “subjective well-being”, “suicidal ideation”, “suicide”, “aged”, “older adult” and “elder*”. This search strategy was adapted slightly to each database in order to yield accurate results.

The results for each stage of the search methodology are illustrated in Figure 1. A total of 232 citations were retrieved from all databases combined. The abstracts of these articles were reviewed and the following exclusion criteria were used: 1) duplicate from another database, 2) analysis did not primarily focus on a sample of older adults, 3) was a review article and was not a journal article, book or dissertation, 4) was not in English and 5) article did not investigate the association of either subjective well-being, life satisfaction or happiness with suicide, suicide ideation or suicide-related behaviours. An additional 2 articles, found through bibliography searches, were also included, yielding a total of 12 citations that assess the association between subjective well-being and suicidality.

	DATABASE SEARCHED:				
	Medline	PsycINFO	Web of Science	EMBASE	CINAHL
	66	21	44	79	22
TOTAL	232 CITATIONS				
KEYWORDS	“life satisfaction”, “satisfaction with life”, “subjective well-being”, “suicidal ideation”, “suicide”, “aged”, “older adult” and “elder*”				

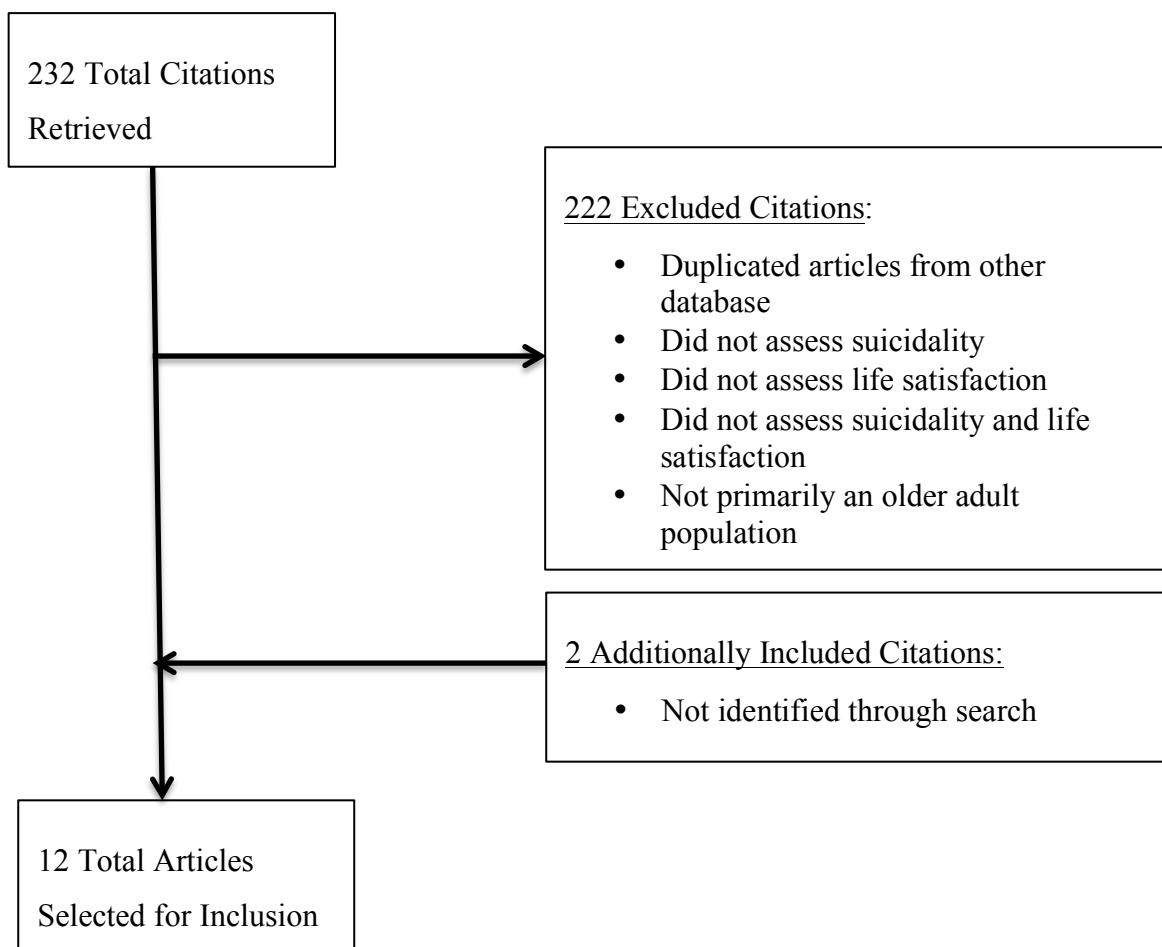


Figure 4: Literature Search Results for Subjective Well-Being and Suicidality

2.1.1 Literature Results Assessing SWB and Suicidality

Findings Among Community-Residing Older Adults

According to our review of the literature, there have been only three studies that have assessed the association between life satisfaction and suicide ideation among generally healthy, community-residing older adults. One study investigated the prevalence of suicide ideation and its clinical correlates among a sample of 263 adults, 50 years of age or older, in rural China. Preliminary findings revealed that suicide ideation was significantly correlated with sex, major medical conditions, depressive symptomology, recent stressful life events and lower life satisfaction (Chiu et al., 2012). Chou, Jun, and Chi (2005) also found suicide ideation to be negatively associated with life satisfaction and self-rated health status in sample of 154 Hong Kong Chinese adults, 60 years of age and older (Chou et al., 2005).

Cook and colleagues (2002) examined risk and protective factors associated with suicide ideation among 835 African-American adults, 55 to 96 years of age, residing in one of six urban public housing developments. They found that those with suicide ideation were more likely to report lower life satisfaction and less social support (Cook, Pearson, Thompson, Black, & Rabins, 2002). Cook and colleagues further reported that life satisfaction was highly related to social dysfunction and depression, suggesting that suicide ideation may be more closely correlated with long-term depressed mood, and that the effect of life satisfaction on suicide ideation may be mediated by other factors such as depression (Cook, Pearson, Thompson, Black, & Rabins, 2002).

Findings Among Clinical Samples

Researchers have also investigated associations among social support, life satisfaction and suicide in clinical samples. For instance, Soykan, Arapaslan and Kumbasar (2003) found that among 40 patients with end-stage renal disease, the probability of suicide-related behaviour increased significantly with lower life satisfaction and among those who perceived their family, friends and significant others to be less supportive (Soykan, Arapaslan & Kumbasar, 2003).

Peterson, Chatters, Taylor and Nguyen (2013) examined demographic and mental health correlates of subjective well-being in a national sample of 185 African Americans, 55 years and older with mental disorders. The researchers found that having a lifetime history of suicide ideation was associated with life satisfaction, but not with happiness (Peterson, Chatters, Taylor & Nguyen, 2013). Although these findings may be related to the measures that the researchers used, they may also suggest that happiness and life satisfaction are distinct constructs that work differently and should be assessed separately. For instance, Lucas, Diener and Suh (1996) examined the convergent and discriminant validity of positive affect, negative affect and life satisfaction and found that life satisfaction was indeed discriminable from the affective components. Lastly, Peterson and colleagues found that having previous suicide ideation did not mean that a person would be unhappy, even in a sample of older adults with diagnosed mental disorders. This finding indicates that the affective component of subjective well-being may fluctuate with mood (Peterson et al, 2013).

Berlim and colleagues (2003) examined the impact of suicide ideation on day-to-day functional ability and subjective well-being of 70 Brazilian outpatients with depressive disorders. They analyzed differences between depressed patients with and without suicide ideation and found that those who reported having thoughts of suicide presented with higher levels of physical and psychological distress (Berlim, Mattevi, Pavanello, Caldieraro, & Fleck, 2003). Furthermore, patients with depression who reported suicide ideation had markedly lower levels of psychological, physical and social functioning (Berlim et al., 2003). These authors concluded that depression might influence the way people assess their quality of life (Berlim et al., 2003). Heisel and Flett (2004) examined the roles of purpose in life and satisfaction with life in protecting against suicide ideation in a sample of 49 middle-aged clinical mental health patients. They found that suicide ideation was significantly negatively correlated with satisfaction with life ($r=-0.33$, $p<0.05$) (Heisel & Flett, 2004). The authors assessed whether satisfaction with life and purpose in life explained additional variability in suicide ideation scores above and beyond depression and hopelessness. The results revealed that purpose in life was significantly more protective against thoughts of suicide than was satisfaction with life (Heisel & Flett, 2004). The authors, similar to Cook and colleagues,

concluded that life satisfaction may play a secondary role in deterring suicidal contemplation (Heisel & Flett, 2004).

Findings Among Nursing or Residential Care Home Residents

Malfent, Wondrak, Kapusta and Sonneck (2010) assessed the prevalence and correlates of suicide ideation with risk and protective factors among 129 residents, aged 60 years or more, of 15 Viennese residential care homes. The researchers found that among this sample of older adults, the one-year period prevalence of suicide ideation was 11% (Malfent, Wondrak, Kapusta, & Sonneck, 2010). A logistic regression analysis revealed that older adults who experienced suicide ideation during the past month had lower self-efficacy, suggesting that these individuals had low expectations when it came to assessing their capabilities in handling different situations in life (Malfent et al., 2010). Furthermore, these older adults who experienced suicide ideation were also more dissatisfied with their lives (Malfent et al., 2010). These results are consistent with earlier findings from the U.S. (Haight & Hendrix, 1998).

Haight and Hendrix (1998) examined whether individuals have relevant biographies that predispose them to suicide. Using a life history approach, the researchers recruited two groups of older women recently relocated to a nursing home, six who were satisfied with life and six who verbalized suicide intent. What was unique about this study was that the researchers believed that satisfaction with life in old age is based on lifetime experiences and the development of certain traits that influence an individuals' capacity to handle untoward life events that accumulate and dictate future events (Haight & Hendrix, 1998). The results of the study revealed that among those women who verbalized suicide-related intent, several common themes were apparent that were either minimal or non-existent among satisfied women, including: unhappy and dysfunctional childhood and marriages, feelings of loneliness and lack of social support, previous experience of violent deaths and suicides in their family, having unfinished business or harbouring feelings of regret, and being disconnected and uninvolved in life (Haight & Hendrix, 1998). The authors contended that having strong, loving, supportive families provides the foundation for building a positive and satisfying life in one's later years

(Haight & Hendrix, 1998). According to the authors, without this strong foundation, enjoying life becomes difficult and lends itself to a snowballing of negative events (Haight & Hendrix, 1998). However, these authors may be focusing too heavily on causal attributions in a cross-sectional study with a sample size of 12. For instance, some may argue that being suicidal might negatively colour one's memories, suggesting that Haight and Hendrix's hypothesis may be more complex by nature (Morrison & O'Connor, 2008).

Findings From a Global Perspective

Our literature review revealed three ecological studies that have examined well-being and suicide rates among numerous countries. Bray and Gunnell's (2006) study examined the association of variables from survey data on well-being with suicide rates among representative samples from 33 European countries. The researchers divided the population into different age groups and found that among those 65 years of age and older, life satisfaction ($r=-0.54$) and happiness ($r=-0.50$) were both significantly negatively correlated with suicide rates (Bray & Gunnell, 2006). The researchers concluded that there was a stronger correlation between subjective well-being and suicide rates with increased age and that the magnitude of the correlation was also greater for men than for women (Bray & Gunnell, 2006).

Wu and Bond (2006) compared suicide rates of younger people, 15-24 years of age, and older adults, 65-74 years of age, from 54 nations using societal variables in conjunction with psychological measures of citizen characteristics as mediators. The researchers found that life satisfaction was significantly negatively correlated ($r=-0.72$) with suicide rates in the older group (Wu & Bond, 2006). Wu, Varnik, Toodings, Varnik and Kasearu (2014) investigated how different types of welfare states shape the context of everyday life of older people by influencing their subjective well-being. The authors aggregated rates for those 65 years of age and older, and for those between the ages of 0 and 64. They found that suicide mortality among older adults in 22 countries were significantly correlated with the subjective well-being indicators (Wu, Varnik, Toodings,

Varnik & Kasearu, 2014). Unlike other studies, this study found that the weakest negative correlation existed with life satisfaction (Wu et al., 2014).

Knowledge Gaps in Prior Research

It is apparent that certain gaps exist in the literature, which need to be addressed through further research. For instance, many studies that investigated the association between life satisfaction and suicide ideation focused primarily on clinical samples. Although it is important to investigate this association within high-risk individuals, Rose (1985) contended that research strategies and interventions targeted towards the general population rather than those at the extremes, might be more effective in reducing disease burden. In this instance, research focusing on community-residing older adults who are at a moderate risk of suicide ideation is further needed to understand how resilience factors might interact to deter suicide ideation and improve well-being.

It is also important to note that studies that did focus on community-residing older adults often addressed the role of life satisfaction in specific ethnic or racial groups, such as among African Americans or Chinese older adults. Focusing on specific groups of people limits the ability of the researcher to generalize inferences to a general population, hindering the overall applicability of the study findings. Furthermore, studies that recruited a heterogeneous sample of older adults investigated global suicide rates rather than suicide ideation. Studying how factors, such as well-being, interact with death by suicide may not reveal how these factors are associated with suicide ideation. For instance, some risk factors, such as being male, are associated with death by suicide but the relation isn't as well established with suicide ideation. As a result, a study using suicide ideation as an outcome is needed to better understanding how resilience factors interact with variables to reduce risk and improve well-being.

A potential limitation of the literature on well-being and suicide ideation is that researchers have often relied on the Life Satisfaction Index or single items from various surveys that do not differentiate between the cognitive and affective component of subjective well-being. Using a scale that assesses the cognitive component only, such as The Satisfaction with Life Scale (SWLS) developed by Diener and colleagues (1985),

may provide a more focused estimate of the relation between well-being and suicide ideation.

Overall, the literature indicates that life satisfaction is associated with suicide ideation. Specifically, these studies have collectively shown that life satisfaction: 1) has a negative relationship with suicide ideation, 2) may be influenced by underlying psychopathology, 3) may be related to various factors such as social support, sex, and age and 4) may play a secondary role in suicide prediction. We hope to build on previous research by 1) using data from a sample of community-residing older adults, 2) assessing suicide ideation using the Geriatric Suicide Ideation Scale, a measure developed in older adults, and 3) using The Satisfaction with Life Scale to assess the cognitive component of well-being. We also hope to provide theoretical understanding on how well-being and meaning in life may act as resilience factors to mitigate or prevent suicide risk.

As illustrated through this review, the relation between life satisfaction and suicide ideation is not necessarily straightforward, as life satisfaction may interact with other variables that are more directly linked to suicide ideation, such as meaning in life. Prior to assessing how life satisfaction and meaning in life interact to reduce suicide ideation and promote well-being, it is important to understanding the association between meaning in life and suicide ideation. The next section will discuss the current literature available on meaning in life and suicide ideation.

2.2 Meaning in Life and Suicidality

A literature search was conducted to identify published studies investigating the association between meaning in life and late-life suicide ideation, suicide-related behaviours and death by suicide. The electronic databases MEDLINE, PsycINFO, WEB OF SCIENCE, EMBASE and CINHALL were searched simultaneously from August 2014 to April 2015. Various key words were used to identify all relevant articles. The key words included “meaning in life”, “suicide”, “aged”, “older adult” and “elder*”. This search strategy was adapted slightly to each database in order to yield accurate results

A total of 56 citations were retrieved from all databases combined. Seventeen duplicate articles were excluded yielding a total of 39 citations to be reviewed. The abstracts of the 39 remaining articles were reviewed and the following exclusion criteria were used: 1) analysis did not use a sample of older adults, 2) was a review article and was not a journal article, book or dissertation, 3) was not in English and 4) article did not investigate the association between meaning in life and suicide, suicide ideation or suicide-related behaviours. An additional 2 articles, found through bibliography searches, were also included, yielding a total of 15 citations that assess the association between meaning in life and suicidality.

	DATABASE SEARCHED:				
	Medline	PsycINFO	Web of Science	EMBASE	CINAHL
	13	14	7	8	15
TOTAL	56 CITATIONS				
KEYWORDS	“meaning in life”, “suicide”, “aged”, “older adult” and “elder*”				

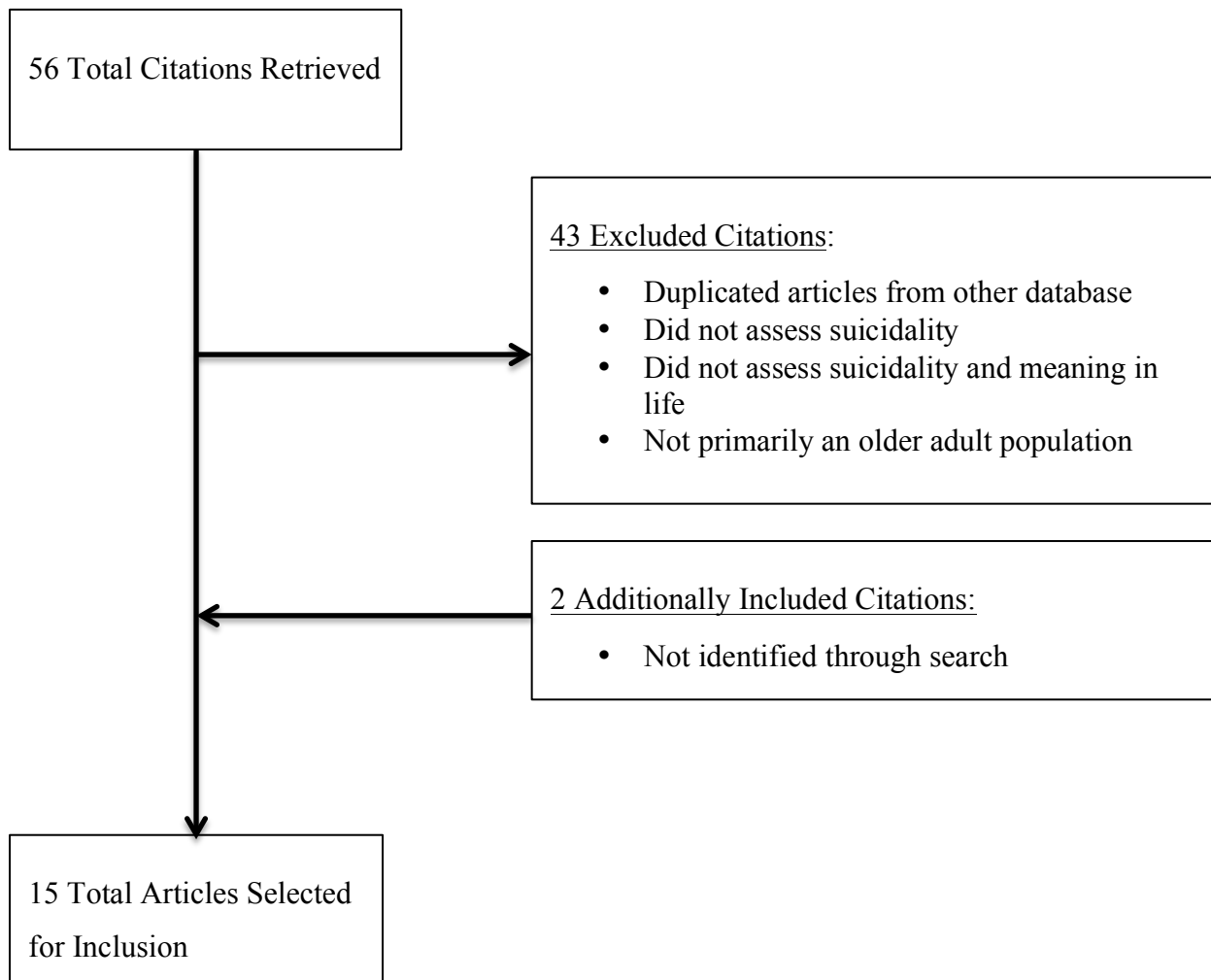


Figure 5: Literature Search Results for Meaning in Life and Suicidality

2.2.1 Literature Results Assessing MIL and Suicidality

Perceptions from Older Adult Outpatients

Courage, Godbey, Ingram, Schramm, and Hale (1993) conducted a qualitative study investigating how suicide may become an option for older adults. Eighteen older adults recruited through a geriatric outpatient clinic were asked open-ended questions about suicide such as “tell me about your thoughts and feelings about suicide” and “what does suicide mean to you?”. Researchers found that the acceptance of suicide was accompanied by the sense that older adults do not have much for which to live (Courage et al., 1993). One particular participant stated “I don’t think it’s that the pressures are so great on the older people but that they have not so much to look forward to” (Courage et al., 1993). This quote illustrates that some may attribute loss of meaning to aging, which ultimately may lead to contemplation of suicide (Courage et al., 1993). Similarly, Chen, Tsai, Ku, Lee and Lee (2014) examined older adult outpatients’ perceived reasons for, opinions of, and suggestions for people considering suicide in Taiwan. These researchers found that participants often expressed empathy for those who died by suicide and that they understood situations that could lead to suicide (Chen, Tsai, Ku, Lee and Lee, 2014). One participant stated, “When you feel life is meaningless, it [suicide] happens” (Chen et al., 2014). The participants identified feelings of uselessness as a means to being let down emotionally, which could further lead to potentially self-harming behaviour (Chen et al., 2014). Overall, the findings from these two studies suggest that outpatients recognize the valuable role meaning in life has, especially in older age, in preventing despair and suicide ideation.

Perceptions from Individuals who have reported Suicide Ideation

Morris (1995) interviewed three people who once considered suicide to find out how they transitioned from despair to meaning, and to determine what they believed was important during this transition. The participants were white American women, 55 years of age or older. Common themes emerged from this phenomenological study including philosophy of life, significant relationships, acceptance, autonomy, healthful action, helping and thriving (Morris, 1995). One of the participants indicated that each individual

has a responsibility to actively search for his or her personal meaning (Morris, 1995). Many found that having the right attitude and possessing eagerness about what each new day could bring helped the transition from suicide-related thoughts to meaning (Morris, 1995). Moore (1994) conducted a hermeneutical phenomenological study to examine how older adults who engaged in suicide ideation experienced meaning in their lives. Eleven older adults, between the ages of 64 and 92 years, were recruited from a Canadian inpatient psychiatric facility where they had been voluntarily admitted for the treatment of depression and suicide ideation. In-depth, face-to-face interviews revealed several themes including “psychache” or unbearable psychological pain, nobody cares, powerlessness, and the question of meaning (Moore, 1994). One participant described his or her personal experience, stating, “I don’t seem to care anymore. Nothing seems to have any meaning” (Moore, 1994). Another 70-year old woman expressed feelings that she was worthless. The investigators felt it was difficult to talk about meaning with these participants, since many of them seemed to exude perceptions of meaninglessness (Moore, 1994). The authors argued that meaning is central to life and that meaning allows humans to make sense of their existence in the face of adversity (Moore, 1994). They concluded that healthcare practitioners should try to advocate for and support older persons in their search for meaning (Moore, 1994). Interestingly, Moore initially hypothesized that suicide provides meaning, yet found that the opposite to be true, with outpatients identifying loss of meaning as central among those who engage in suicide ideation.

Perceptions from Individuals who have reported Suicide-Related Behaviour

Crocker, Clare, and Evans (2006) carried out a qualitative interview study in order to understand the subjective experience of 16 adults, 65 years of age or older, who had recently engaged in suicide-related behaviour. Their semi-structured in-depth interview revealed three key themes of Struggle, Control and Visibility (Crocker et al., 2006). The authors posited that loss of control appeared to tap into a fear of future decline and was strongly linked to negative expectations of old age (Crocker et al., 2006). Furthermore, the authors believed that this feeling might have made it difficult for participants to maintain a positive focus and to find meaning in their lives (Crocker et al., 2006). The

researchers found that many participants fought against changes that they were experiencing by occupying their time and keeping busy, allowing them to maintain a degree of control and to find purpose and meaning in life (Crocker et al., 2006).

Perceptions from Informants who lost someone to Suicide

Kjølseth, Ekeberg & Steihaug (2010) reviewed psychological autopsy records of a group of older adults who died by suicide to investigate how these individuals experienced their existence towards the end of their lives. The researchers interviewed 63 informants in relation to 23 deaths by suicide of people 65 years of age and older in Norway. According to the informants, many of the older adults who died by suicide emphasized feelings of not having anything for which to live (Kjølseth, Ekeberg & Steihaug, 2010). Informants described the deceased as experiencing a loss of this will to live (Kjølseth et al., 2010). A common theme was that older adults perceived their future as losing oneself, requiring assistance, and being a burden on others (Kjølseth et al., 2010). The authors concluded that suicides are existential choices, where age entails closeness to death that could provide a sense of relief (Kjølseth et al., 2010).

Quantitative Findings

Buchanan (1993) conducted a cross-sectional study to compare meaning in life with other related variables among a sample of 160 older adults, 80 of whom were non-depressed and 80 of whom were depressed. The authors used the Life Attitude Profile-Revised (Reker, 1990) to assess meaning in life. The results revealed that higher levels of meaning in life were associated with higher levels of spirituality, hope, health and social support and with lower levels of past suicide ideation and current suicide ideation (Buchanan, 1993). Furthermore, the researchers posited that the absence of a clear MIL might contribute to the presence of depression (Buchanan, 1993).

Heisel and Flett (2008) investigated associations between suicide ideation and a set of potential risk and resilience factors among 107 adults, 67 to 98 years of age, recruited from community, residential, and healthcare settings. They found that suicide ideation, measured with the Geriatric Suicide Ideation Scale, was significantly negatively

associated with meaning in life controlling for sex, age, cognitive function, and mental health patient status (Heisel & Flett, 2008). In another study using the same data set, these authors reported an interaction between MIL and depressive symptom severity, suggesting that high meaning in life significantly protects against suicide ideation at high levels of depression (Heisel & Flett, 2007). Bryan and colleagues (2013) found that lower MIL had a stronger relation with increasing severity of suicide ideation in a sample of 273 active duty Security Forces personnel assigned to two US Air Force bases (Bryan et al., 2013).

Therapeutic Approaches Among Community-Residing Adults

Lapierre, Dube, Bouffard, and Alain (2007) sought to increase subjective well-being by offering a personal goal intervention program, called *Managing Your Retirement Goals*, to early retirees, aged 50 to 65 years. The purpose of the program was to help participants' successful transition into retirement by assisting them to define and pursue their goals. The results revealed that after the intervention, individuals were reporting higher levels of purpose in life (Lapierre, Dube, Bouffard & Alain, 2007). Furthermore, the researchers found that approximately 80% of the experimental group and only 36% of the control group reported an absence of suicide ideation at the 6-month follow-up (Lapierre et al., 2007). This intervention demonstrated positive results indicating that this program could serve as a potential therapeutic approach for suicide ideation.

Therapeutic Approaches Among Clinical Samples

Ragan (2009) conducted a qualitative study assessing the effectiveness of bio-psychosocial treatments for older adults with depression. Interviews were conducted with 20 depressed older adults, 60 to 88 years of age, who were treated with IPT and medication. The author found that depression might result in part from a failed search for meaning (Ragan, 2009). Themes such as motivation toward meaning with a sense of purpose enabled participants in this study to continue to meet the challenges they face in their daily lives (Ragan, 2009). According to the author, seeking meaning throughout life enables one to transcend the pain of suffering with depression and chronic illnesses. The

author concluded that depression may be a stimulus for the participants to value their independence and relationships enough to engage their motivation to seek help to continue to find meaning in their lives (Ragan, 2009).

Meaning in life is a critical component for well-being among individuals with cancer. Kim and Lee (2010) found that approximately 73% of individuals with cancer who had suicidal thoughts or engaged in suicidal behaviour reported experiencing an existential vacuum. The researchers found that meaning in life was significantly negatively related ($r=-0.21$) to suicide ideation (Kim & Lee, 2010). To help patients with advanced cancer to sustain or enhance a sense of meaning, Breitbart and colleagues (2010) developed a Meaning Centered Group Psychotherapy (MCGP) based on Viktor Frankl's work. They recruited 90 patients with stage III or IV solid tumor cancers from outpatient clinics at Memorial Sloan Kettering Cancer Center in New York City and randomly assigned them to either MCGP ($n=49$) or a supportive psychotherapy group (SGP)($n=41$). MCGP is an 8-week intervention that uses didactic bibliotherapy, discussion and experiential exercises that focus on meaning. SGP is an 8-week 90-minute session that focuses on encouraging patients to share concerns, describe experiences, and voice problems to therapists and other group members. The results revealed that those who were assigned to MCGP experienced significantly greater improvements in a sense of meaning and subjective well-being and had a reduced desire for death. These findings indicate that a meaning centered therapy, such as MCGP, may help patients who are approaching the end of their life.

Heisel, Talbot, King, Tu, and Duberstein (2015) adapted Interpersonal Psychotherapy (IPT) for use with older adults at risk for suicide. IPT consisted of 16 weekly individual psychotherapy sessions of 50-60 minutes duration administered to 17 participants. The researchers found that there was a significant reduction in participant suicide ideation and depressive symptomology, and an improvement in meaning in life, from pre-to-post treatment assessment. The authors concluded that IPT might offer an effective option for reducing suicide risk in high-risk groups by enhancing meaning in life and other psychological well-being factors.

Knowledge Gaps in Prior Research

Overall, these studies have found that meaning in life may be negatively associated with suicide ideation among older adults. Although the interviews from the four qualitative studies revealed useful information about peoples' perceptions of reasons for suicide ideation or suicide-related behaviour, the findings may be incorrect due to the uncertainty of causal inferences derived from studies of small poorly controlled samples. Furthermore, the quantitative studies available examined this association among clinical samples but not among community-residing older adults. Research targeted at general populations at moderate risk of suicide ideation may be more useful at reducing the overall suicide burden, as illustrated through Rose's population strategy.

A potential limitation of the literature on meaning in life and suicide ideation is that researchers often relied on single-item measures or open-ended questions to assess meaning in life, a complex and multidimensional construct. Using a scale that assesses the multidimensional nature of meaning in life among older adults, such as the Experienced Meaning in Life scale (EMIL), may provide a more accurate estimate of the relation between meaning in life and suicide ideation.

Furthermore, to our knowledge, there are no current studies that examine associations among life satisfaction, meaning in life, daily hassles and suicide ideation among community-residing older adults. As Diener contended, it is critical to understand how subjective well-being interacts with other factors to predict future events. By using Shmotkin (2005) and Shrira and colleagues (2011) framework, we sought to understand how subjective well-being and meaning in life interact in the face of adversity. Specifically, we hoped to gain additional insight into the manner in which subjective well-being and meaning in life function in the face of cumulative daily hassles to predict suicide ideation. With these findings, we may better understand how resilience functions to promote well-being in community-residing older adults.

Chapter 3

3 Objectives and Hypotheses

The purpose of this thesis was to test Shmotkin (2005) and Shrira and colleagues (2011) theory by investigating the associations among life satisfaction, meaning in life, daily hassles and suicide ideation in a sample of community-residing older adults. Specifically, this thesis evaluated four objectives that were designed to address some of the current knowledge gaps in the literature.

3.1 Objective 1: Inter-Correlations Among Study Variables

To investigate the inter-correlations among suicide ideation, life satisfaction, meaning in life, daily hassles and depression. Although the relations between some of these variables have been examined before, these studies often did not report the correlations in unison. Furthermore, the purpose of this objective was to assess these interrelations and replicate previous findings, in the aims of pursuing higher-level regression analyses discussed in Objectives 2, 3 and 4.

It was hypothesized that:

1. Life satisfaction and meaning in life would be significantly negatively correlated with suicide ideation.
2. Daily hassles and depression would be significantly positively correlated with suicide ideation.
3. Life satisfaction and meaning in life would be significantly positively correlated.
4. Life satisfaction would be significantly negatively correlated with daily hassles and depression.

3.2 Objective 2: The Impact of SWB and MIL on Suicide Ideation, Above and Beyond Clinical Factors

To investigate the potential impact of life satisfaction and meaning in life on suicide ideation, controlling for the influence of depressive symptom severity. Previous findings have shown that life satisfaction is negatively correlated with suicide ideation. Frankl (1968) posited that satisfaction with life might actually be an unintended byproduct of the search for meaning and thus Heisel and Flett (2004) assessed associations among purpose in life, satisfaction with life, and suicide ideation among a sample of 49 psychiatric patients. They found that satisfaction with life and purpose in life explained significant additional variance in suicide ideation scores above and beyond depression. This thesis used a measure of meaning in life that was developed and validated in older adults, in order to seek to replicate Heisel and Flett's findings in a sample of fairly healthy community-residing older adults.

5. It was hypothesized that satisfaction with life and meaning in life would explain significant additional variance in suicide ideation scores above and beyond depression.

3.3 Objective 3: Shmotkin and Shrira's First Assumption

To examine Shmotkin (2005) and Shrira and colleagues (2011) hypothesis that subjective well-being and meaning in life are more closely inter-correlated, or their relation amplified, with intensification of life adversity. Specifically, we assessed whether the frequency of life adversity, measured using the Daily Hassles (DH) scale, impacted the strength of association between life satisfaction and meaning in life. According to Shmotkin (2005) and Shrira and colleagues (2011), there are several study findings that suggest that subjective well-being and meaning in life function through an amplification mode. For instance, King and colleagues (2006) found correlations of 0.45 to 0.53 between subjective well-being and meaning in life in a student sample, but higher correlations (0.54-0.80) among people who had experienced adversities. We tested this assumption in the current thesis to gain a better understanding of how life satisfaction and meaning in life interact with adversity among community-residing older adults.

6. Based on previous findings and theories proposed by Shmotkin (2005) and Shrira and colleagues (2011), we hypothesized that life satisfaction and meaning in life would be more strongly correlated among those who reported a higher frequency of hassles.

3.4 Objective 4: Shmotkin and Shrira's Second Assumption

To examine Shmotkin (2005) and Shrira and colleagues (2011) hypothesis that when either subjective well-being or meaning in life is low, the other variable will compensate and be more protective against thoughts of suicide, especially among those with high adversity. Specifically, we assessed a three-way interaction between life satisfaction, meaning in life and frequency of daily hassles in associating with suicide ideation among community-residing older adults. Shrira and colleagues (2011) referenced Heisel and Flett's 2004 findings as a source of indirect support for this assumption, which indicated that purpose in life was most protective against suicide ideation at higher, rather than lower depression.

7. Based on previous findings and arguments made by Shmotkin (2005) and Shrira and colleagues (2011), we hypothesized that when subjective well-being is low, meaning in life would be more protective against suicide ideation among those who report higher adversity than lower adversity. This theoretical interaction is illustrated in Figure 6.

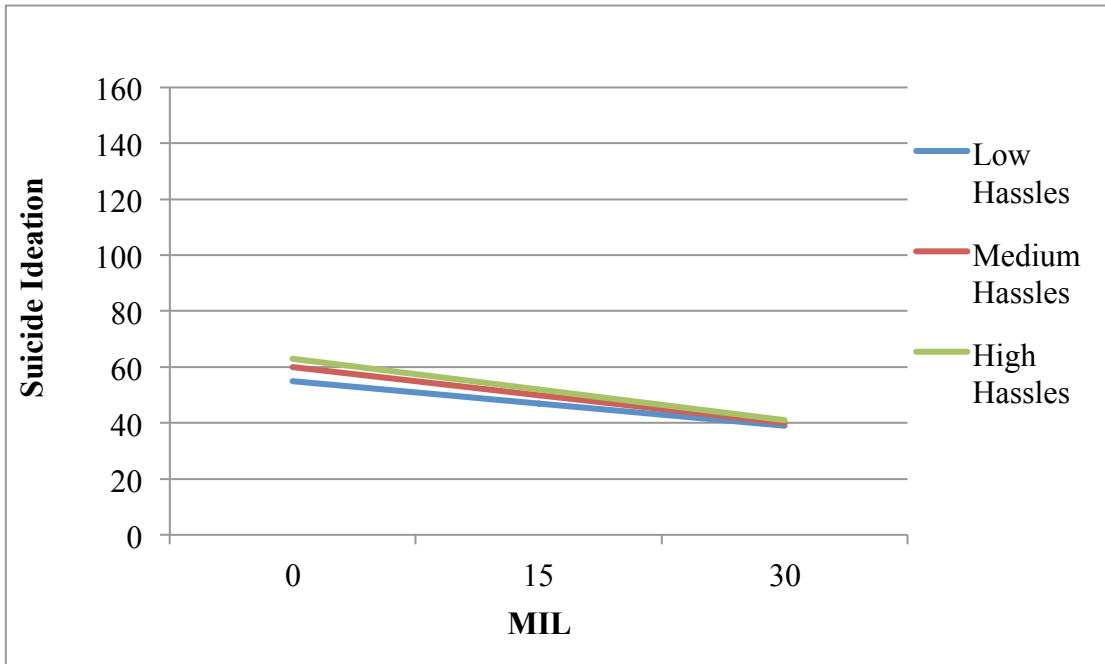
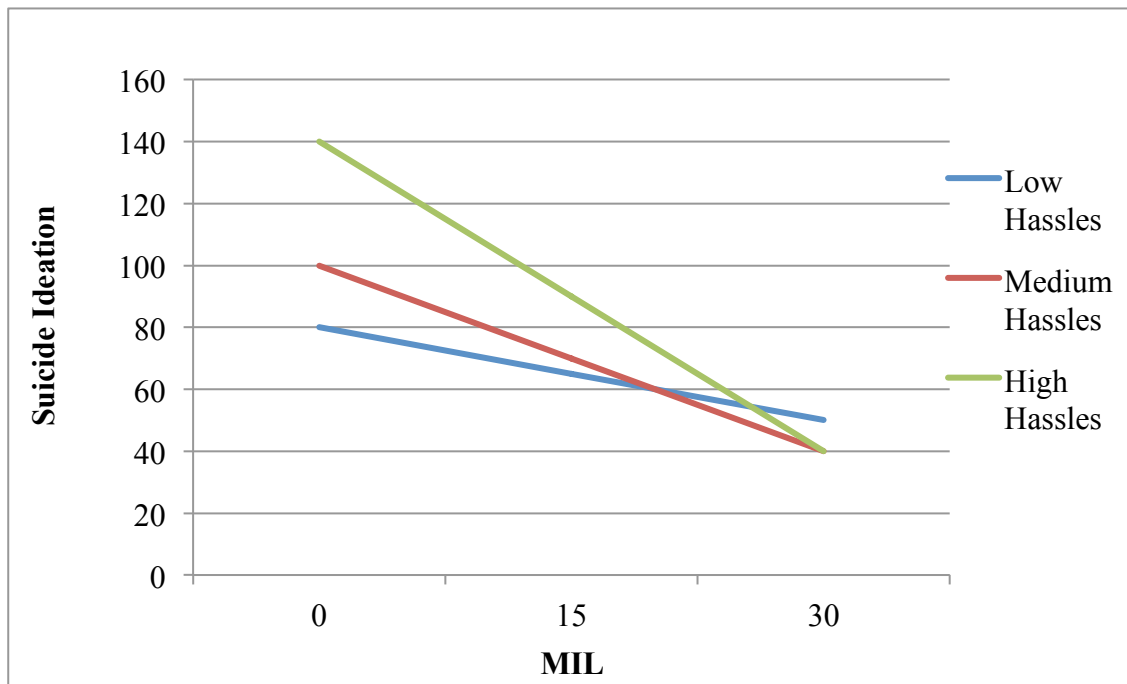
HIGH SWBLOW SWB

Figure 6: Illustration demonstrating a theoretical three-way interaction between SWB, MIL and Daily Hassles, and their association with suicide ideation

Chapter 4

4 Methods

4.1 Study Design

As outlined in Chapter 3, the original larger study was designed to investigate resilience factors associated with suicide ideation among a cohort of community-residing older adults. Socio-demographic information was collected during baseline interviews. Data on psychological risk and resilience factors were collected longitudinally over four different periods including baseline (Time 1), 2-4 weeks (Time 2), 6-12 month follow-up (Time 3) and 12-24 month follow-up (Time 4). Due to attrition at Time 4 and the unavailability of specific measures at Time 1 and 2, the current thesis used Time 3 data to assess cross-sectional associations between life satisfaction, meaning in life, daily hassles and suicide ideation.

4.2 Research Participants

A convenience sample of 173 community-residing older adults was recruited at baseline through local newspaper advertisements and flyers for a “healthy aging study”. Participants were recruited from a variety of locations in Southwestern Ontario, including libraries, community centres, seniors’ organizations, educational programs, exercise and wellness programs, and faith communities” (Heisel & Flett, 2014). “Potential participants were invited to voluntarily take part in a study investigating the role of psychological resiliency factors in promoting health and well-being and in reducing the risk for emotional difficulties among adults 65 years of age or older” (Heisel & Flett, 2014).

The inclusion criteria for this study included: 1) being 65 years of age or older, 2) capable of speaking and understanding English, and 3) capable of providing informed consent and meaningful responses to study measures. The Mini Mental State Examination (MMSE) was used to screen for low levels of cognitive functioning that might impede ability to provide informed consent as well as meaningful participation in this study. A score of 21 or greater on the MMSE was required for inclusion. Participants

were excluded if they appeared distraught, agitated, or otherwise emotionally overwhelmed, intoxicated, psychotic, delirious, delusional, aggressive or intimidating to study personnel. Cognitive functioning was examined in conjunction with interviewer impressions. For instance, if someone appeared too impaired to take part in the study, despite scoring greater than 21 on MMSE, they would have been excluded. After preliminary examination, there were no participants excluded from this study.

4.3 Study Measures

Participants who met initial eligibility criteria were interviewed in-person by the Principal Investigator and/or a trained research assistant. Prior to completing this interview, participants were supplied with a letter of information. Those interested in participating in the study were asked to provide informed consent. Individuals were notified that their participation was voluntary, however, they were invited to continue their participation in all phases of the study, if eligible. Participants were interviewed up to four times during this study and all measures were administered orally.

Throughout the study, participants were encouraged to ask any questions and were also given the opportunity to take as many breaks as needed during the interviews or to discontinue their participation, if they so preferred. Each interview typically took 90 to 120 minutes to complete. If participants at any point appeared distressed or in crisis, a safety protocol was in place to ensure that they were provided with support on-site and/or referred to an appropriate mental health care provider.

This longitudinal cohort study was approved by the Health Sciences Research Ethics Board of The University of Western Ontario.

4.3.1 Demographics

A demographic questionnaire was administered at baseline, assessing participant age, sex, marital status, number of children and grandchildren, living arrangements, current employment status, education and self-rated physical health (see Appendix A).

4.3.2 Outcome

Suicide Ideation

Suicide ideation was assessed using the Geriatric Suicide Ideation Scale (GSIS), a multidimensional measure developed and validated with older adults (Heisel & Flett, 2006). The GSIS is composed of four subscales including 1) Suicide Ideation (e.g., “I want to end my life”), 2) Death Ideation (e.g., “I often wish I would pass away in my sleep”), 3) Loss of Personal and Social Worth (e.g., “I generally feel pretty worthless”), and 4) Perceived Meaning in Life (e.g., “Life is extremely valuable to me”). The GSIS consists of 31 items rated on a 5-point Likert scale, with 1 representing strongly disagree and 5 representing strongly agree. The GSIS yields possible total scores ranging from 31 to 155, with higher scores indicating greater intensity of suicide ideation. For the purpose of this thesis, the Meaning in Life subscale item, “I feel that my life is meaningful” was excluded in all analyses, as this item also appears in the Experienced Meaning in Life (EMIL) scale, the scale that was used to assess meaning in life in the present study.

The GSIS has demonstrated strong psychometric properties among older adults, with a Cronbach alpha of 0.93 for the total scale, and Cronbach alphas ranging from 0.82 to 0.84 for the subscales (Heisel & Flett, 2006). Both short-term (1-2 month period) and long-term (1-2 year period) test-retest reliability were evaluated as strong (Heisel & Flett, 2006). Furthermore, the GSIS was significantly associated with the Scale for Suicide Ideation (SSI), an interview based measure of suicide ideation, demonstrating construct validity (Heisel & Flett, 2006).

4.3.3 Moderators

Life Satisfaction

Life satisfaction, considered the cognitive component of subjective well-being, was assessed using Diener and colleagues (1985) Satisfaction with Life Scale (SWLS). This measure instructs participants to indicate their degree of agreement with five statements assessing their global cognitive judgment of satisfaction with life. These statements include “In most ways my life is close to my ideal” and “I am satisfied with

my life”. Each item is rated on a 7-point Likert scale with 1 representing strongly disagree and 7 representing strongly agree. The SWLS has demonstrated strong psychometric properties, including high internal consistency ($\alpha=0.84$) and test-retest reliability over periods of two months ($r=0.82$).

Meaning in Life

Meaning in life was assessed using Heisel’s (2009) Experienced Meaning in Life Scale (EMIL). This 40-item, 5-point Likert-scored multidimensional measure contains four 10-item subscales designed to assess Frankl’s (1988) constructs of Creative, Experiential, Attitudinal, and Ultimate meaning. According to Heisel (2009), “creative meaning” assesses what we contribute to the world (e.g. “I enjoy participating in recreational activities”); “experiential meaning” assesses what we receive from the world (e.g. “The beauty of nature is uplifting to me”); “attitudinal meaning” assesses our attitudes towards successes and failures (e.g. “I try to find meaning in life even when I am suffering or in pain”); and “ultimate meaning” assesses a deeper spiritual connection or transcendent perception that one has a greater role or purpose in life (e.g. “My spirituality helps me feel connected with something greater than myself”).

All items are scored in a positive direction, with higher scores indicating greater perceived meaning in life. The EMIL possesses strong psychometric properties, with an overall Cronbach alpha of 0.93, and Cronbach alphas of 0.80 for Creative, 0.75 for Experiential, 0.82 for Attitudinal, and 0.92 for Ultimate MIL subscales (Heisel & Flett, 2014). The EMIL has shown strong construct validity and convergent validity with other meaning in life scales (Heisel, 2009). The EMIL has also demonstrated strong divergent validity with measures of suicide ideation and depressive symptom severity (Heisel, 2009).

Daily Hassles

Daily hassles were assessed using the Daily Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981). The Daily Hassles Scale assesses minor day-to-day stressors or hassles that an individual may have experienced in the month prior to the interview

(Kanner, Coyne, Schaefer, & Lazarus, 1981; Scott & Melin, 1998). The scale lists various ways in which a person can feel hassled, from misplacing things to experiencing financial or legal problems. This 118-item measure is rated on a 3-point Likert scale assessing the severity of each hassle, with 1 representing “somewhat severe”, 2 representing “moderately severe” and 3 representing “extremely severe”. The Daily Hassles scale can provide information on the number of stressors, the severity of each stressor, and the cumulative severity of all stressors.

4.3.4 Covariates

Age

Chronological age was assessed, and treated as a confounder, as research has shown that certain age cohorts are at an increased risk of suicidality.

Sex

Sex is considered a confounder in this thesis, based on theoretical grounds that have demonstrated sex differences in suicidality and life satisfaction. For instance, women are more likely to engage in suicide-related behaviours compared to men, yet more men die by suicide. Similarly, empirical data available on sex differences in life satisfaction have found that women have higher rates of negative affect (Nydegger, 2004; Russo and Green, 1993), and lower life satisfaction (Shmotkin, 1990) compared to men.

Depressive Symptom Severity

Depressive symptom severity was measured using the Geriatric Depression Scale (GDS), a brief 30-item YES/NO scored scale that is designed to assess for symptoms of depression among older adults (Yesavage et al., 1983). The GDS yields scores ranging from 0 to 30, with higher scores indicating greater depression severity. The GDS has shown strong psychometric properties among community-residing older adults, with a Cronbach alpha of 0.94, a test-retest reliability of 0.85 and convergent validity with the Zung Self-Rating Scale for Depression (SDS) and Hamilton Rating Scale for Depression (HRS-D) scales (Yesavage et al., 1983). Depression is considered a confounder as it

represents a factor associated with both suicidality and life satisfaction, and is not an intervening variable on the causal pathway. Many studies have demonstrated that those who have been diagnosed with major or minor depression are at an elevated risk of suicidality (Clarke et al., 2004; Raue et al., 2007) and that those who are depressed have a reduced satisfaction with life (Jee & Lee, 2013).

4.4 Statistical Analysis

The following data analyses were conducted using SPSS version 22 (Chicago, IL) with a Type I error rate set at $\alpha = 0.05$, two-tailed.

4.4.1 Descriptive Statistics

Descriptive statistics were reported as frequencies and percentages for categorical variables and means, standard deviations and ranges for continuous variables. Descriptive statistics were generated for demographic variables including sex, age, marital status, number of children and grandchildren, living arrangements, current employment status, and self-rated physical health.

A bivariate analysis was used to assess potential differences in variables of interest between participants with missing data and those with complete data. To determine the normality of each variable, a univariate analysis was performed and a histogram was visually inspected. Inspection of normality among main study variables indicated acceptable levels of skewness and kurtosis; therefore, transformations were not carried out.

Multicollinearity was assessed because objectives 2, 3 and 4 used multiple linear regressions. Multicollinearity occurs when independent variables that are highly correlated with each other are analyzed together in the same regression model. The high correlation inflates the standard errors thus making some variables statistically non-significant that may have been statistically significant had they been analyzed by themselves. Variance Inflation Factors were used to determine whether a variable had to be deleted, with a cutoff value of 10 (Craney & Surlis, 2002).

4.4.2 Objective 1: Inter-Correlations Among Study Variables

A bivariate analysis, using zero-order correlations, was conducted to determine the correlations between various items used in our study including suicide ideation, depression, daily hassles, meaning in life, and satisfaction with life. We hypothesized that there would be significant positive associations between suicide ideation and the risk variables, significant negative associations between suicide ideation and the resilience factors, and significant negative associations among the risk and resilience factors.

4.4.3 Objective 2: The Impact of SWB and MIL on Suicide Ideation, Above and Beyond Clinical Factors

A multiple linear regression analysis was next conducted in which suicide ideation served as the dependent variable and age, sex, depression, satisfaction with life, and experienced meaning in life served as the independent variables. Age, sex and depression were entered as a block on Step 1 of the regression model to determine the amount of variance in suicide ideation scores explained by these factors. Satisfaction with life and meaning in life were entered as a block on Step 2, and the F-change was analysed to determine if the additional explained variance was statistically significant. We hypothesized that life satisfaction and meaning in life would explain significant added variance in suicide ideation scores, above and beyond age, sex, and depressive symptom severity.

4.4.4 Objective 3: Testing Shmotkin and Shrira's First Assumption

Shmotkin (2005) and Shrira and colleagues (2011) argued that life satisfaction and meaning in life would be more strongly correlated in the presence of greater adversity. This assumption was considered an effect modification question and was assessed using a multiple linear regression. In this instance, meaning in life served as the dependent variable and age, sex, life satisfaction and daily hassles served as the independent variables. Age, sex, depressive symptom severity and daily hassles were entered as a block in Step 1 of the regression analysis. Following this, life satisfaction was entered as a block in Step 2. Finally, the interaction term between life satisfaction and daily hassles was entered as a block in Step 3. F change statistics were calculated to

determine if the inclusion of the interaction term significantly contributed to the model. We hypothesized that as the frequency of daily hassles increased, the association between life satisfaction and meaning in life would be strengthened.

4.4.5 Objective 4: Testing Shmotkin and Shrira's Second Assumption

Shmotkin (2005) and Shrira and colleagues (2011) argued that life satisfaction, meaning in life and life events would interact to impact suicide ideation. They postulated that when either life satisfaction or meaning in life was low, the other construct (either life satisfaction or meaning in life) would be more strongly associated with functioning, especially among those reporting greater adversity. To assess this assumption, a three-way interaction among life satisfaction, meaning in life and daily hassles and its association with suicide ideation was investigated using a multiple linear regression. For this objective, suicide ideation served as the dependent variable and age, sex, depression, daily hassles, satisfaction with life, and experienced meaning in life served as the independent variables. Age, sex, depression and daily hassles were entered as a block in Step 1 of the regression analysis. Following this, life satisfaction and experienced meaning in life were entered as a block in Step 2. Step 3 contained the interaction term between life satisfaction and experienced meaning in life, life satisfaction and daily hassles, and experienced meaning in life and daily hassles. Finally, the interaction term between life satisfaction, experienced meaning in life and daily hassles were entered as a block in Step 5. F change statistics were calculated to determine if inclusion of the interaction term significantly contributed to the model. We hypothesized that when either life satisfaction or meaning in life was low, the other construct would be more strongly associated with suicide ideation, especially among those reporting a higher frequency of daily hassles.

Chapter 5

5 Results

The purpose of this thesis was to investigate how life satisfaction and meaning in life may function in the face of daily hassles to protect against thoughts of suicide among a sample of community-residing older adults. In this chapter, I will first summarize descriptive statistics for the demographic variables measured within our sample. Means and standard deviations of all independent, dependent and confounding variables will also be provided. This will then be followed by a correlation matrix, in which I will present the associations, including the strength and direction of relation between all independent, dependent and confounding variables. Next, the results of a multiple linear regression analysis will be presented, assessing whether life satisfaction and meaning in life explained significant additional variability in suicide ideation scores, controlling for demographic and risk factors. Lastly, the findings from all regression analyses testing Shmotkin (2005) and Shrira and colleagues (2011) major theoretical assumptions will be reported along with additional post hoc analyses.

5.1 Descriptive Statistics

Descriptive statistics, including frequencies, means and standard deviations are presented in Table 1 for the present study's demographic variables. Descriptive statistics for the independent and dependent variables are presented in Table 2, which include life satisfaction, meaning in life, depressive symptom severity, frequency of daily hassles, and suicide ideation.

5.1.1 Descriptive Statistics for Demographic Variables

Our sample consisted of 126 older adults (34 men, 92 women), ranging in age from 65 to 95 years ($M=74.5$, $SD=6.0$). The majority of the participants identified North America as their place of birth ($n=77$), followed by the United Kingdom ($n=30$), and Europe ($n=14$), with smaller numbers reporting having been born in South America, Asia or Africa ($n=5$).

Approximately 48% of the participants identified themselves as currently married (n=61), with the remainder divorced (n=24) or widowed (n=33). A majority of the participants identified themselves as being currently involved in a romantic relationship (n=70) and not living alone (n=70). They reported having an average of three siblings (SD=2.7, Range: 0 - 15, n=116), two children (SD=1.4, Range: 0 - 7, n=117), and six grandchildren (SD=4.2, Range: 1 - 25, n=107).

The large proportion of the sample (42%) attended at least some university or college and had an average of 15 years of education. Although approximately 91% of the sample was retired, some participants continued working on either a part-time or full-time basis, or classified themselves as being a volunteer or student (n=12).

Participants were all cognitively intact, with an average Mini Mental State Exam (MMSE) score of 28.9 (SD=1.3). Participants reported an average health state of approximately 83 out of 100 on the EQ5D, which is a measure of health status, suggesting that the majority of the sample regarded their health as good.

5.1.2 Descriptive Statistics for Model Variables

The sample appeared overall healthy and well adjusted. Participants endorsed high levels of meaning in life and satisfaction with life, and low levels of depressive symptom severity, daily hassles, and suicide ideation. The average score of the EMIL was high (M=173.1, SD=18.6) as the maximum possible score on this measure is 200. The sample reported fairly high satisfaction with life, with an average score of 27.6 (SD=5.1). The average score of depressive symptom severity was 3.06 (SD=4.16). The average number of daily hassles reported was 15.39 (SD=12.5), which is fairly low. Similarly, the average suicide ideation was 40.76 (SD=10.19), which is also fairly low. However, it is important to note that there were some participants who approached clinical severity on measures of cognitive functioning (MMSE \leq 26; n=8; Crum et al., 1993; Folstein et al., 1975), depressive symptom severity (GDS \geq 10; n=8; Yesavage et al., 1983), and suicide ideation (GSIS \geq 67; n =3; Heisel & Flett, 2006).

Table 1: General Demographic Variables Measured at Time 3 (n=126)

Variable	Mean (SD)	Frequency (%)
Age	74.5 (6.0)	
Sex		
Women		92 (73.0)
Men		34 (27.0)
Birthplace		
North America		77 (61.1)
United Kingdom (U.K.)		30 (23.8)
Europe (other than U.K.)		14 (11.1)
Other (S. America/Asia/Africa)		5 (4.0)
Highest level of Education Attained		
At least attended Grade School		10 (7.9)
At least attained High School		45 (35.7)
At least attained University or College		52 (42.1)
At least attended a Graduate Program		18 (14.3)
No Response		1 (0.01)
Lives Alone		
Yes		56 (44.4)
No		70 (55.6)
Has Siblings (Yes)		116 (92.1)
Number of siblings	3.1 (2.7)	
Has Children (Yes)		117 (92.9)
Number of children	3.0 (1.4)	
Has Grandchildren (Yes)		107 (84.9)
Number of Grandchildren	5.6 (4.2)	
Has Great-Grand Children (Yes)		17 (13.5)
Number of Great-Grand Children	2.2 (2.4)	
Currently Involved in a Romantic Relationship		
Yes		70 (55.6)
No		55 (44.4)
Marital Status		
Single, never married		2 (1.6)
Married, living with spouse		61 (48.4)
Legally Separated/divorced		25 (19.8)
Widower		33 (26.2)
Other		5 (4.0)
Employment Status		
Full-Time or Part-Time Work		10 (7.9)
Volunteer or Student		2 (1.6)
Retired		114 (90.5)
Cognitive Functioning (MMSE)	28.9 (1.3)	
Self-Rated Health State	83.0 (14.5)	

Table 2: Descriptive Statistics for Independent and Dependent Variables in Model

Variable	N	Mean	Standard Deviation	Minimum Value	Maximum Value	Percentiles		
						25 th	50 th	75 th
EMIL	126	173.1	18.6	122.0	200.0	161.7	177.0	189.0
SWLS	126	27.6	5.1	9.0	35.0	25.0	29.0	31.0
GDS	125	3.1	4.2	0.0	22.0	0.0	2.0	4.0
DH	124	15.4	12.5	0.0	69.0	7.0	13.0	20.0
GSIS	126	40.8	10.2	30.0	80.0	34.0	38.0	44.0

Note: EMIL = Experienced Meaning in Life Scale; SWLS = Satisfaction with Life Scale; GDS = Geriatric Depression Scale; DH = Daily Hassles Scale – Total Frequency; GSIS = Geriatric Suicide Ideation Scale.

5.2 Objective 1: Inter-Correlations Among Study Variables

Zero-order correlation coefficients for our model variables are presented in Table 3. Findings indicated significant positive associations between suicide ideation and risk factors, including depressive symptom severity ($r=0.68$, $p<0.01$) and the frequency of daily hassles ($r=0.41$, $p<0.01$), and significant negative associations with the resilience factors, including life satisfaction ($r=-0.62$, $p<0.01$) and meaning in life ($r=-0.52$, $p<0.01$). The risk factors were all significantly inter-correlated, as were the potential resilience factors. Furthermore, the risk and resilience factors were inversely correlated, as hypothesized.

Table 3: Bivariate Correlational Analyses Between Continuous Variables

Variable	1.	2.	3.	4.	5.
1. SWLS	1.00	0.49**	-0.62**	-0.64**	-0.61**
2. EMIL		1.00	-0.52**	-0.49**	-0.18*
3. GSIS			1.00	0.68**	0.41**
4. GDS				1.00	0.62**
5. DH					1.00

Note: * $p < 0.05$ level (2-tailed); ** $p < 0.01$ level (2-tailed). SWLS = Satisfaction with Life Scale; EMIL = Experienced Meaning in Life Scale; GSIS = Geriatric Suicide Ideation Scale; GDS = Geriatric Depression Scale; DH = Daily Hassles Scale – Total Frequency.

5.3 Regression Analyses

5.3.1 Objective 2: The Impact of SWB and MIL on Suicide Ideation, Above and Beyond Clinical Factors

We conducted a multiple linear regression analysis predicting suicide ideation with life satisfaction and meaning in life, controlling for age, sex, and depression (See Table 4). The demographic and risk factors explained significant variability in suicide ideation scores ($R^2=0.48$, $F_{(3,121)}=37.35$, $p<0.0001$). Addition of life satisfaction and meaning in life to the regression model explained significant added variance in suicide ideation scores ($R^2=0.56$, R^2 -Change= 0.08, F -Change $(2,119)=10.42$, $p<0.0001$). This analysis supports our hypothesis that life satisfaction and meaning in life might protect against thoughts of suicide, even accounting for depressive symptom severity.

Table 4: Multiple Linear Regression Analysis Investigating the Impact of Satisfaction with Life and Meaning in Life on Suicide Ideation (GSIS), Controlling for Demographic and Clinical Factors

Step	Variable	B	Standard Error	β	t
1	Constant	19.44	8.64	-	2.25*
	Age	0.24	0.11	0.14	2.09*
	Sex	-0.72	1.51	-0.31	-0.48
	GDS	1.63	0.16	0.66	10.02***
2	Constant	52.77	11.16	-	4.73***
	Age	0.22	0.11	0.13	2.09*
	Sex	-0.48	1.47	-0.21	-0.32
	GDS	1.02	0.20	0.41	5.02***
	EMIL	-0.10	0.04	-0.18	-2.35*
	SWLS	-0.51	0.17	-0.25	-3.03**

Note: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; $R^2 = 0.48$, $F_{(3,121)} = 37.35$, $p < 0.000$ (Block 1); $R^2 = 0.56$, $\Delta R^2 = 0.08$, $\Delta F_{(2,119)} = 10.42$, $p < 0.001$ (Block 2); GDS= Geriatric Depression Scale; EMIL=Experienced Meaning in Life; SWLS=Satisfaction with Life Scale.

5.3.2 Objective 3: Findings of Shmotkin and Shrira's First Assumption

We next conducted a multiple linear regression analysis to investigate Shmotkin (2005) and Shrira and colleagues (2011) first assumption, which states that life satisfaction and meaning in life are more strongly associated in the presence of greater adversity. Specifically, we investigated the potential moderator effect of the number of daily hassles on the association between life satisfaction and meaning in life, controlling for various demographic and risk factors (See Figure 7).

The interaction between life satisfaction and the frequency of daily hassles explained significant unique variance in EMIL, above and beyond demographic factors, depression severity, SWLS, and DH ($B=-0.04$, $t=-2.44$, $p=0.016$). However, the direction of this modification effect was opposite of what was hypothesized (See Figure 7, Table 5). It was hypothesized that life satisfaction and meaning in life would be more strongly associated at higher levels of daily hassles. Contrary to this hypothesis, our findings suggest that life satisfaction was more strongly associated with meaning in life at lower levels of adversity (see Table 5). Significant main effects emerged indicating that meaning in life was significantly positively associated with life satisfaction ($B=2.41$, $t=5.01$, $p<0.000$) and daily hassles ($B=1.485$, $t=3.373$, $p=0.001$) and significantly negatively associated with depressive symptom severity ($B=-2.13$, $t=-4.16$, $p<0.000$).

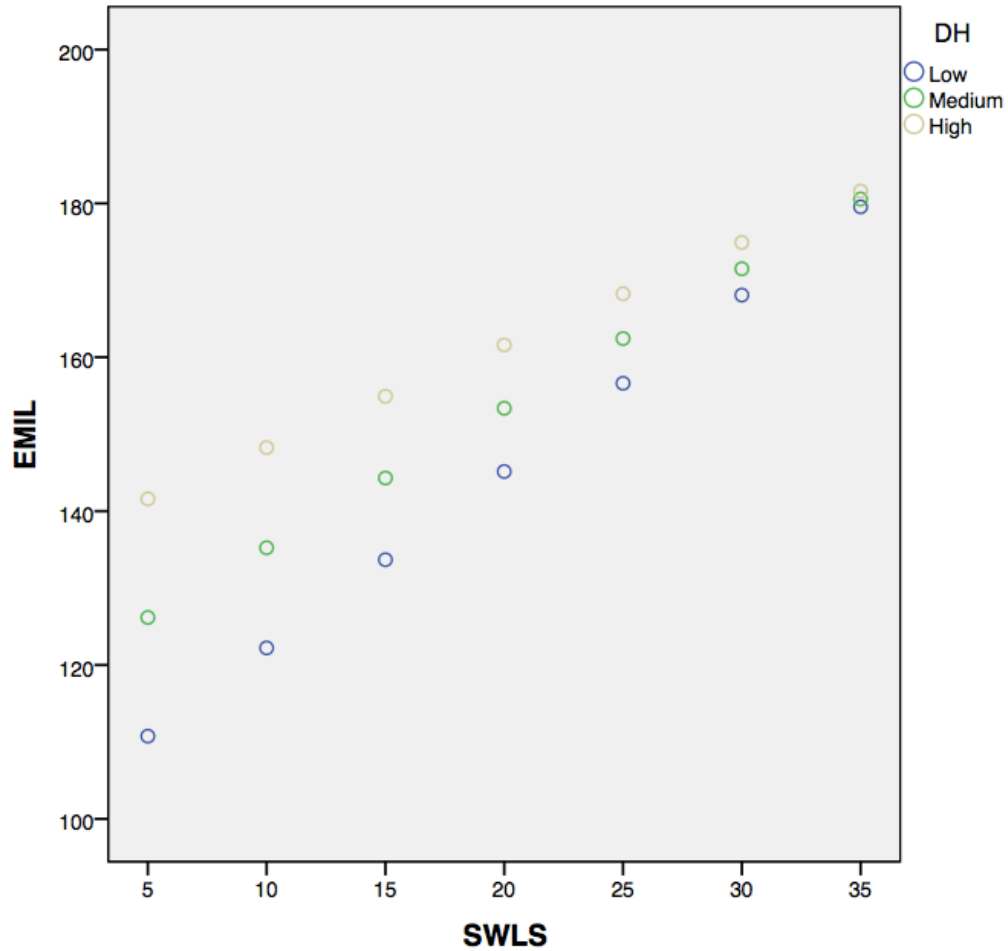


Figure 7: Interaction Effect of Frequency of Daily Hassles (DH) on Life Satisfaction (SWLS) and Meaning in Life (EMIL). *Note:* SWLS = Satisfaction with Life Scale; EMIL = Experienced Meaning in Life Scale, DH= Daily Hassles – Frequency Scale. This figure was created by plotting smoothed theoretical curves for low (-1 SD, where SD = 12.50), mean (M=15.39), and high (+1 SD) DH scores.

Table 5: Multiple Linear Regression Analysis Testing the Interaction of Daily Hassles on Life Satisfaction (SWLS) and Meaning In Life (EMIL).

Step	Variable	B	Standard Error	β	t
1	Constant	178.72	19.05	-	9.38***
	Sex	7.90	3.26	0.19	2.43*
	Age	-0.20	0.25	-0.06	-0.81
	GDS	-2.65	0.49	-0.55	-5.44***
	DH	0.24	0.15	0.16	1.62
2	Constant	121.94	21.83	-	5.59***
	Sex	9.55	3.05	0.23	3.13**
	Age	-0.17	0.23	-0.05	-0.73
	GDS	-1.74	0.50	-0.36	-3.51***
	DH	0.47	0.15	0.32	3.20**
	SWLS	1.63	0.37	0.45	4.45***
3	Constant	94.84	24.11	-	3.93***
	Sex	9.79	2.99	0.24	3.27***
	Age	-0.08	0.23	-0.03	-0.37
	GDS	-2.13	0.51	-0.44	-4.16***
	DH	1.49	0.44	1.01	3.37***
	SWLS	2.41	0.48	0.66	5.01***
	SWLSXDH	-0.04	0.02	-0.57	-2.44*

Note: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; $R^2 = 0.27$, $F_{(4,119)} = 11.03$, $p < 0.000$ (Block 1); $R^2 = 0.38$, $\Delta R^2 = 0.11$, $\Delta F_{(1,118)} = 19.77$, $p < 0.000$ (Block 2); $R^2 = 0.41$, $\Delta R^2 = 0.03$, $\Delta F_{(1,117)} = 5.94$, $p = 0.016$ (Block 3); SWLS = Satisfaction with Life Scale; DH = Daily Hassles Scale – Total Frequency; SWLS X DH = Interaction of SWLS and DH

5.3.3 Objective 4: Findings of Shmotkin and Shrira's Second Assumption

We next investigated Shmotkin (2005) and Shrira and colleagues (2011) second assumption, which states that when either life satisfaction or meaning in life is low, the other variable (either SWB or MIL) would be more closely associated with suicide ideation, especially among those reporting greater adversity. Hence, we conducted a regression analysis with a three-way interaction among life satisfaction, meaning in life, and daily hassles.

Contrary to our hypothesis, the three-way interaction among life satisfaction, meaning in life and frequency of daily hassles did not contribute significantly to the model, explaining only an additional 0.2% of the variance in suicide ideation scores ($B=0.00$, $t=1.25$, $p=0.725$) (See Table 6).

Although Shmotkin (2005) and Shrira and colleagues (2011) provided compelling arguments regarding the nature of associations between life satisfactions, meaning in life and adversity, their theory may potentially be limited to more extreme hostile world scenarios than what was assessed by our study. Our findings indicate that life satisfaction and meaning in life may be valuable resilience factors that can potentially provide an enhanced understanding of late-life suicide ideation. To gain a better understanding of how life satisfaction and meaning in life may function in the presence of daily hassles, we conducted a post-hoc analysis, referring back to Heisel and Flett's (2014) model that was used as a theoretical guide in the original longitudinal portion of this study.

Table 6: Multiple Linear Regression Analysis Testing the Interaction of Life Satisfaction, Meaning In Life and Daily Hassles on Suicide Ideation (GSIS).

Step	Variable	B	Standard Error	β	t
1	Constant	20.26	8.92	-	2.27*
	Sex	-0.84	1.52	-0.04	-0.55
	Age	0.23	0.12	0.14	1.96
	GDS	1.50	0.23	0.59	6.57***
	DH	0.03	0.07	0.04	0.45
2	Constant	56.16	11.45	-	4.91***
	Sex	-0.68	1.48	-0.03	-0.46
	Age	0.20	0.11	0.12	1.83
	GDS	0.94	0.24	0.37	3.88***
	DH	-0.03	0.07	-0.03	-0.36
	EMIL	-0.09	0.04	-0.18	-2.14*
	SWLS	-0.56	0.19	-0.30	-3.03*
3	Constant	24.45	43.73	-	0.56
	Sex	-0.62	1.50	-0.03	-0.41
	Age	0.18	0.109	0.11	1.65

(Table continues)

	GDS	1.21	0.29	0.48	4.26***
	DH	-0.36	0.54	-0.47	-0.67
	EMIL	0.10	0.25	0.19	0.40
	SWLS	0.83	1.42	0.44	0.58
	SWLSXEMIL	-0.01	0.01	-0.98	-1.01
	EMILXDH	0.00	0.00	0.34	0.46
	SWLSXDH	0.00	0.01	0.05	0.21
4	Constant	-0.11	55.39	-	-0.00
	Sex	-0.54	1.51	-0.03	-0.36
	Age	0.18	0.11	0.11	1.68
	GDS	1.20	0.29	0.48	4.21***
	DH	0.53	1.34	0.69	0.39
	EMIL	0.24	0.32	0.47	0.76
	SWLS	1.82	1.98	0.96	0.92
	SWLSXEMIL	-0.01	0.01	-1.68	-1.23
	EMILXDH	-0.00	0.01	-0.84	-0.47
	SWLSXDH	-0.04	0.06	-1.13	-0.69

(Table continues)

SWLSXEMILXDH	0.00	0.00	1.25	0.73
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Note: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; $R^2 = 0.41$, $F(4,119) = 21.04$, $p < 0.000$ (Block 1); $R^2 = 0.51$, $\Delta R^2 = 0.10$, $\Delta F(2,117) = 10.89$, $p < 0.000$ (Block 2); $R^2 = 0.52$, $\Delta R^2 = 0.00$, $\Delta F(3,114) = 1.29$, $p = 0.281$ (Block 3); $R^2 = 0.53$, $\Delta R^2 = 0.01$, $\Delta F(1,113) = 0.53$, $p = 0.470$ (Block 4); GDS = Geriatric Depression Scale; DH = Daily Hassles Scale – Total Frequency; EMIL = Experienced Meaning in Life; SWLS = Satisfaction with Life Scale; SWLSXEMIL = Two-way Interaction term; EMILXDH = Two-way Interaction term; SWLSXDH = Two-way Interaction term; SWLSXEMILXDH = Three-way Interaction term.

5.3.4 Post-Hoc Analyses

The results of objective four were re-analyzed using a conceptual framework that was developed by Heisel and colleagues (2014). This framework is unique in that it transcends other proposed models of suicide by incorporating resilience factors as potential variables that reduce suicide risk. Heisel and Flett (2014) argued that older adults who possess “one or more risk factors” and experience precipitating stressors or other negative life events may be primed for suicide ideation, but by drawing upon internal sources of resilience, they might prevent or alleviate such thoughts even in the face of negative life events (see Figure 8).

The chain of events, depicted in Figure 8, illustrate the various potential pathways that may lead to suicide ideation, suicidal behaviour and ultimately death by suicide. Heisel and Flett (2014) argued that these chain of events might be mitigated by the effects of one or more resilience factors. We sought to explore whether the effects of life satisfaction and meaning in life were both equally important, or whether they would interact with one another to reduce the risk of suicide ideation. We assessed the highlighted portion of Figure 8, using cross-sectional associations. We hypothesized that satisfaction with life and the perception of meaning in life would interact, such that when meaning in life and life satisfaction were high, they would explain more variance in

suicide ideation scores than when one construct was low. We also theorized that satisfaction with life and the perception of meaning in life would serve as potent resilience factors that mitigate risk of suicide ideation among older adults, accounting for the negative influence of depressive symptom severity, a putative risk factor, and daily hassles, serving as a precipitant.

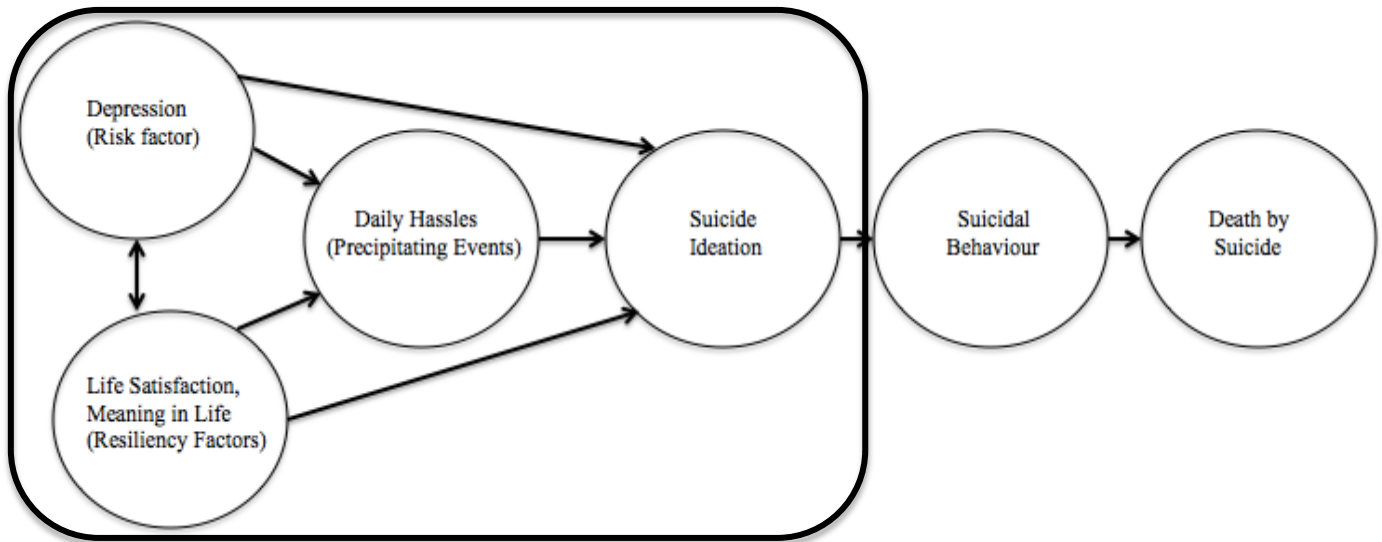


Figure 8: Post-Hoc Analysis – Conceptual Framework. Source: Adapted from (Heisel & Flett, 2014).

Contrary to our hypothesis, life satisfaction and meaning in life did not significantly interact ($B=-0.01$, $t=-1.88$, $p=0.062$), explaining an additional 1.5% of the variance in suicide ideation scores (See Table 7). As hypothesized, even after controlling for demographic factors, depressive symptom severity and the frequency of daily hassles, life satisfaction ($B=-0.56$, $t=-3.03$, $p=0.003$) and meaning in life ($B=-0.09$, $t=-2.14$, $p=0.035$) was significantly associated with suicide ideation scores, explaining an additional 9% of the variance in GSIS scores. This finding offers partial support for our post-hoc hypotheses and suggests that life satisfaction and meaning in life may be potent resilience factors that exert direct effects on suicide ideation. Specifically, these findings suggest that even though an individual may possess one or more risk factors and experience an accumulation of daily hassles, one might draw upon multiple internal resources of resilience including meaning in life and life satisfaction, to help prevent or alleviate thoughts of suicide.

We repeated the analyses for objective two and four replacing the GSIS total scores with the GSIS subscales in order to investigate unique associations among subjective well-being, meaning in life and dimensions of suicide ideation. Results of these analyses demonstrated similar findings to that obtained with the GSIS total scores; therefore, for the sake of parsimony, I only reported findings using the GSIS total scores.

Table 7: Multiple Linear Regression Analysis Testing the Interaction of Life Satisfaction and Meaning In Life on Suicide Ideation (GSIS).

Step	Variable	B	Standard Error	β	t
1	Constant	20.26	8.92	-	2.27*
	Sex	-0.84	1.52	-0.04	-0.55
	Age	0.23	0.12	0.14	1.96
	GDS	1.50	0.23	0.59	6.57***
	DH	0.03	0.07	0.04	0.45
2	Constant	56.16	11.45	-	4.91***
	Sex	-0.68	1.48	-0.03	-0.46
	Age	0.20	0.11	0.12	1.83
	GDS	0.94	0.24	0.37	3.88***
	DH	-0.03	0.07	-0.03	-0.36
	EMIL	-0.09	0.04	-0.18	-2.14*
	SWLS	-0.56	0.19	-0.30	-3.03*
3	Constant	5.68	29.11	-	0.20
	Sex	-0.47	1.47	-0.02	-0.32
	Age	0.18	0.11	0.11	1.67

(Table continues)

GDS	1.20	0.28	0.47	4.34***
DH	-0.05	0.07	-0.07	-0.70
EMIL	0.20	0.16	0.39	1.25
SWLS	1.39	1.05	0.73	1.32
SWLSXEMIL	-0.01	0.01	-1.35	-1.88

Note: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; $R^2 = 0.41$, $F_{(4,119)} = 21.04$, $p < 0.000$ (Block 1); $R^2 = 0.51$, $\Delta R^2 = 0.10$, $\Delta F_{(2,117)} = 10.89$, $p < 0.000$ (Block 2); $R^2 = 0.52$, $\Delta R^2 = 0.01$, $\Delta F_{(1,116)} = 3.54$, $p = 0.062$ (Block 3); GDS = Geriatric Depression Scale; DH = Daily Hassles Scale – Total Frequency; EMIL = Experienced Meaning in Life; SWLS = Satisfaction with Life Scale; SWLSXEMIL = Two-way Interaction term;

Chapter 6

6 Discussion

The purpose of this study was to investigate the individual and combined roles of Subjective Well-Being (SWB) and Meaning in Life (MIL) in protecting against thoughts of suicide in the face of daily hassles among a sample of community-residing older adults. This thesis initially draws upon a theoretical framework proposed by Shmotkin (2005) and Shrira and colleagues (2011), who suggested that SWB and MIL each play unique as well as interrelated roles in promoting adaptation and functioning in the face of adversity. However, post-hoc analyses were also done, incorporating Heisel and Flett's (2014) conceptual framework, which draws largely upon Frankl's work and other theory and research on late-life suicide prevention.

We specifically sought to investigate whether the frequency of daily hassles moderated the association between the cognitive component of SWB, measured using the Satisfaction with Life scale (SWLS), and MIL. We further sought to investigate the combined influence of SWLS, MIL and daily hassles on suicide ideation, accounting for associated risk factors, in order to better understand the unique and joint contributions of these positive variables to suicide risk in later life.

Findings of this study supported previous research by demonstrating significant positive associations between suicide ideation and the risk variables, negative associations between suicide ideation and the resilience factors, and significant negative associations among the risk and resilience factors. Specifically, life satisfaction and meaning in life were each statistically independent predictors of suicide ideation, with significant associations emerging, even after adjusting for age, sex and depressive symptom severity. In contrast, although Shmotkin (2005) and Shrira and colleagues (2011) proposed compelling arguments surrounding the nature of life satisfaction and meaning in life in promoting health and functioning in the face of adversity, results from this study suggest that this may not necessarily be the case, at least among healthy community-residing older adults.

6.1 Life Satisfaction

Diener and colleagues indicated that most people maintain fairly high levels of subjective well-being (Diener & Diener, 1996). Researchers have also argued that life satisfaction does not necessarily decrease with advancing age (Diener & Diener, 1996; Mroczek & Kolarz, 1998). Our findings lend partial supported to these observations, with a majority of the older adult participants reporting fairly high levels of life satisfaction. This is encouraging, given that low life satisfaction has been demonstrated to be a strong predictor of psychological maladjustment and poor mental health, including suicide ideation.

Although the association between suicide ideation and life satisfaction is rooted in strong theoretical and empirically based evidence, there is limited research available that addresses this relation among community-residing older adults. Our review of the literature suggested that there are only three studies that have investigated the association between life satisfaction and suicide ideation with this particular population (Chiu et al., 2012; Chou et al., 2005; Cook et al., 2002). These studies have collectively shown that suicide ideation is significantly correlated with greater life dissatisfaction, and that those who report lower life satisfaction are more likely to experience social dysfunction and depression (Chiu et al., 2012; Chou et al., 2005; Cook et al., 2002). Similar to these studies, our findings have demonstrated that individuals who report greater life satisfaction are more likely to be protected from contemplating suicide. Some researchers have argued that this association may be a reflection of the inter-correlations between life satisfaction, depression and suicidality (Cook et al., 2002); however, our findings suggest that life satisfaction remains a potent resilience factor, even after controlling for the effect of depressive symptom severity. This finding suggests the potentially powerful role of interventions designed to maintain or increase life satisfaction may have in preventing suicide ideation.

It is worth noting that researchers have found that fluctuations in life satisfaction are often influenced by an individual's personality, with temperamental dispositions including extraversion and neuroticism being noted in the literature (Pavot & Diener, 2008; Schimmack & Oishi, 2005). Researchers have also suggested that the influence of

temperament on life satisfaction is mediated by chronic states (Pavot & Diener, 2008). Although personality was not assessed in the present study, we found a significant negative association between life satisfaction and depression, which is consistent with earlier findings (Cook et al., 2002; Berlim et al., 2003; Heisel & Flett, 2004; Chiu et al., 2012; Peterson et al., 2013). Another potential source of fluctuation in life satisfaction is the level of satisfaction with specific life domains including job satisfaction or marital satisfaction (Pavot & Diener, 2008). Domain specific satisfaction was not assessed in our study, however responses to specific questions of the daily hassles measure may tap in to potential domain satisfaction. For instance, individuals may report high marital conflict in the daily hassles scale, which may suggest potential dissatisfaction in the marital domain. This might be a reason why our study found a significant negative association between daily hassles and life satisfaction. Although changes in life domains or life events may initially influence one's level of life satisfaction, researchers have suggested that its impact may be short-lived (Pavot & Diener, 2008). However, there is mounting evidence to suggest that some life events and domain changes do have the potential to be long lasting (Pavot & Diener, 2008). Unlike previous studies, Shrira and colleagues (2011) argued that when SWB is low, individuals could tap into other sources of resilience, such as meaning in life, to help them bounce back to their baseline functioning.

6.2 Meaning in Life

Previous research has suggested MIL to be a potential resilience factor, promoting of mental health and well-being and preventive of suicide risk. In the present study, meaning in life, as measured by the Experienced Meaning in Life Scale (EMIL), was significantly negatively associated with suicide ideation, even after adjusting for age, sex and depressive symptom severity. This finding is consistent with earlier work (Heisel & Flett, 2008; Heisel & Flett, 2014) and provides support for Frankl's (1963) theory that recognition of meaning in life is helpful in protecting against despair and suicide-related thoughts. Our findings also demonstrate that meaning in life is significantly negatively associated with depressive symptom severity, suggesting that higher levels of meaning in life are associated with lower levels of depression. This finding is also consistent with Buchanan's (1993) cross-sectional study of older adults, which reported that the absence

of a clear meaning in life contributed to the presence of depression and suicide ideation. Similar to Buchanan, Krause's (2007) research demonstrated that among a nationally representative sample of retired older adults, greater meaning in life was associated with less depressed affect (Krause, 2009). Krause further identified a significant longitudinal association between meaning in life and longevity, an association that was mediated by health status (Krause, 2009).

Moore (1994) theorized that presence of a clear meaning in life is central to well-being and that it allows humans to make sense of their existence in the face of adversity. Others similarly articulated that meaning may help individuals recognize that stressful situations can be challenging and worth the investment (Halama, 2014). Specifically, researchers have suggested that a strong and stable sense of meaning can contribute to positive reinterpretation of a stressful situation, thereby acting as a buffer against psychopathology (Halama, 2014). Within our study, meaning in life was significantly negatively associated with daily hassles and negatively associated with suicide ideation, controlling for daily hassles. This suggests that high perceptions of MIL may buffer against any future negative consequences caused by stress, by decreasing the degree to which situations are perceived as stressful through the mobilization of various coping resources (Halama, 2014).

6.3 Shmotkin and Shrira's First Assumption

The first major assumption that Shmotkin (2005) and Shrira and colleagues (2011) made was that SWB and MIL promote each other by successfully engaging with the hostile world scenario (HSW). They argued that SWB and MIL would be more closely linked to each other as the HSW intensified. Specifically, in the face of strong threats, happiness-enhancing opportunities might advance one's positive reappraisals of MIL, while restoring a sense of MIL becomes particularly crucial to sustaining one's well-being. There is some indirect support for this theory from King and colleagues (2006), who reported correlations of 0.45-0.53 between SWB and MIL in a student sample, and higher ($r=0.54-0.80$) associations among people who had experienced various adversities. As a result, we hypothesized that life satisfaction and meaning in life

might be more strongly associated when individuals reported a higher frequency of daily hassles.

Our findings indicated that the association between SWB and MIL was moderated by adversity; but, contrary to our hypothesis, this relation was stronger at lower rather than higher frequencies of daily hassles. Interestingly, those who reported a higher frequency of daily hassles in the previous month also had higher levels of meaning than those who reported lower levels of daily hassles. This suggests that adversity may catalyze the search for meaning. Our results demonstrate that a higher frequency of daily hassles may offer some protection to those reporting low life satisfaction by prompting one to search for meaning in the face of adversity, consistent with Frankl's theory. As life satisfaction increases, adversity plays less of a role in influencing meaning in life. Shrira and colleagues (2011) argued that this could be because when life satisfaction is high, those who report adversity are less in need of mobilizing meaning in life to help bring them back to baseline functioning. Although our findings did not support Shrira and colleagues (2011) hypothesis, it may be due to the nature of adversity and how it functions to predict suicide ideation. Shrira and colleagues (2011) testing their theory using a measure of adversity that assessed more extreme and even traumatic lifetime events including bereavement, victimization and war and terrorism-related events. These adversities are traumatic in nature and represent a more extreme hostile world scenario than what was measured by our study. Although daily hassles have been found to be associated with suicide ideation, this lesser, yet somewhat more chronic type of adversity may activate the SWB and MIL differently than might more extreme, yet rarer life events (Lapierre et al., 2012).

6.4 Shmotkin and Shrira's Second Assumption

The second major assumption Shmotkin (2005) and Shrira and colleagues (2011) made was that SWB and MIL complement each other as enhancers of functioning, to an even greater extent when adversity intensifies. Specifically, they hypothesized that when either SWB or MIL was low, the other construct (either MIL or SWB) would become more strongly associated with measures of functioning, especially among those who reported higher adversity. Shrira and colleagues (2011) referenced Heisel and Flett's

(2004) study as offering indirect support of this. Heisel and Flett (2004) found that MIL appeared most protective against suicide ideation at higher, rather than lower levels of depressive symptom severity. Although Shrira and colleagues (2011) did not assess suicide ideation as a potential outcome, they found that there was a significant three-way interaction among SWB, MIL and adversity in associating with functional markers including physical symptoms, self-rated health, disability and depressive symptoms. They argued that when SWB was low, the association between MIL and the functional markers was stronger for those who reported adversity, compared to those who reported no adversity (Shrira et al., 2011). As a result, we hypothesized that there would be a three-way interaction between SWB, MIL and daily hassles in associating with suicide ideation.

Contrary to our hypothesis, we did not find a significant three-way interaction between life satisfaction, meaning in life and the frequency of daily hassles. Although the non-significant three-way interaction may be in part due to a relatively low statistical power, we sought to explain whether life satisfaction and MIL could predict suicide ideation, above and beyond depressive symptom severity and daily hassles. We referred to a conceptual framework proposed by Heisel and Flett (2014) to conduct a post-hoc analysis. Although SWB and MIL did not interact significantly, it did appear as though this term approached significance. Too many variables may have potentially been included in the model for the sample size we had available, thereby using up some of the degrees of freedom. We found both life satisfaction and meaning in life were significantly associated with suicide ideation, even after controlling for age, sex, depressive symptom severity and daily hassles. This finding suggests that although depressive symptom severity and daily hassles may increase the risk of suicide ideation, drawing upon SWB or MIL may help prevent or alleviate such thoughts, even in the face of negative life events.

6.5 Clinical Implications

The findings from this study suggest that older individuals who report lower life satisfaction as well as lower meaning in life may be more likely to report higher levels of suicide ideation. Clinical professionals should be aware that older adults who report life

dissatisfaction or meaninglessness might be more likely to contemplate suicide, especially if they also report high adversity and/or more severe depressive symptoms. The finding that life satisfaction is significantly associated with suicide ideation suggests that older adults who report low life satisfaction may benefit from some sort of intervention. A possible point of intervention may be to teach older adults effective coping strategies, such that the length of time one is dissatisfied is minimized. Similarly, since life satisfaction is partly determined by whether one is capable of recognizing meaning in life, interventions that foster an environment in which individuals are encouraged to search for meaning may help improve life satisfaction and reduce the risk of contemplating suicide or ultimately engaging in suicidal behaviour. For instance, Heisel and colleagues (in press) have been working on implementing, finalizing, disseminating and evaluating Meaning-Centered Men's Groups for men facing retirement, a potentially challenging life transition. The purpose of these groups is to encourage men to discuss intrapersonal and interpersonal transitions associated with retirement, all within the context of searching for meaning (Heisel, in press). Groups or interventions such as these that facilitate inner reflection and encourage camaraderie and social support, may enhance well-being and reduce the risk of various negative health outcomes including depression and suicide ideation (Heisel, in press).

6.6 Limitations

Strengths of the present findings must be considered within the context of the study limitations, which include the use of a small sample size. Specifically, our results may reflect the fact that our analysis relied on 124 participants, which may have made our study too underpowered to assess three-way interactions. Power calculations were not conducted prior to investigating our hypotheses as our analysis relied on previously collected data. However, a post-hoc power calculation indicated that a sample of over 750 people would have been required in order for the observed change in effect size for the three-way interaction found in Table 6 to have reached significance, with a power of 0.80 (<http://www.danielsoper.com/statcalc3/calc.aspx?id=1>). It is recommended that future investigations carry out a sample size calculation in order to ensure that the study is sufficiently powered to detect statistically significant differences. This is further

important as previous research and theory has suggested that it is difficult to test interactions, especially when underpowered (Marshall, 2007).

Although our study provided valuable insight into how life satisfaction and meaning in life may associate with suicide ideation in the face of adversity, the associations discussed were cross-sectional by nature and therefore no directionality could be inferred. Future researchers should investigate these associations through a longitudinal lens in order to help to determine how life satisfaction and meaning in life may predict the onset or exacerbation of suicide ideation in the face of adversity. A follow-up period may help further establish the ability of these variables to predict suicide ideation.

Another potential limitation of this study was that our participants represented a relatively healthy group of community-residing older adults. This limits the generalizability of our study findings to less healthy and/or clinical samples of older adults. Since the participants in this study reported low depressive symptom severity, low daily hassles and low suicide ideation scores, as well as fairly high levels of life satisfaction and meaning in life, it is unclear whether our findings would differ with higher-risk samples. That is, the results from this study may only describe associations between life satisfaction, meaning in life, adversity, and suicide ideation among a fairly healthy group of older adults reporting relatively low overall levels of severity. To address this concern, it would be beneficial to include participants from a broader spectrum of risk, including clinical samples, in order to examine how life satisfaction and meaning in life may function in the face of adversity in these individuals' lives. This research is important, as it would demonstrate whether the associations found in this study are applicable to populations other than our sample of healthy older adults.

6.7 Future Directions and Conclusions

It is recommended that future studies continue to examine the cross-sectional and longitudinal associations between SWB, MIL and the hostile-world scenario to help further clarify the SWB-MIL relationship. Researchers that hope to investigate Shmotkin (2005) and Shrira and colleagues (2011) theory may benefit from using a lifetime

cumulative measure of adversity or a measure that captures a more extreme hostile-world scenario. Perhaps their assumptions hold true with more extreme cumulative threats to well-being. Moreover, future studies may consider accounting for other measures potentially related to suicide ideation such as personality and hopelessness. Finally, future researchers may consider conducting interventions studies to assess the effectiveness of psychotherapy groups such as those designed to enhance meaning in life and subjective well-being.

To our knowledge, this study was the first to assess the roles of life satisfaction, meaning in life and adversity among community-residing older adults, making it a unique contribution to the existing literature. Overall, the results from this study demonstrate that life satisfaction and meaning in life are each negatively associated with suicide ideation. Specifically, the presence of life dissatisfaction and meaninglessness may act as potential indicators of increased suicide risk among community-residing older adults, which practitioners and other health care workers should pay special attention to. Having more-in depth knowledge about how these resilience factors function in the face of adversity may help justify interventions that include methods of improving life satisfaction and meaning in life, especially among community-residing older adults.

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Appendices

Appendix A: Demographics Questionnaire

Before completing the questionnaires, please complete the following questions.

I.D. # _____ Please indicate if you are: Right-handed or Left-handed
(circle one)

Location: _____ Interviewer Initials: _____

Date of Interview: Day _____ Month _____ Year _____

Sex (please select one): Male _____ Female _____

Date of Birth: Day _____ Month _____ Year _____ Age: _____

Place of Birth: _____

What is your ethnic/racial background?: _____

What is your cultural background?: _____

How many brothers and sisters do you have?: _____

What are their ages? _____

Where do they live? _____

What is your Marital Status? (please mark with an X):

_____ Single, Never Married

_____ Married, Living with Spouse Year Married: _____

_____ Married, Not Living with Spouse Year(s) Re-married: _____

_____ Legally Separated Year Separated: _____

_____ Divorced Year Divorced: _____

_____ Widowed Year Widowed: _____

_____ Other (please indicate) _____

Are you currently involved in a romantic relationship?: Yes _____ No _____

Do you live alone?: Yes _____ No _____

If no, who lives with you? _____

How many children do you have?: _____

What are their ages? _____

Where do they live? _____

How many grandchildren do you have?: _____

What are their ages? _____

Where do they live? _____

How many great-grandchildren do you have?: _____

What are their ages? _____

Where do they live? _____

How many great-great-grandchildren do you have?: _____

What are their ages? _____

Where do they live? _____

What is your religious faith?: _____

Do you practice a particular religion?: Yes _____ No _____

How often do you attend religious services?: _____

How often do you engage in religious rituals (e.g. prayer)?: _____

Do you consider yourself a religious person?: Yes _____ No _____

Do you consider yourself a spiritual person?: Yes _____ No _____

What is your primary or spoken language?: _____

What is your employment status (please check all that apply)?:

Full-time work _____ Part-time work _____ Retired _____

Volunteer _____ Unemployed _____ Student _____

Disability _____

Occupational Title (please indicate): _____

If no current occupational title, please indicate past title: _____

How are you supporting yourself now?: _____

What is the highest level of education that you have achieved?: _____

Has there ever been a period of time when you were unable to go to school or work, or finish a program of study, because of a mental health problem?:

What is your Family Doctor's name?: _____ Phone #: _____

If no Family Doctor, check here:

If no Family Doctor, where do you go for health care?: _____

What is your Psychiatrist's name?: _____ Phone #: _____

Please list any physical problems/illnesses that you currently have:

Please rate your current state of physical health by circling one of the numbers below:

1	2	3	4	5	6	7
Extremely Poor			Neutral		Extremely Good	

Curriculum Vitae

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