

Changes in Well-Being Across the Lifespan: A Cross-Sectional

Survey of Young, Middle-Age, and Older Adults

by

Eric Charilaos Karaoylas

A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfillment of the requirements of the degree of

MASTER OF ARTS

Department of Psychology

University of Manitoba

Winnipeg

Copyright © 2010 by Eric Charilaos Karaoylas

Abstract

Changes in well-being across the lifespan are not well-understood because research has not been guided by theory and has focused on hedonic well-being, and to a lesser extent, eudaimonic well-being outcomes. The aim of this study is to better understand differences across generations in well-being using Ryan, Huta, and Deci's (2008) theory. According to this theory, four constructs are responsible for living a full and deeply satisfying life (i.e., eudaimonia) and experiencing pleasure and an absence of psychological pain (i.e., subjective well-being): (1) pursuing intrinsic goals and values, (2) behaving in autonomous and volitional ways, (3) living mindfully with awareness, and (4) behaving in ways that satisfy the basic psychological needs for autonomy, competence and relatedness. Participants consisted of 90 introductory psychology students, 90 of their parents, and 90 of their grandparents. These individuals completed a battery of questionnaires measuring personal goals, aspirations, mindfulness, basic psychological needs, mental health, and multiple measures of hedonic and eudaimonic well-being. Results indicated that age differences across generations were positively associated with the pursuit of intrinsic goals and values, autonomous behaviour, mindfulness, and mental health. Although age had a positive effect on the basic psychological need for autonomy, it had no effect on relatedness, and a negative effect on competence. The mixed influence of age on basic psychological needs may explain why older adults experienced greater levels of hedonic well-being but lower levels of eudaimonic well-being. These findings shed important new light on potential reasons for inconsistencies in previous research examining changes in well-being over the lifespan.

Acknowledgements

I would like to thank my advisor Dr. Corey Mackenzie, for his continuous mentorship and guidance throughout this project, and for the past five years. I would also like to thank the rest of my advisory committee, Drs. Ed Johnson and Verena Menec, for their support, flexibility, and feedback. Furthermore, I would like to thank Ewa Cerda-Llanos for her consistent encouragement and editing assistance, Uliana Nevzorova for her data collection support, and Camillo Parrado-Hurtado and Anton Svendrowski for their suggestions and consultations on statistical analyses, which were much appreciated. In addition, I would like to thank Drs. Bishop and Ringo for helping me get through a difficult year. Finally, I would like to dedicate this thesis project to the memory of Dr. Chi Hi Yau and my family.

Table of Contents

ABSTRACT.....	2
ACKNOWLEDGEMENTS.....	3
LIST OF TABLES.....	6
LIST OF FIGURES.....	7
CHAPTER I: INTRODUCTION & REVIEW OF THE LITERATURE.....	8
<i>Statement of the problem.....</i>	<i>8</i>
<i>Limitations in current methods of assessing well-being.....</i>	<i>8</i>
<i>Rejuvenating an old way of conceptualizing well-being.....</i>	<i>9</i>
<i>Hedonic well-being and aging.....</i>	<i>11</i>
<i>The nature of eudaimonia.....</i>	<i>14</i>
<i>Review of empirical research on eudaimonia.....</i>	<i>16</i>
<i>Basic psychological needs.....</i>	<i>19</i>
<i>Autonomous and controlled motivation with personal goals.....</i>	<i>22</i>
<i>Intrinsic and extrinsic aspirations.....</i>	<i>26</i>
<i>Mindfulness.....</i>	<i>28</i>
<i>HWB, Eudaimonia, and sociodemographic factors.....</i>	<i>29</i>
<i>Study hypotheses.....</i>	<i>32</i>
CHAPTER 2: METHOD.....	33
<i>Participants.....</i>	<i>33</i>
<i>Response rates.....</i>	<i>33</i>
<i>Procedures.....</i>	<i>33</i>
<i>Measures.....</i>	<i>35</i>
<i>Data accuracy and completeness.....</i>	<i>40</i>
<i>Analyses.....</i>	<i>41</i>
CHAPTER 3: RESULTS.....	43
<i>Age group and covariate predictors of the basic psychological needs.....</i>	<i>44</i>
<i>Age group and covariate predictors of motivational constructs.....</i>	<i>45</i>
<i>Age group and covariate predictors of hedonic well-being.....</i>	<i>47</i>
<i>Age group and covariate predictors of eudaimonic well-being and mental health.....</i>	<i>48</i>
CHAPTER 4: DISCUSSION.....	49
<i>The effects of age on the basic psychological needs.....</i>	<i>50</i>
<i>The effects of age on the motivational constructs.....</i>	<i>54</i>
<i>The effects of age on well-being.....</i>	<i>57</i>
<i>The effects of age on mental health.....</i>	<i>61</i>
<i>Limitations of the current study.....</i>	<i>63</i>
<i>Future research considerations.....</i>	<i>64</i>
<i>Practical applications of this study.....</i>	<i>65</i>

<i>Summary</i>	67
<i>References</i>	69
APPENDIX A. BASIC PSYCHOLOGICAL NEEDS QUESTIONNAIRE.....	94
APPENDIX B. PERSONAL GOALS QUESTIONNAIRE.....	96
APPENDIX C. ASPIRATIONS INDEX SCALE.....	99
APPENDIX D. MINDFULNESS ATTENTION AWARENESS SCALE.....	101
APPENDIX E. POSITIVE AFFECT NEGATIVE AFFECT SCHEDULE.....	103
APPENDIX F. SATISFACTION WITH LIFE SCALE.....	104
APPENDIX G. SELF REALIZATION/EUDAIMONIA SCALE.....	105
APPENDIX H. VITALITY SCALE.....	107
APPENDIX I. DEPRESSION ANXIETY STRESS SCALE 21.....	108

List of Tables

<i>Table 1. Participant Covariate Characteristics And Cramer's V.....</i>	80
<i>Table 2. Participant Outcome Measure Characteristics.....</i>	81
<i>Table 3. Predictors Of Autonomy, Competence, And Relatedness.....</i>	82
<i>Table 4. Correlations Between Generations, Autonomy, Competence, And Relatedness.....</i>	84
<i>Table 5. Predictors Of Relative Autonomy, Relative Aspirations, And Mindfulness.....</i>	85
<i>Table 6. Correlation Between Generations And Motivation Constructs.....</i>	87
<i>Table 7. Predictors Of Positive Affect, Negative Affect, And Satisfaction With Life.....</i>	88
<i>Table 8. Correlations Between Generations, Positive Affect, Negative Affect, and SWLS...</i>	90
<i>Table 9. Predictors Of Positive Affect, Negative Affect, And Satisfaction with Life</i>	91
<i>Table 10. Correlations Between Generations, Eudaimonia, Vitality, and Mental Health...</i>	93

List of Figures

<i>Figure 1.</i> Ryan, Huta, & Deci's (2008) Theoretical Framework Of Well-Being	78
<i>Figure 2.</i> Continuum Of Self-Determination	79

One of the main demographic changes that society will encounter in this millennium is a substantial increase in the proportion of older adults. In the 1980's, Canadians over the age of 65 accounted for 10% of the population. In contrast, by the year 2031, adults over the age of 65 are expected to account for nearly 25% of the population (Belanger, Martel, & Caron Malenfant, 2005). Similarly, by the year 2020, adults over the age of 60 are expected to account for 25% of United States population and 30% of the population in Germany and Japan (Roszak, 1998). This demographic shift will have serious implications for both our mental and physical health care systems. As a result, it is crucial that we understand the current well-being of older Canadians to prepare for these expected demographic changes. Unfortunately, the current understanding of how well-being changes across the adult lifespan is poorly understood, in part because of limited theoretical frameworks addressing this complex phenomenon. The methods that have been widely utilized to assess whether aging is associated with improvements or deteriorations in well-being have led to inconsistent findings. The objective of this thesis is to better understand age differences in well-being using a novel theoretical framework.

Limitations in Current Methods of Assessing Well-Being

Hedonic well-being (HWB) has received the most interest and attention in lifespan well-being research (Ryff & Singer, 2008). Assessing this construct involves measuring three components: positive affect, negative affect and life satisfaction. Together, these constructs are often referred to as Subjective Well-Being (SWB; Diener, 1984; Waterman, 2008). Being happy is often equated with a high degree of positive affect, a low degree of negative affect, and a high degree of subjective satisfaction with one's life (Diener, 1984; Ryan, Huta, & Deci, 2008). Although SWB can be measured reliably with a high degree of validity, its development has been atheoretical (Ryff & Singer, 2008) and theorists have claimed that using this construct to

measure well-being exclusively offers a limited perspective of wellness (Ryff, 1989a, b, c; Ryan, Huta & Deci, 2008; Waterman, 2008; Waterman, 2010). Despite having a relatively restricted review of well-being, hedonistic psychology does provide valuable information and has a clear and measurable target for research, which is one of its major advantages (Waterman, 2008).

Defining well-being in such a limited manner ultimately leads to the belief that well-being can be attained without achieving a sense of depth, self realization, and meaning (Ryan, Huta & Deci, 2008). Thus, being happy from this hedonic perspective does not necessarily mean that individuals are psychologically well (Deci & Ryan, 2008). Eudaimonic well-being focuses on actualizing one's true potential, the content of one's life, and the processes involved in living well (Deci, Ryan, Huta, 2008). Unfortunately, existing research suggests that hedonistic well-being increases with age, whereas eudaimonic well-being decreases with age. I am not aware of research, however, that has assessed both constructs within a single study, or done so using a conceptual framework that combines these constructs.

Rejuvenating an Old Way of Conceptualizing Well-being

Attaining HWB has often been associated with maximizing pleasure and minimizing pain. Although this is imperative to well-being, this conceptualization of well-being does not address the eudaimonic processes involved in living well. Ryan, Huta and Deci (2008) developed a theory of well-being which accommodates this broader perspective. The theory proposes that four distinct constructs are responsible for achieving what Aristotle referred to as eudaimonia or the "good life". Three of the constructs are responsible for satisfying the fourth construct (see figure 1). The three motivational constructs are: Being mindful, pursuing intrinsic goals as opposed to extrinsic goals, behaving in autonomous ways as opposed to behaving in controlled ways. When individuals are mindful, when they pursue intrinsic goals, and when they

behave autonomously, the theory suggests that they will satisfy their basic psychological needs for autonomy, competence, and relatedness, which in turn contributes to overall physical and psychological well-being.

The objective of this thesis is to better understand age differences in well-being using this novel framework from a lifespan perspective. Conducting this research will aid in providing a better understanding of how certain motivational constructs interrelate with age and affect well-being. In addition, investigating this model of well-being may help to resolve some of the controversy that currently exists as to whether or not well-being increases with age. Finally, examining this model will also provide information about various motivational constructs that may be helpful in achieving psychological health over the life span.

With respect to the motivational constructs employed in the model, only two of the four variables have been examined from a lifespan perspective, and integrating them in a cohesive fashion should offer a more comprehensive view of age differences in well-being. Before describing eudaimonic theory and its application to lifespan changes in well-being and the environment, I will review research concerning lifespan changes in HWB.

Hedonic Well-Being and Aging

Lifespan research focusing on changes with age in negative affect, positive affect, and life satisfaction has generally found that HWB increases with age. I will review this literature and then discuss how Ryan, Huta, and Deci's (2008) theory may be helpful in beginning to resolve the controversy as to why HWB increases across the lifespan, whereas eudaimonia appears to decrease. HWB consists of an affective component and a cognitive component. The affective part consists of evaluating distinct positive and negative emotions, whereas the

cognitive part asks people to evaluate the extent to which their current life resembles their envisioned ideal life (Kashdan, Biswas-Diener & King, 2008).

With respect to the affective component of HWB, it is commonly believed that older adults experience more negative affect than their younger counterparts. However, for the most part, research does not support this contention. Several cross-sectional studies have found no age related differences in the occurrence and amount of negative affect across the lifespan (Malatesta & Kalnok, 1984; Shmotkin, 1990). One large study utilized a diverse sample of 60,000 individuals ranging in age from 20 to 99 from 43 countries and found no relation between age and negative affect (Diener & Suh, 1997). A second study employed a sample of 340,847 individuals and found that specific indicators of negative affect (worry, anger, stress) continued to decrease into the 80's, whereas sadness showed an inverted U-shaped pattern across the adult lifespan with the highest point in mid-life. In a third study, Carstensen, Pasupathi, and Nesselrode (2000) utilized a daily sampling technique for a thirty day period and found that the frequency of negative emotions decreased with age.

Longitudinal findings generally support the cross-sectional findings that negative affect either remains stable or declines with age (Kunzmann, 2008; Kunzman, Little, Smith, 2000; Stacy & Gatz, 1991). In one study, older adults experienced less negative affect in comparison to younger adults but when retested at a 14 year follow up, the oldest participants' level of negative affect remained stable, whereas younger participants experienced a decline in negative affect (Stacey & Gatz, 1991). In a second study of older adults, negative affect was experienced more frequently in the oldest participants as opposed to the young-old (60-80 years) participants; however no changes in affect were found longitudinally (Ferring & Flipp, 1995). In conclusion, existing research with a large enough sample of older adults has generally found that negative

affect decreases until individuals reach the age of 60 years of age (Kunzmann, 2008; Kunzman, Little, Smith, 2000; Stacy & Gatz, 1991) and that it may even decrease into the 80's (Stone, Schwartz, Broderick, & Deaton, 2010).

In contrast to the relatively equivocal findings regarding changes in negative affect with age, there has been less consistency in research findings regarding how positive affect changes with age. Several cross-sectional studies have found significantly lower levels of positive affect among older than younger adults (Bradburn, 1969; Diener & Suh, 1997, Kuzmann, Little, & Smith, 2000; Shmotkin, 1990), although contrary findings have also been reported. One study found increases in positive affect with age among extraverted individuals, although the oldest participants in this study were only 74 years old (Mroczek & Kolarz, 1998). Another study found no associations with the frequency and intensity of positive affect with age (Carstensen, Pasupathi, & Nesselroade, 2000), whereas Stone et al. (2010) found a U-shaped curve with positive affect at its lowest in middle age. These authors contend that the increases they found in positive affect may be due to their large sample, which allowed them to detect smaller associations in positive affect than previous research had been able to detect. Longitudinal research examining positive affect has found that it remains stable before declining after the age of 60 (Bradburn, 1969; Diener & Suh, 2007; Kunzmann, 2008). In conclusion, cross sectional designs shows contradictory findings about changes in positive affect across the lifespan and longitudinal studies have indicated that positive affect remains stable until about the age of 60 and then begins to decline.

With respect to life satisfaction, the majority of studies assessing this construct have been cross-sectional and have generally found that life satisfaction increases with age (Diener, Suh, Lucas & Smith, 1999; Horley & Larvey, 1995), which is often contrary to societal beliefs that

younger individuals experience more life satisfaction than older adults. Cross-sectional research assessing cross-cultural environments has also generally found a slight upward trend in life satisfaction from the 20s to the 80s (Diener & Suh, 1997; Inglehart, 1990). Declines in life satisfaction are also occasionally found but this effect typically disappears when other demographic factors such as income are controlled for (Schmotkin, 1990). A recent study assessing global well-being (GWB), which is a similar construct to life satisfaction, found U-shape patterns in life satisfaction for Americans and Europeans. Americans males and females reach their lowest point of GWB from their late 30s to their early 50s, whereas European men and women reach their lowest point around their mid 40's (Blanchflower & Oswald, 2008). Similarly, Stone et al, (2010) found that GWB exhibited a U-shaped pattern, where it reached its lowest point at around the age of 50 but generally improved after this age. In conclusion, cross sectional designs typically shows that life satisfaction increases with age or presents a U-shaped pattern when the Global Well-Being construct is used (Diener, Suh, Lucas & Smith, 1999).

In summary, research on changes in well-being across the adult life span has typically defined well-being narrowly, in terms of positive affect, negative affect, and life satisfaction. Furthermore, research in this area has tended to be atheoretical. Despite these limitations, research in HWB literature is relatively consistent in suggesting that people experience greater well-being with age. Specifically, the majority of evidence suggests that as people age they experience less negative affect, stable positive affect, and increases in life satisfaction when covariates are controlled for. Although HWB literature is fairly consistent and important, it needs to be incorporated into a broader framework for conceptualizing well-being.

Ryan, Huta, and Deci's (2008) theory of eudaimonia will allow me to explore four key motivational factors and their associations with young, middle-aged, and older adults' well

being. This theory is amenable to empirical investigation and will provide theory-guided methods of examining changes in “the good life” with age, in contrast to the large body of literature exploring HWB in general and changes in HWB across the lifespan.

The Nature of Eudaimonia

Aristotle stated that the highest of all goods achievable by human action was “eudaimonia” (Broadie & Rowe, 2002). Aristotle contended that authentic happiness stems from doing what is worth doing and what is righteous. He defined eudaimonia as living in accordance with reason, with moderation and aiming toward excellence and the realization of a complete human life. Aristotle’s eudaimonia is thus characterized as living well, and entails being actively engaged in excellent activity, reflectively making decisions, and behaving voluntarily toward ends that represent the realization of our highest human natures (Ryan, Huta, & Deci, 2008). Specifically, it is a way of living that is focused on what is intrinsically worthwhile to human beings (Broadie & Rowe, 2002). The concept of eudaimonia focuses on the processes of what living well entails, whereas HWB focuses on the specific outcomes of well-being (Ryan, Huta, & Deci, 2008).

Bradburn (1969) may be partly responsible for focusing well-being research over the past 40 years on hedonistic outcomes. In his work on positive and negative affect, Bradburn used happiness to gauge if people were living successfully or not. He referenced *Nicomachean Ethics* (1947), which states that the highest of all human goods is happiness. However, it is questionable that the Greek word eudaimonia was properly translated as happiness (Ryff, 1989b; Ryff & Singer, 2008). A translation of this magnitude would claim that hedonism was equivalent to eudaimonia, which was contrary to the Greeks’ contention of reaching one’s true potential and doing things for the right reasons (Waterman, 1984). If eudaimonia had been

translated accurately and the focus of well-being had been on actualizing one's true potential, the research on well-being over the past several decades would most likely have taken a different, broader path (Ryff, 1989b; Ryff & Singer, 2008). As a result, the scales utilized to measure affect and well-being are largely atheoretical and contain obscure definitions of well-being. In addition, these psychometric tools were created in an era where aging was viewed as a negative event and positive growth in the later years was often neglected (Ryff, 1989b; Ryff & Singer, 2008).

Review of Empirical Research on Eudaimonia

Over the past 20 years, three primary theoretical perspectives on eudaimonia have emerged. Although the theoretical work of Waterman (1993), Ryff and colleagues (1989 a, b, c; 1991, 1995), and Ryan, Huta, and Deci (2008) varies, the underlying philosophy of what eudaimonia entails is where they converge. As a result of different perspectives on eudaimonia espoused by these researchers, they have developed different methods to assess this construct, and only Ryff's work has focused heavily on changes in eudaimonia across the lifespan.

Waterman (1993) proposes that eudaimonia occurs when there is a high level of self concordance in people's lives. He states that if individuals experience congruence between the activities they engage in and the values and aspirations they espouse, then eudaimonia will ensue. Therefore, if people are self aware, able to recognize their finest abilities, and engage in activities that will bring about their greatest potential, identity development will ensue (Waterman, Schwartz & Conti, 2008). Waterman developed the Personally Expressive Activities Questionnaire (PEAQ) to measure both hedonic and personal expressiveness feelings (Waterman, 1993). The term "feelings of personal expressiveness" is a synonym for eudaimonia when the level of analysis is strictly psychological. His research has shown that if an individual

experiences hedonic enjoyment he or she will not necessarily experience eudaimonia, whereas if a person experiences eudaimonia he or she will essentially experience hedonia (Waterman, 1993). Eudaimonia and hedonia are highly correlated and most researchers agree that there is a considerable overlap between the two. At present, no research has been conducted examining life span changes in feelings of personal expensiveness using the PEAQ.

Ryff's (1989; a, c) approach to assessing eudaimonia and psychological well-being in general is theoretically sound and was formed by integrating various theoretical perspectives. Ryff's (1989; a, b, c) Psychological Well-being (PWB) Scale assesses well-being as a global or individual difference variable, whereas Waterman and colleagues' (1993) PEAQ assesses eudaimonia more narrowly (Deci & Ryan, 2008). The theories she used to create her multidimensional scale of psychological well-being include: Buhler's four basic human tendencies (Buhler & Marschak, 1968), Eric Erikson's (1959) psychosocial stages of change, Jahoda's (1958) view of positive mental health, and Maslow's (1968) and Roger's (1961) theories of self actualization. Ryff's (1989a, 1989b, 1989c, 1991, & 1995; Ryff & Singer, 2008) instrument examines six aspects of well-being: Self acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth. The Purpose In Life and Personal Growth subscales are considered the most direct measures of eudaimonia (Ryff, 1989b).

Ryff has conducted life span research utilizing younger adults, middle-aged adults and older adults with the Psychological Well-Being Scale. In her studies, she has consistently found increases with age for the Autonomy and Environmental Mastery subscales, decreases with age for the Purpose In Life and Personal Growth subscales, and no consistent effects of age on the Positive Relations With Others and Self Acceptance subscales (1989a, 1989b, 1989c, 1991, &

1995). With respect to reductions in eudaimonia (Purpose In Life, Personal Growth) with age, Ryff highlights that this may be due to societal constraints of providing older adults with meaningful roles and opportunities for continued growth (Ryff & Singer, 2008). However, she contends that certain individual difference variables can lead to positive correlations between aging and eudaimonia. For example, older adults who engage in formal volunteering had higher levels of purpose in life than individuals who were not volunteering. As well, older adults with higher levels of education had higher levels of Personal Growth and Purpose In Life than individuals with less education (Ryff & Singer, 2008). Although these two factors have increased Personal Growth and Purpose In Life levels, other motivational factors may also be important in achieving eudaimonia. Although Ryff's work is innovative and dynamic, it seems counterintuitive that older adults would decline on eudaimonia given that several theories that the scale is based on view aging as being associated with growing and self actualizing. In addition, Waterman (2010) has raised concerns about the limitations of this scale to assess eudaimonia because its theoretical underpinnings do not integrate the philosophical roots of eudaimonia set forth by Aristotle.

Ryan, Huta and Deci (2008) examine eudaimonia via self determination theory (SDT; Deci & Ryan, 1985). Their new theory includes additional motivational constructs to living well that Waterman (2003) and Ryff (2008) have not yet examined in general, or from a lifespan perspective. This new theory proposes that three distinct motivational factors are essential to satisfy the basic psychological needs of autonomy, competence, and relatedness, which will in turn lead to eudaimonic and hedonic well-being. The three motivational factors they propose are: Pursuing intrinsic goals as opposed to extrinsic goals, behaving in autonomous ways rather than controlled ways of living, and being mindful. Although Ryan and colleagues' theory of

eudaimonia is arguably more comprehensive than Waterman's and Ryff's, it also has the least amount of empirical support, especially from a lifespan perspective. In testing this model, several questions can be generated from a life span perspective. Do older adults become more mindful as they age? Are older adults more eudaimonic than their younger peers? Does assessing both hedonic and eudaimonic aspects of well-being assist in improving our understanding of age differences in well-being? Although researchers have not yet examined Ryan, Huta, and Deci's (2008) theory in a single study, research does exist focusing on different facets of this theory. I will now review this research, including studies that have explored age differences in them.

Basic Psychological Needs

SDT hypothesizes that three basic psychological needs are essential to experience psychological growth, integrity and well-being: autonomy, competence, and relatedness (Ryan & Deci, 2000). The need for autonomy refers to volition, self governance and congruence between the activities that an individual performs and their own feeling of choice (Sheldon & Elliot, 1999). The need for competence refers to feeling optimally challenged by the tasks and duties one does but also feeling effective in facing these challenges (Ryan & LaGuardia, 2000). The need for relatedness refers to feeling connected to and cared about by others (Deci & Ryan, 2008). According to SDT, the satisfaction of these needs is universal and negligence of any of them will result in decreased eudaimonia and HWB (Ryan & LaGuardia, 2000; Ryff & Singer, 1998). If individuals consistently experience adverse environments or events that disrupt the fulfillment of their basic psychological needs, they will most likely develop need substitutes to cope with these deficiencies. Although the need substitutes can ameliorate current

circumstances, they typically thwart the acquisition of future basic psychological needs (Ryan & Deci, 2000).

The majority of SDT research has focused on children, adolescents, college students, and working age adults. In contrast, there has been a lack of research on SDT with older adults (Ryan & LaGuardia, 2000). Coleman (2000) proposed that fulfilling the basic psychological needs should become more difficult as one ages and that older adults probably modify their efforts accordingly. He suggested that the difficulty in fulfilling basic psychological needs as we grow older may be due to societal expectations, in which individuals' identities are closely associated with their careers. SDT speculates that regardless of age, individuals will gravitate towards domains, activities, and relationships in life where their basic psychological needs can be satisfied (Ryan & LaGuardia, 2000).

A small body of research has examined each of the basic psychological needs from a lifespan perspective. For example, researchers have investigated autonomy among older adults, focusing primarily on individuals in nursing homes. Vallerand, O'Connor, & Blais (1989) compared two nursing homes; one that was classified as high in support for autonomy and a second that was classified as low in support for autonomy. The results of this study showed that there was comparable life satisfaction between individuals living in the community and those living in high autonomy nursing homes, whereas individuals living in low autonomy nursing homes had poorer psychological outcomes. A second study of nursing home residents found that those who felt the most autonomy in activities of self care (religion, interpersonal, recreational) had lower rates of depression and higher levels of self esteem, general health, satisfaction with life and psychological adjustment (Vallerand & O'Connor, 1989). In addition, participants in a nursing home who reported higher autonomy for daily activities had decreased mortality rates

one year later (Kasser & Ryan, 1999). Ryff (1995) asked young adults, middle-aged adults, and older adults to rate their perceived autonomy on her Psychological Well-Being Scale and found that autonomy increased throughout the life span, in particular from youth to middle-age. However, Ryff's conception of autonomy differs from that of SDT. Although both theories view well-being as a eudaimonic process, SDT views the basic psychological needs as antecedents of well-being, whereas Ryff's theory views the basic psychological needs as indicators of well-being (Ryan & Laguardia, 2000).

With respect to the basic psychological need for relatedness, several studies have examined the need for positive relationships with others across the lifespan. Ryff examined this psychological need with young adults, middle-aged adults, and older adults and has generally found that, in general, it does not vary with age (Ryff, 1989b, 1991, 1995). According to socioemotional selectivity theory, as adults age, they are more likely to gravitate towards social support where emotional quality is high and shy away from social relationships that are instrumental or informative in nature (Carstensen, Isaacowitz, & Charles, 1999). In support of this theoretical position, a study of the social networks of adults 60 to 104 years of age found that the oldest participants had fewer social partners in comparison to younger participants. However, although peripheral social support declined in the oldest participants, most likely due to the death of their friends, there was little difference in the number of emotionally close social partners. It seems that as individuals age, there is a selective social trimming of nonessential friends, where emotionally close partners are emphasized (Lang & Carstensen, 1994). In addition, Sheldon and Kasser (2001) found that older persons were not significantly lower in intimacy strivings than younger adults, suggesting that this type of striving is equally salient across the life span.

The need for competence has received the least amount of empirical attention from a lifespan perspective. The aging process often produces functional losses, which may reduce the ability to perform certain activities. Although the initial loss may cause despair, older adults may still be able to preserve their competence need if they replace past activities with novel activities that are still challenging, interesting, and self selected (Ryan & LaGuardia, 2000). In support of this notion, Ryff (1995) investigated environmental mastery across the lifespan, which is a similar construct to competence, and found that environmental mastery increases as individuals age.

In summary, although a small amount of research has been conducted on each of the basic psychological needs across the life span, research has not yet investigated the three basic psychological needs in an integrated fashion across the lifespan from a self determined perspective. In addition to basic psychological needs, a second key part of SDT and Ryan, Huta and Deci's (2008) eudaimonic framework is autonomy versus controlled motivation. This distinction has to do with how we adopt activities and goals that are not initially for our own enjoyment and may be perceived as instrumental or enforced (e.g., school, jobs, paying taxes). How we internalize these various responsibilities and goals can have a significant impact on our motivation and basic psychological needs, which affect our well-being.

Autonomous and Controlled Motivation with Personal Goals

Although SDT initially focused on intrinsic motivation, the theoretical focus has shifted to examine how activities or tasks which are externally imposed or regulated affect well-being (Ryan & Deci, 2000). Externally imposed activities are typically executed to accomplish a task in order to attain some independent outcome. However, with some activities and responsibilities, individuals begin to identify with them and these activities become quite autonomous, whereas

other individuals do not identify with these activities and their motivation remains controlled. It seems that as individuals age, particularly after childhood, the number of activities they perform for sheer enjoyment decreases as they are faced with an increasing number of tasks and responsibilities that tend to be externally regulated (Ryan & Deci, 2000).

SDT proposes that goal-directed activities fluctuate on a continuum (see figure 2), and they can differ in the extent of causality, with some being more autonomous and others being more controlled (Deci & Ryan, 2000). The SDT continuum includes three types of motivation (amotivation, extrinsic motivation, intrinsic motivation), six types of regulation (non-regulation, external regulation, introjected regulation, identified regulation, integrated regulation, intrinsic regulation) and five types of causality (impersonal, external, somewhat external, somewhat internal, internal). Amotivation is a condition where people lack the intention to perform the act because they believe that they do not have the self efficacy or control to obtain the desired outcome; this type of motivation opposes both intrinsic and extrinsic motivation. With respect to external motivation, there are four different types of motivations that vary in the extent to which they are autonomous versus controlled; two of which are more externally assimilated (i.e., external and introjected) and two of which are more internally assimilated (i.e., identified and integrated) (Ryan, Huta & Deci, 2008; Ryan & Deci, 2000). External regulation signifies the most controlled form of regulation and is maintained by others administering rewards or punishments. This type of regulation has poor maintenance due to the fact that motivation will suffer once contingencies are withdrawn (Deci & Ryan, 1985). A somewhat less controlling form of external regulation is introjection, which involves an inconsistency between the need of the demand and a person's lack of desire to fulfill the demand. The individual completes the act to soothe conditional self regard or to avoid shame or guilt. Introjection is unusual because the

regulations are within the person but relatively external to the self. The next most autonomous form of regulation is identified regulation, in which the individual is able to see the underlying value of the externally regulated behavior. Internalization allows people to experience increases in ownership of the behavior and experience less dissonance in behaving in accord with the regulation. The last and most inclusive form of internalized regulation is integrated motivation. This type of regulation increases internalization to a level where externally regulated behaviors become assimilated with the values and identity of the individual (Ryan, 1995). Therefore, the activity that was externally regulated is now intrinsically regulated and carried out for autonomous versus controlled reasons (Deci & Ryan, 2000). The last type of motivation on the continuum is intrinsic motivation. Although, it would appear that fully internalized extrinsic motivation equates with intrinsic motivation, it typically does not. Regardless of the idea that integrated motivation is fully volitional, it is still instrumental rather than autotelic (Csikszentmihalyi, 1990). Autotelicism refers to doing something for internal sustenance and also being fully immersed in the process, where threats of withdrawing any type of reinforcer have no bearing.

With respect to the four forms of motivation for externally regulated activities, several studies have assessed how individuals' personal concerns or goals might change or mature across the lifespan. One study looked at personal strivings across the life span, which included things that individuals typically attempt to do in their everyday behavior (Sheldon & Kasser, 2001). The study found that individuals who were 60 years and older pursued more personal daily events for self determined reasons, in comparison to adults that were 20 years old or less. Specifically, these older adults demonstrated stronger identified motives and weaker introjected motivation for personal endeavors, whereas younger adults demonstrated stronger introjected

motivation for personal strivings. This suggests that older adults have achieved slightly greater internalization of the motives behind their strivings.

In subsequent research, three studies examined how different social duties and social roles are experienced by college students and their parents (Sheldon, Houser-Marker & Kasser, 2006). In study one, the authors assessed the degree to which people feel autonomous in the following three social duties: voting, paying taxes, and tipping people. The researchers found consistent support that chronological age was positively associated with feeling more autonomy for these various externally regulated social duties. Parents felt greater intrinsic and identified motivation, and less external and introjected motivation in comparison to their offspring for performing social duties of tax paying, voting, and tipping service people. Most notably, they felt a greater sense of choice in voting and tipping service people, in comparison to their children. In study two, the authors switched the focus from social duties to social roles that individuals play by examining the roles of “child”, “worker” and “US citizen”. This study sought to investigate how individuals of different ages perceive autonomy in performing behaviors expected by their parents, by their work environments and by their nation. Participants included college students and their parents. Based on the results, parents felt more relative autonomy and choice in comparison to their children in playing their worker roles and their citizen roles. Study three was conducted in Singapore and had the same design as in study one, where they examined externally regulated social duties, motivation, and chronological age. The results showed that as individuals aged, they felt more autonomy for externally regulated social duties. This finding shows universality between Western and non-Western countries. In addition, results also showed that participants who felt more autonomy in their social duties or

social roles reported greater HWB across all three studies (Sheldon, Houser-Marker & Kasser, 2006).

Besides personal strivings, social duties, and social roles, additional research has also compared personal goal motivations of college students and their parents (Sheldon, Kasser, Houser-Marko, Jones & Turban, 2005). In this study, the researchers asked participants to write down six current personal goals for the next two months. Participants generated six goals in six specific categories (self acceptance/growth, financial/material, intimacy/friendship, societal contribution, popularity/recognition, and physical appearance). Participants then evaluated their goals in terms of the four different regulated reasons for striving. The results showed that parents reported more identified and intrinsic motivations for personal goals in comparison to their children. However, parents and children did not differ in external and introjected motivation. This data suggests that older people better internalize their own goals and personal projects.

In summary, as individuals age, they spend less time conducting activities for sheer enjoyment, whereas increased time is spent on performing activities that are externally regulated. It appears that with these new tasks and duties, individuals must find some method to become motivated and enact these externally regulated activities. Ryan and Deci (2000) propose that there are four methods of motivation to internalize these externally regulated activities. Although research is somewhat limited across the lifespan, initial results suggest that older adults seem to feel more autonomous in performing externally regulated activities than younger individuals. The next section focuses on another key aspect of eudaimonia theory; differentiating between intrinsic and extrinsic aspirations.

Intrinsic and Extrinsic Aspirations

Kasser and Ryan (1993) proposed that there are individual differences in peoples' tendencies to adopt intrinsic versus extrinsic aspirations. They proposed that the type of aspirations that individuals are inclined toward have inevitable effects on various wellness outcomes. Kasser and Ryan (1996) created the Aspirations Index Scale, which investigates seven aspirations and loads cleanly on two factors. Three of the aspirations represent intrinsic aspirations (personal growth, affiliation, and community contribution), whereas the remaining three aspirations represent extrinsic aspirations (Wealth, Fame, Image). The pursuit and achievement of these two groups of aspirations is differentially linked to the satisfaction of the basic psychological needs for autonomy, competence, and relatedness (Ryan, Huta, & Deci, 2008).

The aspirations index has not yet been utilized in lifespan research; however research that has been conducted with the Aspiration Index Scale has provided interesting insights into the relationship between aspirations and well-being. For example, individuals whose aspirations for financial success were highest in comparison to those with higher regard for community, affiliation, and personal growth aspirations had significantly lower well-being on a number of wellness indicators (Kasser & Ryan, 1993). In addition, intrinsic aspirations have been linked to increased self-actualization, increased positive affect, increased vitality, decreased depression, decreased negative affect and decreased physical symptoms (Kasser & Ryan, 1996). In one study comparing strivings across the life span, which are similar to aspirations, older adults' personal strivings were more indicative of intrinsic values concerning self acceptance, emotional intimacy and community, whereas younger adults' strivings were more indicative of external values concerning money, physical attractiveness, and popularity (Kasser & Ryan, 2001). This

suggests that as individuals age, they may orient themselves towards intrinsic values that will satisfy their basic psychological needs.

In summary, the type of aspirations that one espouses is related to a variety of well-being indicators. Based on the limited research currently available, it appears that individuals who adopt more intrinsically oriented aspirations are more inclined to experience increases in psychological well-being, increases in physical well-being, and decreases in indicators of ill-being. Although research has not yet examined aspirations from a lifespan perspective, preliminary evidence looking at strivings suggests that as individuals age, they may strive for more intrinsically oriented values. The next section reviews the final aspect of Deci, Huta, and Ryan's (2008) theory of eudaimonia – mindfulness.

Mindfulness

Eudaimonia is a process where individuals are contemplative and introspective and apply a sense of reason to their actions (Ryan, Deci, & Huta, 2008). Mindfulness is defined as an awareness of what is occurring in the present moment, and is exemplified by an openness and receptiveness to the internal and external world (Brown & Ryan, 2003). Mindfulness is essential to eudaimonia because a eudaimonic individual needs to be aware and attentive in order to choose goals that are worth pursuing and reject goals that are not. When individuals are mindful, they are in a better position to make meaningful decisions and proceed in an integrative fashion.

Psychological and medical research on mindfulness has been growing immensely over the past twenty years (Brown, Ryan & Creswell, 2007). Analyses of the salutary effects of mindfulness have been conducted via psychometric, inductive, and intervention methodologies. Based on these methodologies, mindfulness training has proven efficacy with a multitude of psychopathologies and physical health problems, including stress (Shapiro, Schwartz, & Bonner,

1998), suicidal behavior (Linehan et al., 1991), eating disorders, (Kristeller & Hallet, 1999) and a variety of physical health problems (Grossman et al., 2004; Carlson & Brown, 2005). Regarding eudaimonia, recent research has emphasized that mindfulness is important in autonomous self regulation and the enactment of values. People with increased levels of mindfulness espoused more intrinsic values and displayed little discrepancy between what they have and what they want (Brown & Ryan, 2003; Ryan, Deci, & Huta, 2008). Although mindfulness has been shown to increase through formal training, less is known about mindfulness as a dispositional trait and, to the best of my knowledge, research has not yet examined how it changes across the lifespan.

Although empirical studies have not yet investigated mindfulness across the lifespan, socioemotional selectivity theory suggests that it should increase with age (Carstensen et al, 1999). As people live longer, they become more conscious that time is finite. When this evaluative process occurs, the acquisitive mode of being, which is often associated with expansive time, shifts towards a more present oriented state of being. Socioemotional selectivity theory suggests that as individuals age, they assign more value to being, internal fulfillment, and generativity rather than becoming, distal achievement, and conventional norms (Martin & Kleiber, 2005).

In summary, research has not yet investigated the relationship between mindfulness and eudaimonia across the lifespan, although Carstensen's (1999) theory suggests that mindfulness and eudaimonia should increase with age. I will now review how select sociodemographic factors may foster or impede our ability to achieve HWB and Eudaimonia.

HWB, Eudaimonia, and Sociodemographic Factors

As shown in Figure 1, Ryan, Huta, and Deci's theory (2008) postulates that autonomous goals, intrinsic values, and higher levels of mindfulness leads to satisfying the basic

psychological needs, which in turn will lead to HWB, eudaimonia, and enhanced mental health. However, this theoretical framework neglects to specify how sociodemographic factors relate to the obtainment of these constructs. How do the conditions, circumstances, and influences in people's lives foster or detract from their ability to pursue lifestyles congruent with eudaimonia and HWB?

A limited amount of research has been conducted to assess how age and other sociodemographic factors can nurture or detract from eudaimonia. The research examining sociodemographic influences on eudaimonia has postulated that attaining higher levels of eudaimonia is highly related to a person's socioeconomic status, in particular to levels of income and levels of education (Ryff & Singer, 2008). Higher levels of education are strongly and positively linked to the two eudaimonic facets of personal growth and purpose in life (Ryff & Singer, 2008). Being able to engage in higher learning is partly defined by having an adequate level of financial security, which can promote certain opportunities for self-realization. The reality is that the allocations of resources are not dispersed equally and making the most of one's capabilities is not always possible (Dowd, 1990). Although eudaimonia tends to be positively associated with socioeconomic status, some individuals such as ethnic minorities and other individuals with notable life challenges have shown tremendous resilience in attaining high levels of eudaimonia (Ryff, Keyes & Hughes, 2003; Ryff, Shmotkin & Keyes, 2002).

A plethora of research has been conducted examining different sociodemographic factors and their relationship to HWB (Ryan & Deci, 2001). By far, the most commonly researched sociodemographic influence on HWB is income. Overall, this research suggests that having more money in developed nations is not related to increases in HWB, individuals who strongly desire wealth are more unhappy than individuals who do not strongly desire wealth, and

individuals in richer nations are generally happier than individuals from poorer nations (Ryan & Deci, 2001). Although correlations are modest with respect to income and HWB within nations, income has the most significant effect on psychological health for individuals in the lowest economic levels (Biswas-Diener & Diener, 2006). Although humans can effectively cope with a variety of negative events, it appears that extreme poverty is difficult to adapt to (Biswas-Diener & Diener, 2006), perhaps because extreme poverty is linked to health problems (Diener & Diener, 1995). However, research has shown that positive social relationships can buffer the effects of extreme material deprivation to some extent (Biswas-Diener & Diener, 2006). This finding is consistent with earlier studies that placed relatedness and social networks near the top of the list in attaining overall HWB (DeNeve, 1999).

Dunn & Brody (2008) provide a succinct review of weak, moderate, and strong predictors of HWB. The following variables are moderately to strongly predictive of HWB: being married, having emotionally close friends, having higher levels of religiosity, being involved in recreational activities, and having a higher frequency of sexual encounters. These variables have shown stronger predictive ability than the climate where one lives, having offspring, physical attractiveness, gender, age, intelligence, social class, and income.

In summary, very little research, using an SDT framework, has explored how need satisfaction changes across the lifespan. Eudaimonia research has also offered limited insight about the relationship between sociodemographic factors and eudaimonia. It has shown that attaining high levels of eudaimonia is more probable when individuals come from flourishing backgrounds. Ample research has been conducted with various sociodemographic factors and HWB, suggesting that attaining higher levels of HWB is more probable if you are not brought up

in conditions of poverty, live in a rich country, not focus solely on finances, and have plenty of meaningful social connections (Ryan & Deci, 2001).

For the present study, I will examine covariates that have shown significant effects on eudaimonia and HWB. In addition, I will employ novel covariates that will be exploratory in nature because I am interested in seeing their impact on HWB and eudaimonia. I expect similar results for covariates (gender, education, marital status, physical health) that have been employed in previous HWB and Eudaimonia studies. I am uncertain about how the exploratory covariates (race, occupational status, volunteering status, which family members live in the household and their relationship to them) will affect HWB and eudaimonia. In total, the current study will include nine covariates.

Study Hypotheses

Ryan, Huta, and Deci's (2008) model is comprehensive and complex, requiring complexity in the scientific exploration of it. The current study will employ nine self-report measures to capture each facet of this theoretical framework across three age groups (i.e., young, middle, old). Specifically, I propose to explore age differences in: autonomy, competence, relatedness, relative autonomy with personal goals, importance of relative aspirations, eudaimonia, hedonic well-being, and mental health. Based on my literature review, I have seven hypotheses.

I hypothesize older adults will have higher levels of relative autonomy with personal goals in comparison to middle-aged adults and younger adults. I expect that older adults will have higher levels of relative aspirations in comparison to younger adults but not middle-aged adults. I believe that mindfulness will increase across the lifespan, with older adults experiencing higher levels of mindfulness than both middle-aged and younger adults. According

to Figure 1, if age is positively associated with autonomy in personal goals, aspirations, and mindfulness, older adults should also exhibit more fulfillment of their basic psychological needs. Specifically, based on this theory and previous research, I hypothesize that the basic psychological needs of autonomy and competence will increase across the lifespan and that relatedness will remain stable across the lifespan. According to Figure 1, if older adults experience greater basic psychological need fulfillment, they should also experience greater well-being and mental health. Specifically, based on this theory and prior research, I hypothesize that older adults will have higher levels of eudaimonia than younger adults but not middle-aged adults. I expect that older adults will have higher levels of HWB than middle-aged and younger adults. Finally, I believe older adults will have significantly better mental health than middle aged and younger adults.

Methods

Participants

Participants were introductory psychology students attending the University of Manitoba, one of their parents, and one of their grandparents. Eligibility criteria for students consisted of: (a) having at least one parent and grandparent willing to complete a questionnaire package; (b) residency in Manitoba; (c) fluency in written and spoken English; and (d) ability to complete the survey on-line. Student participants also had to speak to the primary researcher via telephone to confirm eligibility and provide parent and grandparent contact information prior to receiving an electronic link to the study. Eligibility criteria for parents and grandparents consisted of: (a) residency in Manitoba and (b) fluency in written and spoken English. These middle-aged and older participants also had to speak to the primary researcher to provide verbal consent and

indicate whether they preferred to complete the questionnaire online or receive a hard copy with a postage paid return envelope.

Response Rates. Of the 261 students who signed up electronically for the study, 139 (53%) met eligibility criteria. Of the 139 potential families (i.e., triplets consisting of a student, parent, and grandparent), 109 (78%) consented to participate in the study and received surveys, and 30 (22%) declined participation. Families who did not have all three members (student, parent, and grandparent) complete and return their survey were not included in the final data analyses. Of the 109 families, 90 (83%) returned their surveys, resulting in a final sample of 270 participants.

Procedures

Students read a description of the study on the University of Manitoba's PSYC-1200 research participation website. Students who believed they met the study criteria signed up electronically for a time slot and then contacted the Mental Health and Aging Lab at the University of Manitoba to provide their first name, phone number, and preferred times to be contacted. I called students to confirm eligibility criteria, answered logistical questions, and collected contact information for their parents and grandparents. Once students confirmed their eligibility and provided this contact information they immediately received an electronic link to the study via email. I sent up to two follow up emails to students who did not contact the laboratory as instructed in the electronic sign up. These students received an email invitation 24 hours prior to the study alerting them of their upcoming time slot, and a second email reminder 72 hours after their time slot if they did not complete the survey at the scheduled time. Eight students who did not contact the laboratory within seven days of their timeslot were penalized one research credit. I telephoned parents and grandparents to obtain preliminary verbal consent,

asked how they wished to complete the survey, and answered any additional questions related to the study prior to either emailing them with a survey invitation or mailing them a survey package.

Participants completed the 30-minute questionnaire, which included questions about sociodemographics (age, gender, income, level of education, marital status, occupation, race/ethnicity, household income, and living arrangements), current volunteering status, self-rated health, personal goals, ability to be mindfully aware of living in the present moment, aspirations, well-being, and mental health (i.e., stress, anxiety and depression). For completing the survey students received one research credit, and parents and grandparents received a \$5 Tim Horton's gift certificate. Informed consent notified participants of the sensitive nature of some of the questions and of their right to decline or withdrawal from the study at any time without consequence.

For confidentiality purposes, ID numbers replaced identifying information so that responses could not easily be linked to participants. A master list of ID numbers and names is kept on my laptop (password protected) and on my supervisor's password protected laptop that only he and I have access to. In addition, I separated the informed consent sheets from the completed surveys and stored them in a secured office in the University of Manitoba, Mental Health and Aging Lab.

Measures

Background Information and Health. Participants completed a background and health questionnaire where they indicated their age, gender, education (less than high school, high school, college, university or above), race/ethnicity (white vs. non-white), household income (less than \$25,000, \$25,000-\$50,000, \$50,000-\$75,000, and over \$75,000), occupational status

(full-time, part time or student, retired, other), current volunteering status (yes, no), marital status (single, common law or married, widowed, divorced or separated), and which family members live in their household and their relationship to them. In addition, participants completed three health questions from the Philadelphia Geriatric Center Multi-Level Assessment Instrument (PGC-MAI; Lawton, Moss, Fulcomer & Kleban, 1982). The questions are: “How would you rate your overall health at present time” (excellent, fair, or poor), “Do your health problems stand in the way of you doing things that you want to do?” (not at all, a little, or a great deal), and “How would you say your health compares with most people your age? (better, about the same, or not as good)”. Higher scores on this scale are indicative of higher levels of subjective physical health. Lawton and colleagues reported the internal consistency of this 3-item outcome as .76. Cronbach’s alpha for the PGC-MAI in the current sample was .73.

Basic psychological needs (see Appendix A). Participants completed the 21-item Basic Psychological Needs Scale (Gagne, 2003) to assess their general levels of autonomy, competence and relatedness. This scale employs a 7-point rating scale from 1 (not true at all) to 7 (definitely true), with higher numbers indicating more satisfaction with basic psychological needs. Gagne (2003) reported Cronbach’s alpha of .69 for autonomy, .71 for competence, and .86 for relatedness. In the current sample, Cronbach’s alpha was .68 for autonomy, .64 for competence, and .70 for relatedness.

Goals (see Appendix B). I assessed participants’ goals using Little’s (as cited in Miquelon & Vallerand, 2006) personal projects construct. Participants began this measure by reading the following instructions:

Personal projects are projects and concerns that people think about, plan for, carry out, and sometimes (though not always) complete or succeed at. They may be more or less

difficult to implement; require only a few or a complex series of steps; represent different areas of a person's life; and may be more or less time consuming, attractive, and urgent.

Please list three personal goals that you have in the next couple of months. (p.262)

After participants listed three goals, they evaluated four reasons as to why they would pursue each goal using a 5-point rating scale ranging from 1 (not at all for this reason) to 5 (completely for this reason). The two autonomous reasons were "because of the enjoyment and stimulation that this goal would provide you" (intrinsic motivation) and "because you really identify with the goal" (identified motivation). The two controlled reasons were "because of external rewards such as money, grades, status, or any other tangible rewards that the goal would produce" (external motivation) and "because you would feel ashamed, guilty, or anxious if you did not have this goal" (introjected motivation). Higher scores for autonomous reasons indicate higher levels of autonomy, whereas higher scores for controlled reasons indicate lower levels of autonomy. Although this scale can measure a number of possible outcomes, like previous research (Miquelon & Valerand, 2006; Sheldon, Houser-Marko, & Kasser, 2006) I computed a relative autonomy score by summing participants' total autonomous ratings and then subtracting their total controlled ratings. Previous research assessing relative autonomy has reported varying internal consistency levels between .49 and .84 (Miquelon & Valerand, 2006; Sheldon, Houser-Marko, Jones & Turban, 2005; Sheldon, Houser-Marko, & Kasser, 2006). In this sample, Cronbach's alpha was .55 for relative autonomy.

Aspirations (see Appendix C). Participants completed the 35-item Aspirations Index Scale (Kasser & Ryan, 2003) to assess the importance that they place on intrinsic and extrinsic values. There are 7 categories of aspirations with 5 items within each category. The 7 categories encompass: the extrinsic aspirations of wealth, fame, and image; and the intrinsic aspirations of

meaningful relationships, personal growth, and community contributions. I did not assess the aspiration of health because previous research has demonstrated that it does cleanly load onto either the intrinsic or extrinsic value factors (Kasser & Ryan, 1996). Participants rated the importance of each aspiration using a 7-point rating scale ranging from 1 (not at all) to 7 (very) with higher scores indicating higher levels of value importance. Alpha coefficients for the 7 types of aspirations, total intrinsic aspirations, and total extrinsic aspirations in previous research have ranged from .59 to .87 with a mean internal consistency of .76 (Kasser & Ryan, 1996). I calculated a total relative aspiration score, consisting of the extrinsic values total subtracted from the intrinsic values total. In the current sample, Cronbach's alpha was .75 for this relative aspiration total score.

Mindfulness (see Appendix D). Participants completed the 15-item Mindfulness Attention Awareness Scale (MASS; Brown & Ryan, 2003) to assess the tendency to be attentive to and aware of present-moment experience in daily life. This scale uses a 6-point rating scale ranging from 1 (almost always) to 6 (almost never) with higher scores indicating higher levels of mindfulness. Participants rated how frequently they experience acting on automatic pilot, being preoccupied, and not paying attention to the present moment (Baer et al., 2006). According to Brown and Ryan (2003), alpha coefficients for the MASS have ranged from .82 for a student sample to .87 for an adult sample. Cronbach's alpha for the current sample was .86.

Subjective Well-Being (see Appendix E, F). Participants completed the 20-item Positive Affect and Negative Affect Schedule (PANAS; Watson, Tellegen, & Clark, 1988) to assess the extent to which they generally felt positive and negative emotions in the last week. This scale presents 10 negative and 10 positive emotional adjectives and requires participants to rate them using a 5-item rating scale ranging from 1 (very slightly to not at all) to 5 (extremely) with

higher scores indicating that they experienced this emotion more frequently in the past week. Watson et al. (1988) reported alpha coefficients of .88 for positive affect and .87 for negative affect. In the current sample, Cronbach's alpha for the PANAS was .88 for positive affect and .88 for negative affect. In addition, participants completed the 5-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) to assess subjective life satisfaction. This scale requires participants to rate five statements and indicate their level of agreement with each item on a 7-point rating scale ranging from 1 (not at all) to 7 (very much) with higher scores indicating higher levels of life satisfaction. Diener et al. (1985) reported an alpha coefficient of .87 for a sample of undergraduate students. Cronbach's alpha for the current sample was .78.

Eudaimonic Well-Being. (see Appendix G, H) Participants completed the 9-item short forms of the Purpose In Life and Personal Growth subscales (Ryff, 1989 a) to assess the extent to which they generally feel meaning and a continued sense of development in their lives. This scale requires participants to rate items concerning how they feel about themselves and their lives using a 6-point rating scale ranging from 1 (strongly disagree) to 6 (strongly agree) with higher scores indicating higher levels of personal growth and purpose in life. Previous research using the 9-item Purpose In Life and Personal Growth subscales has demonstrated alpha coefficients of .64 and .73 with student samples (Dierendonck, 2005). Cronbach's alpha for the current sample was .79 for Personal Growth and .77 for Purpose In Life. In addition, participants completed the 7-item Vitality Scale (Ryan & Frederick, 1997), to assess the level of vigor and energy they experience in both physical and mental domains. Items are rated on a 7-point rating scale ranging from 1 (not at all) to 7 (very true) with higher scores indicating higher levels of vitality. Ryan and Frederick (1997) reported alpha coefficients of .84 for this rating scale. Cronbach's alpha for the current sample was .88.

Rather than using six separate measures of HWB and eudaimonia, I attempted to create composite scores that could reliably assess these constructs and also reduce the total number of dependent variables. Based on previous research and theory, positive affect, negative affect, and satisfaction with life should cluster together, whereas purpose in life, personal growth, and vitality should cluster together.

I conducted a principal component analysis to assess if the various well-being outcomes could be grouped into smaller factors. This analysis with an oblimin rotation ($\delta=0$) suggested that two factors fit the data well. Specifically, there were 2 factors with eigenvalues greater than 1, these two factors accounted for 68.26% of the variance, and the scree plot also suggested two factors. The pattern matrix for component one included the following scales and factor loadings: Negative Affect .77, Satisfaction With Life Scale .73, Vitality .69, and Positive Affect .54. The pattern matrix for component two included: Personal Growth .92 and Purpose in Life .82. I then examined Cronbach's alpha for the 4-item hedonic well-being outcome and the 2-item eudaimonic well-being outcome. In contrast to the internally consistent eudaimonic well-being composite ($\alpha = .82$), the hedonic outcome was unreliable ($\alpha = .58$). I therefore used the eudaimonic well-being composite but had to examine each of the 4 hedonic measures independently.

Mental Health (see Appendix I). Participants completed the 21-item Depression Anxiety Stress Scales (DASS 21; Lovibond & Lovibond, 1995) to assess the core symptoms of depression, anxiety, and stress. Each item is scored from 0 (did not apply to me at all over the last week) to 3 (applied to me very much or most of the time over the past week), with higher scores indicating greater levels of depression, anxiety, and stress. Alpha coefficients for the DASS-21 have been reported at .94 for depression, .87 for anxiety, .91 for stress and .93 for total

score (Antony et al., 1998; Henry & Crawford, 2005). Cronbach's alpha for the current sample was .83 for depression, .72 for anxiety, .80 for stress, and .80 for the total score.

Data Accuracy and Completeness

Following data entry I checked 10% of the data and found that it contained very few entry errors with an accuracy rate of 99.47%. I did not check the remaining data given the high quality of the original data entry. After completing the accuracy check, I calculated the amount of missing data (2.3%). Depending on whether or not the variable was independent or dependent, I used different strategies to treat the missing data. Independent variables had very little missing data. The only variables that had missing data were income (n=15), education (n=5), and race (n=2). I coded these independent variables as "missing" dummy variables as a way to observe if non-responders differed significantly from those who did respond (Field, 2008). Subsequent analyses revealed that non-responders did not differ significantly from those who did respond on these independent variables. I utilized mean substitution for dependent variables that had missing data within each subscale. If a participant responded to 75% or more of the data within a subscale, I substituted the mean of their complete data with their missing data. If a participant did not complete 75% of the data within a subscale then I did not compute a total score for that subscale.

Analyses

I compared the three generation groups' demographic variables, health characteristics, and current volunteer status using analyses of variance (ANOVA) for continuous variables and Pearson chi-square with categorical variables. After assessing group equivalence, hierarchical multiple regression analyses examined the influence of generation groups (young, middle, and older adults) and covariates (gender, education, income, education, race, volunteering status, and

physical health) on autonomy, competence, relatedness, relative autonomy, relative aspirations, mindfulness, eudaimonia, vitality, satisfaction with life, positive affect, negative affect, and mental health. I did not adjust for multiple comparisons because each of my hypotheses were a priori and guided by either theoretical and/or empirical evidence. In addition, adjusting for multiple comparisons increases the chance of type II errors for relationships that are not null (Rothman, 1990). In each hierarchical regression analysis, step one included generation group as a predictor, and step two included the covariates (gender, education, income, education, race, volunteering status, and physical health). Conducting the analyses in this way allowed me to investigate if generation group significantly predicted well-being, mental health, and all motivational constructs alone, as well as after controlling for the influence of other factors.

I assessed the assumptions of independence, linearity, homoscedasticity, and normality for each regression analysis using different methods. For independence, I used the Durbin-Watson statistic to indicate independence of observation with coefficients of 1.5 to 2.5 indicating independence. All regression analyses fell within this range. For linearity, I used the standard “rule of thumb” (Garson, 2008, p. 31), where nonlinearity is not a problem when the standard deviation of the dependent variable is greater than the standard deviation of the residuals. All regression analyses met this criterion.

For homoscedasticity, I first inspected plots of the standardized residuals and the studentized residuals versus the standardized predicted values of the dependent variables (Field, 2008). This inspection revealed that the dependent variables of relative aspirations, negative affect, eudaimonia, and total mental health appeared to be heteroscedastic. I then conducted four additional analyses that examined each of the questionable dependent variables using a Univariate General Linear Model that incorporated all the main effects and covariates. I used

Levene's test to assess if the homogeneity of variance assumption was met or violated. Each of the four questionable dependent variables violated the assumption of homogeneity: relative aspirations, $\rho = .038$, negative affect, $\rho = .001$, eudaimonia, $\rho > .001$, and mental health, $\rho > .001$. Despite violating of this assumption, Fox (2008) suggests that such a violation is not typically problematic if sample sizes are equal, as they are in the current study.

For normality, I visually inspected normal probability plots of the residuals and ran descriptive statistics to get skewness and kurtosis statistics. I used a criterion level ranging from +2 to -2 for skewness and kurtosis (Garson, 2009). Based on these analyses, eight dependent variables violated skewness (autonomy, competence, relatedness, mindfulness, satisfaction with life, negative affect, eudaimonia, mental health) and three dependent variables violated kurtosis (relatedness, negative affect, mental health). Violations of this assumption are not thought to be problematic when sample sizes are large, due to the central limit theorem, which postulates that the sampling distribution of the b coefficients will still be normal (Garson, 2009). To verify if this was true for my sample, I transformed the non-normal data and determined if there was a difference between the outcomes of analyses using the transformed and untransformed data.

I corrected skewness and kurtosis for competence, mindfulness, autonomy, eudaimonia, and satisfaction with life by squaring these dependent variables (x^2). Kurtosis for negative affect remained higher 2 (2.37), although some researchers have used less stringent criterion levels for kurtosis ranging from + 3 to -3 (Garson, 2009). For relatedness, I used a cube (x^3) transformation, although kurtosis remained high (-2.18). I transformed the total mental health variable using its square root (\sqrt{x}) and I transformed negative affect by dividing by 1 ($1/x$). Following the transformations, I re-ran the regression analyses and compared the results of the untransformed variables versus the transformed variables. For the majority of the results, the

central limit theorem held and the results were identical for all eight variables except for minor variations in mindfulness and eudaimonia analysis outcomes. For these two variables, two covariates that approached significance with the untransformed data became significant when I normalized the data. In the following section I present the results using the untransformed data because they are essentially the same and easier to interpret.

Results

A series of chi square analyses with categorical demographic variables and a one way ANOVA for physical health assessed for equivalence between age groups. Table 1 reveals significant group differences for generation groups, gender, education, income, volunteering, marital status, occupation status, and which family members live in their household and their relationship to them. I examined the generation groups variable and found some overlap between the middle and older generations. Therefore, the three different generations are used as a proxy for age in this study. Cramer's V assessed the level of multicollinearity between the generation groups and each of these covariates, where values greater than .70 signify a relatively strong association between independent variables (Rea & Parker, 1992). As a result of high Cramer's V values, I removed marital status, occupation, and independence from final analyses due to their being highly related to age group and to control for multicollinearity. In addition, a series of chi-square analyses and one-way ANOVA's between the remaining six covariates (gender, education, income, race, physical health, volunteering) resulted in Cramer's V values lower than .70, indicating that these covariates were relatively independent of one other. Table 2 provides descriptive statistics for each dependent variable across the three generation groups.

Generation Groups and Covariate Predictors of the Basic Psychological Needs

Autonomy. Tables 3 and 4 contain regression and correlation results for the relationship between generation groups and the basic psychological needs of autonomy, competence, and relatedness. The first hierarchical regression analysis predicted autonomy scores. In step one, generation groups accounted for 11.7% of the variance in participants' autonomy scores, $F(2, 261) = 17.327, p < 0.001$. The beta weights from Table 4 indicate that older adults exhibited significantly higher levels of autonomy than both younger and middle-aged adults. In step two, the additional covariates accounted for a statistically significant 6.1% increase in R^2 , $F(10, 251) = 1.853, p = 0.052$. Generation groups remained significant, such that older adults still had significantly higher levels of autonomy than both younger and middle-age adults. In addition, physical health had a significant positive effect on autonomy. The overall model accounted for nearly 18% of the variance in autonomy scores.

Competence. A second hierarchical regression analysis predicted competence scores. In step one, generation groups accounted for 4% of the variance in participants' competence scores, $F(2, 258) = 5.316, p = 0.005$. The beta weights from Table 4 indicate that younger and middle-aged adults exhibited significantly higher levels of competence than older adults. In step two, the additional covariates accounted for a statistically significant 13.6% increase in R^2 , $F(10, 248) = 4.074, p < 0.001$. Generation groups remained significant, such that younger and middle-aged adults still had significantly higher levels of competence than older adults. In addition, physical health and volunteering had significant positive effects on competence. The overall model accounted for nearly 18% of the variance in competence scores.

Relatedness. A third hierarchical regression analysis predicted relatedness scores. Step one of this analysis was not significant, $F(2, 261) = .546, p = 0.580$. In step two, the additional covariates accounted for a statistically significant 12.1% increase in R^2 , $F(10, 251) = 3.484, p <$

0.001. Generation groups was unrelated to relatedness but gender, race, and volunteering status had significant effects on it. Female participants had higher levels of relatedness than male participants, White participants had higher levels of relatedness than non-White participants, and participants who volunteered had higher levels of relatedness than those participants who did not volunteer. The overall model accounted for about 12% of the variance in relatedness scores.

Generation Groups and Covariate Predictors of the Motivational Constructs

Tables 5 and 6 present regression and correlation results for the relationship between generation groups and three motivational constructs: goals, aspirations, and mindfulness.

Relative Autonomy. A fourth hierarchical regression analysis predicted relative autonomy scores. In step one, generation groups accounted for 28.8% of the variance in participants' relative autonomy scores, $F(2, 227) = 45.995, \rho < 0.001$. The beta weights from Table 5 indicate that older adults had significantly higher levels of relative autonomy than both younger and middle-aged adults. In step two, the additional covariates accounted for a non-significant increase of 5.3% in R^2 , $F(10, 217) = 1.744, \rho = 0.073$. In the final model, which accounted for 34% of the variance, generations remained significant, such that older adults had significantly higher levels of relative autonomy than both younger and middle-age adults. In addition, education had a significant effect on relative autonomy. Post secondary graduates had higher levels of relative autonomy than participants who did not graduate from high school.

Relative Aspirations. A fifth hierarchical regression analysis predicted relative aspiration scores. In step one, generation groups accounted for 6.7% of the variance in relative aspirations scores, $F(2, 257) = 9.272, \rho < 0.001$. The beta weights from Table 5 indicate that older adults exhibited significantly higher levels of relative aspirations than younger adults. In step two, the additional covariates accounted for a statistically significant 9.8% increase in R^2 , F

(10, 247) = 2.895, $p = 0.002$. Generations remained significant such that older adults had significantly higher levels of relative autonomy than younger adults. In addition, gender, income, and race all had significant effects on autonomy. Female participants had higher levels of relative aspirations than male participants, white participants had higher levels of relative aspirations than non-white participants, and participants who had household incomes lower than \$25,000 had higher levels of relative aspirations than participants who had household incomes greater than \$75,000. The overall model accounted for nearly 17% of the variance in relative aspirations scores.

Mindfulness. A sixth hierarchical regression analysis predicted mindfulness scores. In step one, generation groups accounted for 8.1% of the variance in participants' mindfulness scores, $F(2, 259) = 11.425$, $p < 0.001$. The beta weights from Table 5 indicate that older adults showed significantly higher levels of mindfulness than both younger and middle aged adults. In step two, the additional covariates accounted for a statistically significant 10.5% increase in R^2 , $F(10, 249) = 3.229$, $p = 0.001$. Generations continued to have a positive influence on mindfulness scores. In addition to generation groups, significant effects were found for education, race, and physical health. Participants who graduated from college and university had higher levels of mindfulness than participants who did not graduate from high school, white participants had higher levels of mindfulness than non-white participants, and physical health had a positive effect on mindfulness. The overall model accounted for about 18.7% of the variance in mindfulness scores.

Generation Groups and Covariate Predictors of Hedonic Well-Being

Tables 7 and 8 contain regression and correlation results for positive affect, negative affect, and satisfaction with life.

Positive Affect. The seventh hierarchical regression analysis predicted positive affect scores. In step one, generation groups accounted for 0.50% of the variance in participants' positive affect score, $F(2, 260) = .669$, $\rho = 0.513$. In step two, the additional covariates accounted for a statistically significant 14.4% increase in R^2 , $F(10, 250) = 4.223$, $\rho < 0.001$. Generation groups was significant, such that older adults had significantly higher levels of positive affect than middle-aged adults but not younger adults. In addition to generations, physical health and volunteering had significant positive effects on positive affect scores. Participants who volunteered had higher levels of positive affect than participants who did not volunteer. The overall model accounted for about 15% of the variance in positive affect scores.

Negative Affect. An eighth hierarchical regression analysis predicted negative affect scores. In step one, generation groups accounted for 20.9% of the variance in these scores, $F(2, 260) = 34.258$, $\rho < 0.001$. The beta weights from Table 7 indicate that older adults experienced significantly less negative affect than both younger and middle-aged adults. In step two, the additional covariates accounted for a non-statistically significant 4.4% increase in R^2 , $F(10, 250) = 1.481$, $\rho = 0.147$. In the final model generations remained significant and physical health had a significant positive influence on negative affect. The overall model accounted for about 25% of the variance in negative affect scores.

Satisfaction with Life. A ninth hierarchical regression analysis predicted satisfaction with life scores. In step one, generation groups accounted for .80% of the variance in participants' satisfaction with life scores, $F(2, 260) = .991$, $\rho = 0.372$. In step two, the additional covariates accounted for a statistically significant 14.4% increase in R^2 , $F(10, 250) = 4.258$, $\rho < 0.001$. Generations was unrelated to satisfaction with life scores, although physical health and volunteering had significant positive effects on satisfaction with life. Participants who

volunteered had higher levels of satisfaction with life than those participants who did not volunteer.

Generation Groups and Covariate Predictors of EWB and Mental Health

Tables 9 and 10 contain regression and correlation results for the relationship between age group, eudaimonia, vitality, and mental health.

Eudaimonia. The tenth hierarchical regression analysis predicted eudaimonia scores. In step one, generation groups accounted for 5.5% of the variance in participants' eudaimonia scores, $F(2, 258) = 7.515, p = 0.001$. The beta weights from Table 9 indicate that younger and middle-aged adults exhibited significantly higher levels of eudaimonia than older adults. In step two, the additional covariates accounted for a statistically significant 15.8% increase in R^2 , $F(10, 248) = 4.994, p < 0.001$. Generations was still significant, such that younger adults had significantly higher levels of eudaimonia than older adults but not middle-aged adults. In addition, gender, education, physical health, and volunteer status had significant effects on eudaimonia scores. Female participants had higher levels of eudaimonia than male participants, participants who graduated from college and university had higher levels of eudaimonia than those participants who did not graduate from high school, physical health had a significant positive effect on eudaimonia, and participants who volunteered had higher levels of eudaimonia than those participants who did not volunteer. The overall model accounted for 21% of the variance in eudaimonia scores.

Vitality. The eleventh hierarchical regression analysis predicted vitality scores. In step one, generation groups accounted for only 1.2% of the variance in participants' vitality scores, $F(2, 260) = 1.622, p = 0.199$. In step, two, the additional covariates accounted for a statistically significant 23.5% increase in R^2 , $F(10, 250) = 7.801, p < 0.001$. Generations was unrelated to

vitality, whereas physical health had a significant positive effect on it. The overall model accounted for almost 25% of the variance in autonomy scores.

Mental Health. The final regression analysis predicted mental health scores. In step one, generation groups accounted for 10.1% of the variance in participants' mental health scores, $F(2, 256) = 14.370, p < 0.001$. The beta weights from Table 4 indicate that older adults exhibited better mental health scores than younger adults. In step two, the additional covariates accounted for a statistically significant 14.3% increase in R^2 , $F(10, 246) = 4.671, p < 0.001$. Generations remained significant, and gender, education, and physical health had significant effects on mental health. Male participants exhibited better mental health scores than female participants, university graduates exhibited better mental health scores than participants who did not have a high school diploma, and physical health had a significant positive effect on mental health. The overall model accounted for about 24% of the variance in mental health scores.

Discussion

To the best of my knowledge, this study is the first study to use a large sample of related family members to investigate changes in well-being across the lifespan using Ryan, Huta, and Deci's (2008) theory of eudaimonia. I used a familial design so that participants could be matched on potentially confounding variables, such as genetics, socio-economic status, geographic residency, and household characteristics (Sheldon, Houser-Marko, & Kasser, 2005). Using this comprehensive theory of well-being from a lifespan perspective is advantageous because prior research assessing well-being across the lifespan has tended to focus on HWB. Given the anticipated growth in the number of older adults in the population over the next two decades, it is especially important to have a clear understanding of age-related changes in well-being in a broader sense. This would provide researchers, social organizations, and governments

with additional insight into the need for initiatives aimed at addressing the strains that an aging population is expected to have on the health care system.

The present study has four major findings. The first is the mixed influence of age on the basic psychological needs; my hypotheses for autonomy and relatedness were confirmed, whereas my hypothesis regarding competence was not. The second is the positive effect of age on motivational constructs; older adults surpassed their younger and middle-aged peers on two out of the three motivational constructs assessed in this study. The third is the diverse effects of age on well-being. Older adults had better outcomes on some of the HWB indicators and poorer results on the eudaimonic well-being variables; however, age tended to have less of an influence on eudaimonia when other predictors were included in the analyses. The fourth outcome is that older adults had better mental health than younger adults but not middle-aged adults. The overall results of this study largely support the “paradox of aging”, which postulates that despite the perceived hardships (objective, contextual, functional) that older adults experience (Mroczek & Kolarz, 1998), they do quite well in comparison to their younger and middle-aged familial peers on measures of well-being. I will discuss each of these major findings, in turn.

The Effects of Age on Motivational Constructs

Older adults consistently scored higher than their younger and middle-aged peers on each of the motivational constructs assessed in this study: autonomy with personal goals, mindfulness, and relative aspirations. These expected results may be at least partially explained by socioemotional selectivity theory (SST; Carstensen, 2006; Carstensen, Isaacowitz, & Charles, 1999). According to this theory, as individuals age, their perception of time changes, leading to a greater awareness that their time on earth is limited. This increasing awareness of time limitations is associated with a variety of reliable effects on emotional and cognitive functioning.

Therefore, the aging effects found in this study are consistent with the idea that increasing age has profound effects on motivation with respect to goals, aspirations, and present-moment awareness.

Older adults reported more relative autonomy in their personal goals over the next three months than both younger and middle-aged adults. The majority of older adults in this study reported personal projects that could be completed in the short-term, were devoid of monetary rewards and were perceived as enjoyable. Carstensen's (2006) research supports the notion that older adults usually select goals based on familiarity, emotional regulation, and the belief that they can be accomplished in the amount of time they believe they have left. Selecting goals that encompass all the aforementioned criteria would likely require a high degree of mindfulness, as previous research has also shown that highly mindful individuals are more likely to espouse intrinsic values and are more happy with the things they have (Brown & Ryan, 2003; Ryan, Deci, & Huta, 2008). This may speak to why older adults in this study also had higher levels of relative aspirations than younger adults. People who perceive themselves as closer to death assign greater importance to internal values and generativity than societal norms and achievement (Martin & Kleiber, 2005). Furthermore, previous research has shown that older adults place less value on external goals such as wealth, fame, and image in comparison to younger adults (Kasser & Ryan, 2001).

In addition to the effects of age on motivation, interesting findings were found regarding the effects of gender, income, education, race/ethnicity, and health on motivational constructs. Females reported higher levels of relative intrinsic aspirations than males. This may be the result of gender socialization, where women traditionally take on the role of nurturers and caregivers, whereas males traditionally take on the role of breadwinners. Income effects were

found for relative aspirations where individuals in this sample who had household incomes of less than \$25,000 had higher levels of relative aspirations than individuals with household incomes over \$75,000. People with lower income had higher levels of intrinsic values, which may indicate that having limited income requires individuals to espouse more intrinsic endeavors such as becoming a better person, contributing positively to the community, and attempting to experience continued growth within personal relationships. It could be that having higher levels of income increases people's focus on extrinsic endeavors such as enhancing one's image or obtaining greater wealth. Education effects were found for mindfulness and autonomy with personal goals. In particular, people who graduated from university had significantly higher levels of autonomy with respect to personal goals and higher levels of mindfulness than those with lower levels of education. These findings suggest that higher levels of education likely provide opportunities for personal development, which may make individuals more conscious of the types of goals they pursue. Race/ethnicity effects were found, where White people reported higher levels of relative aspirations in comparison to non-White people. Although the current sample had a limited number of non-White participants, the countries of origin that these participants reported were significantly less affluent than Canada. Research has shown that people from poorer cultures tend to espouse more extrinsic values because improving economical situations can relentlessly improve HWB (Ryan & Deci, 2001). Thus, future research is needed employing a larger non-White sample to see if this finding can be replicated. Finally, physical health had a positive effect on levels of mindfulness. It could be that perceiving oneself as physically healthy increases one's ability to be present-moment focused, whereas functional health problems may lead individuals away from living with awareness in the moment, perhaps by ruminating about their health concerns.

The Effects of Age on the Basic Psychological Needs

Prior to this study, there was a dearth of research dedicated to assessing the basic psychological needs across the lifespan in a comprehensive manner. Although Coleman (2000) hypothesized that aging places limitations on need satisfaction, this was only true for one of the three basic psychological needs. The findings from the present study suggest that satisfying the basic psychological need for competence is more difficult for older than for younger adults. In contrast to Coleman's hypothesis, but consistent with my own, data from the current study suggest that autonomy as a basic psychological need increased across the adult lifespan, and relatedness did not vary with age. The basis for my hypotheses came from Ryff and colleague's (1989a, 1989b, 1991, 1995) lifespan work on psychological well-being, which showed that autonomy increased from young to middle adulthood but that no significant differences were found between middle-aged and older adults. In addition, Ryff found no significant age differences on the Positive Relationships With Others subscale. I assumed that there would be a significant increase in autonomy from middle-aged adults to older adults in this study because STD's (Deci & Ryan, 2000) definition of autonomy differs from Ryff's. SDT defines autonomy as congruence between the activities that an individual performs and their own feelings of choice (Sheldon & Elliot, 1999), whereas Ryff's definition of autonomy emphasizes independence. The current study's findings support Webster's (2008), in which many seniors reported having highly organized daily and weekly routines with activities they enjoyed and chose. In addition, older adults in Webster's study were largely free from certain constraints such as raising children and paid employment, which freed up time to engage in more enjoyable autonomous activities. With subjective health being relatively equivalent across age groups in the current sample, older adults were likely physically healthy enough to complete whatever activities they would like to do,

which is important given that this study clearly shows that subjective health is an important predictor of autonomy.

For relatedness, my results are similar to that of other studies showing that this construct did not vary significantly across the three age groups (Carstensen, Issacowitz, & Charles, 1999; Lang & Carstensen, 1994; Ryff, 1989b, 1991, 1995) and that females scored higher than males (Ryff, 1989b). Coleman (2000) specified that this need should remain relatively satisfied until advanced old age, and that in order to maintain this need between the ages of 80 and 100, older adults need to remain socially connected in order to emphasize belonging and stability.

Although the current results cannot address this possibility because the older adult group ranged in age from 55 to 89 with a mean age of 75, Lang and Carstensen (1994) have shown that even though individuals 80 years of age and older have less tangential social support, they do not differ from young-old adults in the amount of emotionally close social partners. This suggests that, on average, this need likely remains relatively satisfied for the majority of our lifespan, at least for individuals who are relatively physically and cognitively healthy.

The surprising finding that competence decreased with increasing age was contrary to my initial hypothesis. Older adults scored significantly lower than both younger and middle-aged adults. This finding was opposite of what Ryff (1989b, 1991, 1995) found with a similar construct, environmental mastery. Research focusing on environmental mastery has generally shown that older and middle-aged adults scored significantly higher than younger adults. While these constructs are quite similar, they also differ in important ways, which might explain the variable influence of age on them. Environmental mastery assumes a sense of mastery or competence in managing the environment, whereas competence as a psychological need assumes being optimally challenged in a broader sense. A number of reasons have been provided as to

why competence may decline as people age. First, Coleman (2000) stated that Western societies, in particular, cater to youth. Society's failure to adjust to the growth in the percentage of older adults in the population has caused older individuals to lag behind social change so that they, for example, have difficulty keeping up with the increasing reliance on technology. Second, competence may decline in older adults because society places a significant amount of importance on career identity (Coleman, 2000; Ryff & Singer, 2008). As a result, retirement can present an older adult with the predicament of not feeling optimally challenged. An inability to maintain a career identity may cause an older adult to feel ineffective or unproductive. An interesting finding in this study is the protective effect of volunteering on competence. Research has shown that older volunteers in particular are motivated by altruistic concerns and esteem values, such as the desire to feel useful, feel productive, and fulfill moral obligations (Okun, 1994). This may inadvertently aid in satisfying their basic psychological need for competence.

With respect to the three basic psychological needs as whole, inconsistent effects of age on competence, relatedness, and autonomy may be explained by the scarcity hypothesis, whereby individuals have a limited amount of energy and time available to satisfy different life domains (Sheldon & Niemiec, 2006). Depending on the life domains that one considers essential, an imbalanced effort may occur, which provides satisfaction with certain psychological needs and deficits in others. These theorists contend that this imbalance essentially boils down to discrepancies between family life and work life. In the current study, younger and middle-aged adults were more likely to have school or professional endeavors that perhaps fulfilled their need for competence, but provided limited time to conduct volitional activities. Conversely, older adults may have had fewer formal roles that satisfied their need for competence but more personal time to fulfill autonomy needs. In support of this notion, Isaacowitz, Valliant, and

Seligman (2003) conducted a study of young, middle, and old adults which investigated 16 different strengths (e.g., satisfying work, altruism, spirituality) and found that age differences in the levels of strengths corresponded to the developmental tasks required of different times in the adult lifespan. Young adults emphasized strengths (e.g., originality, hope, wisdom) that were indicative of banking resources for the future, middle-aged adults exhibited strengths (i.e., hope, loving relationships) that were indicative of raising children, maintaining a marriage, and nurturing generativity, and older individuals, perhaps because of fewer formal constraints to force their strengths in a particular direction, had a wider range of strengths. These authors suggest that being freed from the need to prepare for the future, older adults had the autonomy to select and utilize strengths that would provide the most effective reward in the present (Isaacowitz, Valliant & Seligman, 2003). The results of Isaacowitz and colleagues' study have implications for the age differences in basic psychological needs found in the current study. Preparing for one's future or an offspring's future may require a high need for competence as a means to challenge and confront these developmental tasks, whereas being older may not require such a high need for competence because these previous developmental tasks have been completed. The achievement of these earlier developmental tasks by older adults may lead to a transition where autonomy becomes more of a priority than competence.

The Effects of Age on Well-Being

In contrast to either null or positive effects of age on HWB measures, age had either null or negative effects on the eudaimonic well-being outcomes. This is the first study to use a related sample of younger, middle-aged, and older adults to simultaneously assess hedonic and eudaimonic well-being. The study's results add to a growing body of research (Ryan, Huta & Deci, 2008; Ryff & Singer, 2008; Waterman, 2008; Waterman, 2010) suggesting that aging is

often either unrelated or positively associated with HWB, and that other factors are as or more meaningful in predicting HWB. For example, the majority of cross-sectional studies have found no age related differences in negative affect (Bradburn, 1969; Diener & Suh, 1997; Malatesa & Kalnok, 1984; Mroczek & Kolarz, 1998; Shmotkin, 1990) or declines in negative affect (Barrick, Hutchinson, & Decker, 1989; Gross et al., 1997; Vaux & Meddin, 1987). This study further supports these earlier findings that negative affect declines with age, perhaps because subjective health was largely equivalent across the three generations.

The results obtained for positive affect in this study are somewhat novel and surprising. The general consensus of lifespan research examining positive affect using cross-sectional and longitudinal designs is that it usually declines with age (Bradburn, 1969, Diener & Suh, 1997; Shmotkin, 1990). In this study, age alone did not predict positive affect. However, when the covariates were added to the model, older adults had more positive affect than middle-aged adults. This suggests that the positive influence of age was only evident after controlling for the effects of health and volunteer status. So again, it may be the relatively healthy nature of the current older adults, and the fact that I controlled for health statistically that resulted in this somewhat novel finding. To the best of my knowledge, no other studies have reported this finding, although Stone and colleagues (2010) found higher rates of enjoyment and happiness among younger and older adults in comparison to middle-aged adults. Further replication of this finding is needed to evaluate if this U-shape positive affect pattern is unique to familial lifespan studies, and future research in this area must continue to adjust for age-related changes in subjective health. The strongest predictor of positive affect in this study was subjective health suggesting the intuitive idea that people who perceive themselves to be healthier tend to experience more positive emotions.

Research assessing satisfaction with life has often shown a slight increase in life satisfaction across the lifespan (Diener & Suh, 1998; Inglehart, 1990) or declines when covariates were not controlled for (Schmotkin, 1990). However, the current study found that satisfaction with life was unrelated to age. A recent meta-analytic review of life satisfaction literature for college students, middle-aged adults, and older adults found that, like the current study, overall mean scores were similar across all three generations (Pavot & Diener, 2008). In addition, this finding may be pertinent to familial lifespan studies but more research is needed to determine this. Subjective health was the strongest predictor of life satisfaction in this study and other studies assessing people with objective health concerns have generally shown relatively low levels of life satisfaction (Pavot & Diener, 2008). Finally, individuals who volunteered experienced higher life satisfaction ratings in comparison to individuals who did not volunteer.

In contrast to the null or positive effects of age on hedonic well-being, older adults in this study had lower levels of eudaimonic well-being than younger and middle-aged adults. Although this downward trend in terms of the effect of age on the Purpose in Life and Personal Growth subscales has consistently been found (Ryff 1989a, 1989b, 1991, 1995), I expected that I would find different results in the current study because a related sample was used and I used a novel framework of well-being (Ryan, Huta & Deci, 2008) that incorporates vitality into the definition of eudaimonia. Unfortunately, in the current study vitality did not factor together with the Personal Growth and Purpose in Life subscales, which I expected it to. Theorists have postulated that vitality shares a variety of subjective experiences in common with eudaimonia (Ryan, Deci, & Huta, 2008; Waterman, 2008). Perhaps this construct differed from the other two eudaimonic measures in the current sample because the vitality scale taps the mental and physical subjective experiences of vigor. So that whereas in younger adults vitality and

eudaimonia may be closely related, they may not be in middle-aged and older individuals because physical vitality should decline with age. Interestingly, although age was not a significant predictor of vitality, the beta weights suggested a trend toward older adults having higher levels of vitality than younger individuals. In this study, the only predictor of vitality was subjective health, which is intuitive given that it would be difficult to feel mental and especially physical vigor if one does not feel healthy. With respect to the eudaimonia composite, the aging effects found in this study are consistent with prior research (Ryff, 1989a, b; 1991; 1995). However, in contrast to these studies, differences between middle-aged and older adults were no longer significant when I controlled for other covariates. This finding hints at the possibility that aging alone is not responsible for lower levels of eudaimonia but rather the effects of covariates that differ between age groups.

The covariates that were particularly predictive of eudaimonia were education, gender, subjective health, and volunteering. Ryff, Shmotkin, and Keyes (2002) have demonstrated how achieving high levels of eudaimonia is often quite difficult without higher levels of education. These researchers found that older less well-educated individuals who had tolerated the challenges of earlier decades were more content and satisfied (high HWB), but because of a lack of prospect or ability for educational pursuits had lower levels on Ryff's Psychological Well-Being Scale. Conversely, younger adults with higher levels of education had higher levels of Psychological Well-Being on Ryff's Scale but also lower levels of HWB. Middle-aged and older adults in that study who had higher levels of education were more likely to have high levels of Psychological Well-Being and HWB. This finding, in conjunction with the present results, continues to support the important influence of education on eudaimonia. In addition, as has been the case in previous research (Ryff, 1989b), females in this study had higher levels of

eudaimonia than males. This finding may speak to the stereotype of men being taught to achieve and women being taught to focus on relationships and nurturance. The strongest predictor of eudaimonia in this study was subjective health. This novel finding suggests that it may be difficult for individuals who do not feel healthy or have objective health problems to focus on avenues of growth and self realization when their health concerns take precedent. Finally, as has been the situation in previous research, people who volunteered had higher levels of eudaimonia than individuals who did not volunteer (Ryff & Singer, 2008). This finding may have come about because people usually volunteer in projects that are personally meaningful to them, which may expand their perspectives and visions, inadvertently increasing their eudaimonia.

Although the results of this study, and research by Ryff and colleagues (Ryff, 1989a,b; 1991; 1995), suggest that eudaimonic well-being decreases with age, Waterman (2010) has raised concerns regarding Ryff's Psychological Well-Being scale and how well it corresponds to the philosophical roots of eudaimonia set forth by Aristotle and contemporary eudaimonists. In particular, he is uncertain if the Purpose in Life and Personal Growth scales are directly tied to self realization and virtue. He contends that, for example, a person who aspires to become a millionaire before the age of 30 will mostly likely score high on the Purpose in Life scale but will most likely not be engaging in eudaimonic living. Waterman (2008, 2010) questions whether Ryff's Psychological Well-Being scale should be included under the umbrella of eudaimonic constructs and states that no assessment instrument has been designed to measure eudaimonia as Aristotle defined it. Waterman (2010) recently created the 21-item Questionnaire of Eudaimonic Well-Being (QEWB). His research using two large undergraduate samples illustrated that Psychological Well-Being and QEWB are related but not synonymous and correlations between the two instruments never exceeded .33. In correlating the Psychological

Well-Being scale, QEWB, and SWB, QEWB was most highly associated with identity commitment and identity formation. The findings of this study suggest that the Psychological Well-Being Scale, QEWB, and SWB contribute differently to successful living and that the QEWB offers a more comprehensive evaluation of eudaimonia, which is firmly grounded in eudaimonist philosophy. Further research is needed to explore lifespan changes in well-being using this new measure.

The Effects of Age on Mental Health

Several lines of research have been conducted to investigate if mental health increases or declines with age. In the current study, older adults reported better mental health (i.e., less depression, anxiety, and stress) than younger individuals. To the best of my knowledge, this is the first study to investigate mental health across the lifespan using a related sample and the DASS-21. The results of this study are, for the most part, consistent with previous research using unrelated samples and different measures of mental health (Westerhof & Keyes, 2010). The MIDUS study investigated major depression with adults ranging from 25 to 74 years of age and found that rates of major depression were lower in older adults than in younger adults (Kessler et al., 2004). In the Epidemiological Catchment Area Survey, older adults had the lowest prevalence of diagnosable anxiety disorders (Regier, Rae, & Narrow, 1998). In addition, the National Comorbidity Survey Replication study (Gum, King-Kallimanis, & Kohn, 2009) found the prevalence of 12-month and lifetime mood, anxiety, and substance-use disorders was lower for older adults (65 years and older) than younger age groups.

Although epidemiologic surveys consistently show that rates of mental disorders decrease with age, many researchers argue that this decrease is artificial because mental disorders are more likely to be underestimated in later life (Jeste et al., 2008; Streiner, Cairney & Veldhuisen,

2006). In support of this notion, a study of 18,000 respondents between the ages of 18 and 99 found that the days of depression declines between the age of 18 and 62 but increases between the age of 63 and 99 (Mirowsky & Ross, 1999). Conversely, other researchers argue that decreases in mental disorders with age may reflect true improvements in mental health in later life (Mackenzie, Pagura, & Sareen, in press; Carstensen, 2006). The results of the current study support this latter view and offer reasons why this is so. That is, older adults in this study were more likely to have high levels of autonomy, higher levels of intrinsic motivation, higher levels of present-moment awareness, and low levels of negative affect. Also, there is an emerging body of evidence suggesting that as people age their emotional regulation abilities strengthen (Blanchard-Fields & Coates, 2008). One area for future research on this topic is the need for understanding mental health within subsections of the older adult population and in particular the oldest-old. The present study did not employ an old-old group or great grandparents and it is difficult to know if the current results would generalize to these adults.

The covariates of gender, race/ethnicity, education, and health also had significant effects on mental health. Consistent with previous research, this study found that males have better mental health ratings than females. Stone et al., (2010) found that sadness, stress, and worry were more prevalent in women in comparison to men across the lifespan. Another study examining racial and gender differences in anxiety disorders found the highest prevalence estimates of generalized anxiety disorder among older African-American women (3.7%) and the lowest prevalence among older African-American men (0.3%) (Blazer, George, & Hughes, 1991). The current study also found that individuals with higher levels of education, particularly those who graduated from university, had significantly better mental health than those who did

not graduate from high school. The older sample used in the study had a significantly higher proportion of individuals who did not complete high school in comparison to younger adults. In the current study, older adults had better mental health than younger adults despite having lower level of formal education. Subjective health was also an important predictor of mental health, which is expected because research has shown that impaired subjective health and physical limitations in daily activities negatively affects mental health (Wolitzky-Taylor et al., 2010). Additionally, physical health had reliable and strong effects on many constructs in this study that will affect mental health. As a result, it fits that if poorer subjective health is related to lower levels of autonomy, competence, mindfulness, positive affect, negative affect, mindfulness, eudaimonia, and vitality, that it should also predict poorer mental health.

Generalizability of the Results to Manitoba's Population

The results of this study are generalizable to various individuals in Manitoba. However, some of the outcomes may not be applicable to certain demographic subsets. Children (0-15), younger adults between the ages of 25-39, and older adults 80 years of age and older were either not represented or under-represented in the current study, so that the data may not generalize to them. The results of this study are most pertinent to young adults between the ages of 19 to 24, middle-aged adults between the ages of 40 to 59, and older adults between the ages of 60-79.

For gender, the results found for this covariate may not generalize to males across all three generation groups. The sample included a significantly greater percentage of women in comparison to men and was not representative of Manitoba's 2006 census data with respect to gender (Manitoba Government, 2006). Based on this data, a representative Manitoba sample would have included 46 younger male adults (19-24), 46 middle-aged male adults (40-59), and 43 older male adults (60-79) overall.

For education, the results reported for this covariate are fairly generalizable to the middle-aged and older adults sampled in this study. Their education levels are similar to those reported in the 2010 Manitoba's senior report (profile of Manitoba's senior, 2010). However, the younger adult sample is not representative of Manitoba's overall education levels. In this sample, all students had their high school diplomas, whereas the 2009 graduation rate was 81% (Manitoba's High School Graduation rate; Manitoba Government, 2009). Therefore, to have a more representative younger adult sample education wise, the study would have needed a sample of 18 younger adults who did not graduate from high school.

For volunteering the majority of the effects found for this covariate are fairly generalizable to the population of Manitoba. The only problem for volunteering status is that the levels of volunteering reported in this study for middle-aged and older adults are somewhat lower than Manitoba's rates overall. For example, recent volunteering reports show that 41% of older adults (65+) volunteer, whereas in this sample 27% reported they volunteer; middle-aged adults (45-64) reported volunteering at slightly over 50%, whereas in this sample they reported 38%. To have a more representative volunteering sample reflective of Manitoba, I would have needed 46 middle-aged adults who volunteered, and 37 older adults who volunteered. With respect to younger adults, I had difficulty finding volunteer status statistics pertinent to this age demographic, therefore, this study may be one of the first studies in Manitoba to provide rates of volunteering for first year university students.

For perceived health, the health effects found in this study are pertinent to Manitobans who generally perceive themselves as healthy. According to Pavot and Diener (2008) most individuals across the lifespan describe themselves as having moderately good health, very good health or excellent health. These researchers reported that perceived health and satisfaction with

one's life usually decline when individual have objective health concerns. Therefore, the perceived health results from the current study may not generalize to Manitobans who consider themselves to be in poor overall health, have several barriers to perceived health, or who see themselves in worse conditions in comparison to age mate peers.

For income and race/ethnicity, it is difficult to say how generalizable these effects are to the population of Manitoba because overall these variables were not clearly defined. For income, I did not differentiate household income from personal income, so it is difficult to say with certainty what level of financial security a person in this sample actually had. For race/ethnicity, I had a limited number of ethnicities reported; therefore I collapsed this variable into a White versus non-White comparison. Collapsing the groups in this manner made it difficult to make any conclusive statements about who these racial/ethnicity effects are pertinent too (i.e., visible minorities, first generation immigrants).

Limitations of the Current Study

In addition to the many significant strengths of the current study, it also has several limitations that warrant discussion. First, the three generational groups varied significantly in terms of gender, education, income, marital and occupation status, volunteer status, and number of cohabitants living independently or with each other. Therefore, greater efforts to match these variables representatively to Manitoba's population may lead to more generalizable results. Second, this study used self reports solely to assess well-being. Self report measures are often influenced by social desirability and may not reflect how participants truly feel about the construct in question. Given this research is about well-being, participants may have felt pressure to depict themselves as well-adjusted, especially if they believe others will examine their answers. Third, this study employed a cross-sectional design, which makes it impossible to

explore whether significant age differences are due to variability among the three age cohorts or if they are due to true aging effects. Fourth, Ryan, Huta and Deci's theory (2008) may reflect western values and may not generalize to other non-western cultures. Fifth, the study participants do not generally include participants living in their 8th, 9th, or 10th decades of their lives (old-old). Therefore, I cannot say with certainty if the results obtained with the study's older adults would generalize to this old-old category. Sixth, the methodology I used to assess personal goals had particularly low alpha levels and resulted in more missing data in the older adult sample than in the other age groups. The reason for unreliability in this measure is not clear given that the correlation between the intrinsic and identified items was .46 and the correlation between external and identified items was .45. With respect to the missing personal goal data for older adults, research has shown that older adults are especially unlikely to endorse long, complicated interview questions even when they would otherwise endorse a similar simpler question (Wolitzky-Taylor et al., 2010). Therefore, I assume that having them think about three goals, write down the goals, and then rate their autonomy was most likely perceived as complicated. Seven, structural equation modeling was not used in this study, therefore, I was unable to explore the mediating pathways of the well-being model in the manner that Ryan, Huta, and Deci (2008) proposed it in Figure 1. Eighth, the assessment of race/ethnicity was rather limited because I did not explicitly differentiate between visible minorities, recent immigrants, or where a participant was born.

Future Research Considerations

Future research attempting to understand lifespan differences in wellness should ideally move beyond the conventional assessment of happiness, affect, and life satisfaction to simultaneously measuring both hedonic and eudaimonic well-being. With respect to

eudaimonia, it may be interesting to compare changes across the lifespan using Waterman's QEWB (2010) and Ryff's (1989) Psychological well-being scale to explore differences or similarities between findings using these assessment tools. Researchers should also continue to examine lifespan changes in well-being while taking into consideration, and covarying the effects of, factors that will influence well-being in addition to age. Such research should also attempt to sample covariates representatively of Manitoba's population across all generations whenever possible. Another potentially interesting avenue for future studies would be to use alternative means of assessing well-being, such as family reports. In addition, longitudinal research is needed for this type of familial lifespan study to reveal if significant age differences are due to a cohort phenomenon or a true aging effect. Also, future lifespan research on well-being should include old-old adults, including, if possible, centenarians. Additionally, future research in this area should, whenever possible, attempt to use shorter assessment questions that are less complicated to help reduce missing data from older adults. Finally, future studies assessing Ryan, Huta, and Deci's (2008) model should utilize statistical methods, such as structural equation modeling, that can comprehensively assess pathways and theoretical mediating effects between measures.

Practical Applications of This Study

The research carried out in this study has helped identify strengths and weakness in the well-being of older Canadians, thus the findings will be of interest to three groups in particular: (a) geropsychology researchers, (b) clinicians and social services organizations who are looking to create greater awareness about older adult's health in general and who are looking to implement effective interventions that promote psychological health, and (c) the general population, including older adults themselves.

With respect to the first group, geropsychology researchers, the current study represents an improvement in lifespan investigations of well-being because it is theoretically-based and uses a comprehensive approach to well-being that offers directions for future research. On the one hand, this study provides continued evidence on the “paradox of aging”, broadening this scope of research using a related sample and statistical models that include a number of important covariates. On the other hand, older adults in this study experienced lower levels of eudaimonia. Based on these findings, geropsychology researchers could investigate three areas that are applicable to this apparent decline in eudaimonia at the same time as they experience high levels of hedonic well-being: a) is eudaimonia declining with age because society does not provide enough avenues for personal growth for older adults? b) is eudaimonia decreasing because older adults are no longer concerned with expanding horizons due to changes in perception of time caused by aging? c) does eudaimonia truly decrease with age, or is this apparent decline a methodological artifact caused by assessment tools that are not firmly rooted in Aristotle’s philosophy of eudaimonia? Evaluating these three lines of research can provide further rationale regarding lower levels of eudaimonia among older than younger adults.

With respect to the second group, clinicians and social service organizations can use these findings to tailor services and interventions aimed at enhancing mental health among older adults. These groups can use the positive findings from this study to remind themselves and their clients that negative aging stereotypes are often not based on objective data. Moreover, the negative findings from this study (lower levels of eudaimonia and competence) may be addressed through tailored interventions, such as assertiveness training for competence, the importance of formal volunteering roles, pertinent psychoeducational resources, and the significance of physical exercise in an effort to enhance older adults’ well-being.

Finally, with respect to younger adults and older adults themselves, the current study's findings largely challenge negative stereotypes regarding older adults' mental health that are propagated in society. In a society that glorifies youth and youthfulness, becoming older is often perceived as a negative and an undesirable consequence by the public and potentially older adults themselves. By informing both younger and older adults of this study's findings, aging may be increasingly viewed as a potentially positive experience with many benefits. According to this study, growing older is associated with becoming more mindful, having more time to do things we enjoy, and having better mental health, which could help older adults feel more empowered and appreciative of their status as senior citizens.

Summary

In conclusion, this study used a new theoretical model and a related sample of younger, middle-aged, and older adults to better understand age differences in well-being. This comprehensive assessment demonstrated the positive effects of age on mindfulness, autonomy with personal goals, aspirations, the basic psychological need of autonomy, positive affect, negative affect, and mental health. In contrast, the results revealed the negative effects of aging on the basic psychological need of competence and on eudaimonia. Interestingly, the negative influence of age on eudaimonia disappeared for middle-aged adults after adjusting for the influence of health, volunteer status, and other sociodemographic variables. This speaks to the significance of understanding the effects of age on well-being within the context of gender, education, income, physical health, race, and formal volunteering. The theoretical model and findings from this study shed new light on potential reasons for inconsistencies in previous research examining changes in well-being over the lifespan, and suggests avenues for future research on this important topic.

References

- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. E. (1998). Psychometric Properties of the 42-Item and 21-Item Versions of the Depression Anxiety Stress Scales in Clinical Groups and a Community Sample, *Psychological Assessment, 10*, 176-181.
- Aristotle. (1947). *Nicomachean Ethics* (W.D. Ross, Trans.). In R. Mckeon (Ed.), *Introduction to Aristotle*. New York: Modern Library.
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27–45.
- Barrick, A. L., Hutchinson, R. L., & Deckers, L. H. (1989). Age effects on positive and negative emotions. *Journal of Social Behavior and Personality, 4*, 421–429.
- Belanger, A., Martel, L., & Caron-Melenfant, E. (2005). Population Projections for Canada. *Provinces and Territories, 2005-2031*.
- Blachflower, D. D., & Oswald, A. J. (2008). Is well-being U-Shaped over the life cycle? *Social Science & Medicine 66*, 1733-1749.
- Blazer, D., George, L. K., & Hughes, D. (1991). The epidemiology of anxiety disorders: an age comparison. In: Salzman C, Lzebowitz BD, editors. *Anxiety in the Elderly: Treatment and Research*. New York: Springer Publishing Co.; 1991:17–30.
- Bradburn, N. M. (1969). *The Structure of psychological well-being*. Chicago: Alpine Publishing.
- Broadie, S. & Rowe, C. (2002). *Nichomachean Ethics*. New York: Oxford.
- Brown, K. W. & Ryan, R. M. (2003). The benefits of being present: The role of mindfulness in psychological well-being, *Journal of Personality and Social Psychology, 84*, 822-848.
- Brown, K. W. & Ryan, R. M., & Creswell, D. (2007). Mindfulness: Theoretical Foundations and Evidence for its Salutary Effects. *Psychological Inquiry, 18*, 211-237.
- Buhler, C., & Massarik, F. (Eds). (1968). *The Course of human life*. New York: Springer.
- Biswas-Diener, R., & Diener, E. (2006). The Subjective Well-Being of the Homeless, and Lessons for Happiness. *Social Indicators Research, 76 (2)*, 185-205.
- Blanchard-Fields, F., & Coats, A. B. (2008). The experience of anger and sadness in everyday problems impacts age differences in emotional regulation. *Developmental Psychology, 44*, 1547-1556.

- Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being u-shaped over the life cycle? *Social Science & Medicine*, 66, 1733-1749.
- Carlson, L. E., & Brown, K. W. (2005). Validation of the Mindful Attention Awareness Scale in a cancer population. *Journal of Psychosomatic Research*, 58, 29-33.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 1910-1915.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165-181.
- Carstensen, L. L., Pasupathi, M. & Nesselroade, J. R. (2000). Emotional experience everyday life across the adult life span. *Journal of Personality and Social Psychology*, 79, 644-655.
- Coleman, G. C. (2000). Aging and satisfaction of psychological needs. *Psychological Inquiry*, 11, 291-295.
- Csikszentmihalyi, M. (1990). *Flow*. New York: Harper & Row.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The what and why of goal pursuits: Human needs and and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Deci, E. L. & Ryan, R. M. (2002b) (Eds.). *Handbook on self-determination research*. Rochester: University of Rochester Press.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, Eudaimonia, And Well-Being: An Introduction. *Journal of Happiness Studies*, 9, 1-11.
- Deneve, K. M. (1999). Happy as an extraverted claim? The role of personality for subjective well-being. *Current Direct Psychology Science*, 8, 144-144.
- Dierendonck, D. V. (2005). The construct validity of Ryff's Scales of Psychological Well-being and its extension with spiritual well-being. *Personality and Individual Differences*, 36 (3), 629-643.
- Diener, E. (1984). Subjective Well-Being. *Psychological Bulletin*, 95, 542-575.
- Diener, E., & Diener, C. (1995). The wealth of nations, revisited: Income and quality of life. *Social Indicators Research*, 36, 275-286.

- Diener, E., Emmons, R., Larsen, R., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 47*, 1105-1117.
- Diener, E., & Suh, M. E. (1997). Subjective well-being and age: An international analysis. In K. W. Schaie & M. P. Lawton (Eds.). *Annual Review of Gerontology and Geriatrics* (Vol. 8, pp. 304-324). New York: Springer.
- Diener, E., Suh, M. E., Lucas, R. E. & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276-302.
- Dowd, J. J. (1990). Ever since Durkheim: The socialization of human development. *Human Development, 33*, 138-159.
- Dunn, D. S. & Brody, C. (2008). Defining the Good Life Following Acquired Physical Disability. *Rehabilitation Psychology, 4*, 413-425.
- Erikson, E. (1959). Identity and the life cycle. *Psychological issues, 1*, 18-164
- Field, A. (2008). *Multiple regression using SPSS/PASW*. <http://www.statisticshell.com/multireg.pdf>
- Ferring, D., & Flipp, S. H. (1995). The structure of subjective well-being in the elderly: A test of different models by structural equation modeling, *European Journal of Psychological Assessment, 11*, 32-54.
- Fox, J. (2008). *Applied Regression Analysis, Linear Models, and Related Methods*. Sage Publications, TO.
- Garson, D. G. (2008). *Regression Analysis*. Retrieved from North Carolina State University: <http://faculty.chass.ncsu.edu/garson/PA765/assumpt.htm>
- Gagne, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivatin and Emotion, 27*, 199-223.
- Government of Manitoba. (2009). *Manitoba High School Graduation Rate, June 2001 to June 2009*. Winnipeg, Manitoba.
- Government of Manitoba. (2010). *Profile of Manitoba's Seniors*. Winnipeg, Manitoba.
- Government of Manitoba. (2007). *The Census in Manitoba: 1951 and 2006*. Winnipeg, Manitoba.
- Gross, J. J., Carstensen, L. L., Psupathi, M., Tsai, J., Skorpen, C. G., & Hsu, A. Y. C. (1997). Emotion and aging: Experience, expression, and control. *Psychology and Aging, 12*, 590-599.

- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A metaanalysis. *Journal of Psychosomatic Research*, 57, 35–43.
- Gum, A. M., King-Kallimanis, B., & Kohn, R. (2009). Prevalence of mood, anxiety, and substance—abuse disorders for older Americans in the National Comorbidity Survey Replication. *American Journal of Geriatric Psychiatry*, 17, 769-781.
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44, 227-239.
- Horley, J., & Lavery, J. J. (1995). Subjective well-being and age. *Social Indicators Research*, 34, 275-282.
- Ingelehart, R. (1990). *Culture Shift in advanced industrial society*. Princeton, NJ: Princeton University Press.
- Isaacowitz, D. A., Vaillant, G. E., & Seligman, M. E. P. (2003). Strengths and satisfaction across the adult lifespan. *International Journal of Aging and Human Development*, 57(2), 181-201.
- Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.
- Jeste, D. V., Alexopoulos, G. S., Bartels, S. J., Cummings, J. L., Gallo, J. J., Gottlieb, G. L., Halpain, M. C., Barton, W. P., Patterson, T. L., Reynolds, C. R., & Lebowitz, B. D., (1999). Consensus statement on the upcoming crisis in geriatric mental health. *Archives General Psychiatry*, 56, 848-853.
- Kashdan, T. B., Biswas-Diener, R. M. & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *Journal of Positive Psychology*, 3, 219-233.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410-422.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 80-87.
- Kasser, V. G., & Ryan, R. M. (1999). The relation of psychological needs for autonomy and relatedness to vitality, well-being, and mortality in a nursing home. *Journal of Applied Social Psychology*, 29, 935-954.

- Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. Sheldon (Eds.) *Life goals and well-being*. Gottingen: Hogrefe.
- Kessler, R. C., Mickelson, K. D., Walter, E. E., Zhaos, S., & Hamilton, L. (2004). Age and depression in the MIDUS survey. In O.G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we: A national survey of well-being at midlife* (pp. 227-251). Chicago: University of Chicago Press.
- Kristellar, J. L., & Hallet, B. (1999). An Exploratory Study of a Meditation-Based Intervention for Binge Eating Disorder. *Journal of Health Psychology, 4*, 357-363.
- Kunzmann, U. (2008). Differential age trajectories of positive and negative affect: Further evidence from the Berlin aging study. *Journal of Gerontology, 63*, 261-270.
- Kunzmann, U., Little, T. D., & Smith, J. (2000). Is Age-Related Stability of Subjective Well-Being a Paradox? Cross-Sectional and Longitudinal Evidence from the Berlin Aging Study. *Psychology and Aging, 15*, 511-526.
- Lang, F. R., & Carstensen, L. L. (1994.) Close emotional relationships in late life: Further support for proactive aging in the social domain, *Psychology and Aging, 9*, 315-324.
- Lawton, M. P., Moss, M., Fulcomer, M., & Kleban, M. H. (1982). A research and service oriented multilevel assessment instrument. *Gerontology, 37*, 91-99.
- Linehan, M. M., Armstrong, H. E., Suarez, A., Allman, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48*, 1060-1064.
- Lovibond, P. E., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-342.
- Mackenzie, C. S., Paruga, J., & Sareen, J. (in press). Correlates of perceived need for and use of mental health services by older adults in the collaborative psychiatric epidemiology surveys. *American Journal of Geriatric Psychiatry*.
- Malatesta, C. Z., & Kalnok, M. (1984). Emotional experience in younger and older adults. *Journal of Gerontology, 39*, 301-308.
- Martin, L. L., & Kleiber, D. A. (2005). Letting Go of the Negative: Psychological Growth From a Close Brush with Death. *Traumatology, 11*, 221-232.
- Maslow, A. (1968). *Toward a psychology of being (2nd ed.)*. New York: D. Van Norstrand.

- Miquelon, P., Vallerand, R. J. (2006). Goal motives, well-being and physical health: Happiness and self realization as psychological resources under challenge. *Motivational Emotion*, 30, 259-272.
- Mirowsky, J., & Ross, C. E. (1999). Well-being across the life course. In A.V. Horwitz & T.L. Scheid (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 328-347). New York: Cambridge University Press.
- Mrockzek, D. K., Kolarz, C. M. (1998). The Effect of Age on Positive and Negative Affect: A Developmental Perspective on Happiness. *Journal of Personality and Social Psychology*, 75, 1333-1349.
- Okun, M. A. (1994). The relation between motives for organizational volunteering and frequency of volunteering by elders. *Journal of Applied Gerontology*, 13(2), 115-126.
- Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, 137-152.
- Rea, L. M., & Parker, R. A. (1992). *Designing and conducting survey research*. San Francisco: Jossey-Boss.
- Regier, D. A., Rae, D. S., & Narrow, W. E. (1998). Prevalence of anxiety disorders and their comorbidity with mood and addictive disorders. *British Journal of Psychiatry*, 173, 24-28.
- Rogers, C. R. (1961). *On becoming a person*. Boston: Houghton Mifflin.
- Roszak, T. (1998). *America the Wise: The Longevity Revolution and the True Wealth of Nations*. Boston: Houghton Mifflin.
- Rothman, K. J. (1990). No adjustments are needed for multiple comparisons. *Epidemiology*, 1 (1), 43-46.
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, 63, 397-427.
- Ryan, R. M., & Deci, E. L. (2000). Self Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55, 68-78.
- Ryan, R. M., & Deci, L. D. (2001). On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology*, 52, 141-166.
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living Well: A Self-Determination Theory Perspective On Eudaimonia. *Journal of Happiness Studies*, 9, 139-170.

- Ryan, R. M., & Frederick, C. M. (1997). On energy, personality and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality, 65*, 529-565.
- Ryan, R. M., & LaGuardia, J. G. (2000). What is being optimized over development. A self-determination theory perspective on basic psychological needs across the life span. In S. Qualls & R. Abeles (Eds.). *Dialogues on psychology and aging*. Washington, DC: American Psychological Association.
- Ryff, C. D. (1989a). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069-1081.
- Ryff, C. D. (1989b). Beyond Ponce de Leon and life satisfaction: New directions in quest of successful aging. *International Journal of Behavioral Development, 12*, 35-55.
- Ryff, C. D. (1989c). In the Eye of the Beholder: Views of Psychological Well-Being Among Middle-Aged and Older Adults. *Psychology and Aging, 4*, 195-210.
- Ryff, C. D. (1991). Possible selves in adulthood and old age: A tale of shifting horizons. *Psychology and Aging, 6*, 286-295.
- Ryff, C. D., & Keyes, C. L. M. (1995) The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719-727.
- Ryff, C. D., Keyes, C. L. M., & Hughes, D. L. (2003). Status inequalities, perceived discrimination, and eudaimonic well-being: Do the challenges of minority life hone purpose and growth? *Journal of Health and Social Behavior, 44* (3), 275-291.
- Ryff, C. D., Shmotkin, D., & Keyes, C. L. M. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*, 1007-1022.
- Ryff, C. D., & Singer, B. H., & Palmersheim, K. A. (2004b). Social inequalities in health and well-being: The role of relational and religious protective factors, in O.G. Brim, C.D. Ryff and R. C. Kessler (eds.), *How Healthy are We? How Healthy are We?: A National Study of Well-Being at Midlife* (University of Chicago Press, Chicago, IL), 90-123.
- Ryff, C. D., & Singer, B. H. (2008). Know Thyself And Become What You Are: A Eudaimonic Approach to Psychological Well-Being. *Journal of Happiness Studies, 9*, 13-39.
- Shapiro, S. L., Schwartz, G. E., & Bonner, G. (1998). Effects of mindfulness-based stress reduction on medical and premedical students. *Journal of Behavioral Medicine, 21*, 581-599.

- Sheldon, K. M., & Elliot, A. J. (1999). Goal Striving, need-satisfaction, and longitudinal well-being: The self concordance model. *Journal of Personality and Social Psychology*, 76, 482-497.
- Sheldon, K. M., & Houser-Marko, L., & Kasser, T. (2006). Does autonomy increase with age? Comparing the goal motivations of college students and their parents. *Journal of Research and Personality*, 40, 168-178.
- Sheldon, K. M., & Kasser, T. (2001). Getting older, getting better. Personal strivings and psychological maturity across the lifespan. *Developmental Psychology*, 37, 491-501.
- Sheldon, K. M., Kasser, T., Houser-Marko, L., Jones, T., & Turban, D. (2005). Doing ones duty: Chronological age, felt autonomy and subjective well-being. *European Journal of Personality*, 19, 97-115.
- Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology*, 91(2), 331-341.
- Shmotkin, D. (1990). Subjective well-being as a function of age and gender: A multivariate look for differentiated trends. *Social Indicators Research*, 23, 201-230.
- Stacey, C. A., & Gatz, M. (1991). Cross-sectional age differences and longitudinal change on the Bradburn Affect Balance Scale. *Journal of Gerontology*, 46, 76-78.
- Stone, A. A., Schwartz, J. E., Broderick, J. E., & Deaton, A. (2010). A snapshot of the age distribution of psychological well-being in the United States. *PNAS*, 107, 9985-9990.
- Streiner, D. L., Cairney, & Veldhuizen, S. (2006). The epidemiology of psychological problems in the elderly. *Canada Journal of Psychiatry*, 51, 185-191.
- Vallerand, R. J., & O'Connor, B. P. (1989). Motivation in the elderly: A theoretical framework and some promising findings. *Canadian Psychology*, 30, 538-550.
- Vallerand, R. J., O'Connor, B. P., & Blais, M. R. (1989). Life satisfaction of elderly individuals in regular community housing, in low-cost community housing, and high and low self-determination nursing homes. *International Journal of Aging and Human Development*, 28, 277-283.
- Vaux, A., & Meddin, J. (1987). Positive and negative life change and positive and negative affect among the rural elderly. *Journal of Community Psychology*, 15, 447-458
- Waterman, A. S. (1984). *The psychology of individualism*. New York: Doubleday.

- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678-691.
- Waterman, A. S. (2008). Reconsidering happiness: a eudaimonist's perspective. *The Journal of Positive Psychology*, 3 (4), 234-252.
- Waterman, A. S. (2010). The questionnaire for Eudaimonic Well-Being: Psychometric properties, demographic comparisons, and evidence of validity. *The Journal of Positive Psychology*, 41-61.
- Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The Implications of Two Conceptions of Happiness (Hedonic Enjoyment and Eudaimonia) for the Understanding of Intrinsic Motivation. *Journal of Happiness Studies*, 9, 41-79.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of Positive and Negative Affect. The PANAS Scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Webster, C. M. (2008). Intrinsic motivation and well-being: Seniors in community associations. *Journal of Nonprofit & Public Sector Marketing*, 20 (2), 229-244.
- Westerhof, G. J., & Keyes, C. L. M. (2010). Mental illness and mental health: The two continua model across the lifespan. *Journal of Adult Development*, 17, 110-119.
- Wolitzky-Taylor, K. B., Castriotta, N., Lenze, E. J., Stanley, M. A., & Craske, M. G. (2010). Anxiety Disorder in older adults: A comprehensive review. *Depression and Anxiety*, 27, 190-211.

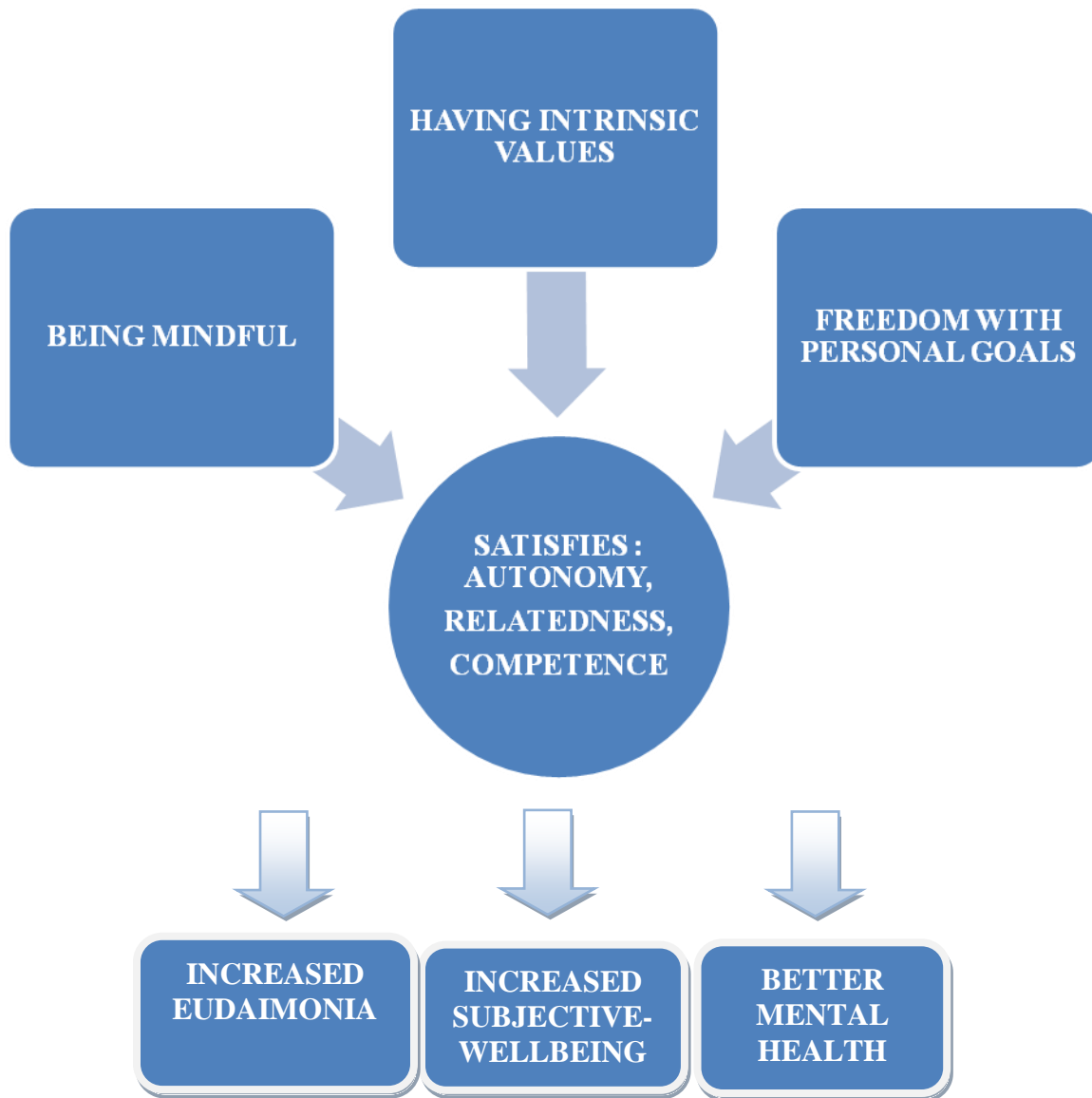


Figure 1. Ryan, Huta, & Deci's (2008) theoretical framework of well-being.

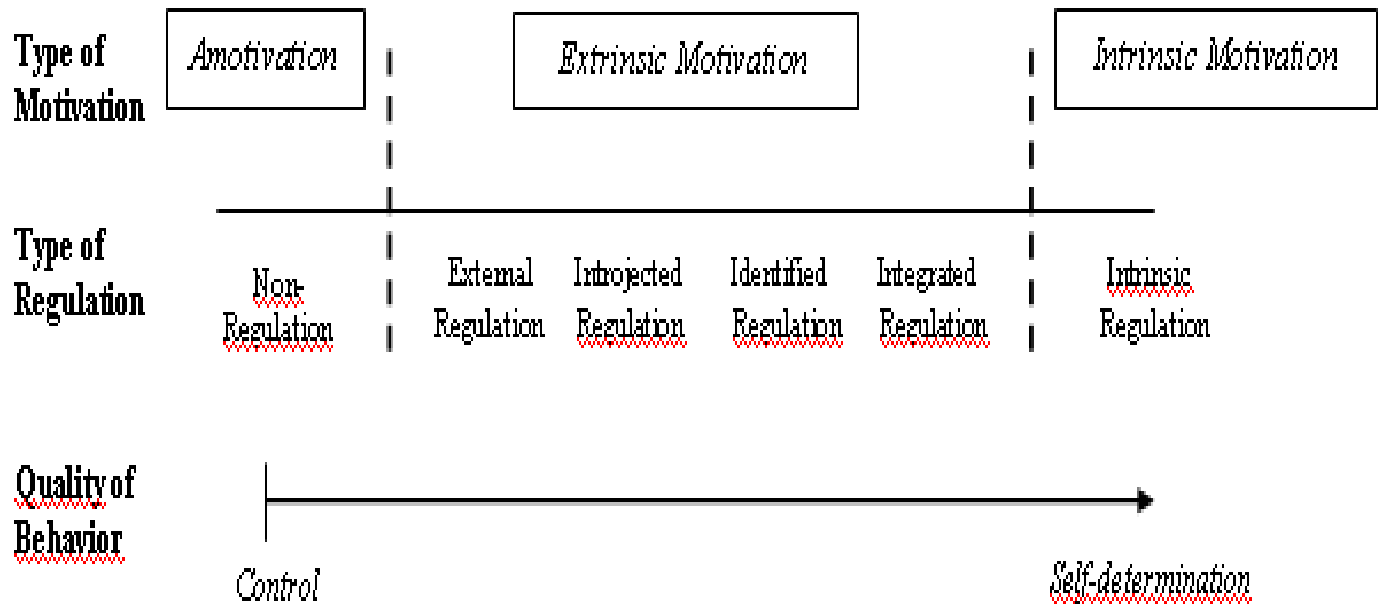


Figure. 2. Continuum of Self-determination (Deci & Ryan, 2002b, p. 16)

Table 1

Participant Sociodemographic Characteristics and Cramer's V

Demographic characteristics	Young Generation (n = 90)	Middle Generation (n = 90)	Older Generation (n = 90)	F or X ²	Cramer's V
Mean (SD) Age	18.9 (2.34)	48.13 (4.22)	75.05 (6.61)	3098.1**	
Female (%)	82 (91)	72 (80)	68 (76)	7.91*	.17
Education (%)	(100)	(99)	(96)	168.56**	.56
Less than high school	0	2	39		
High school	86	34	23		
College	1	19	10		
University or above	3	34	14		
Income (%)	(100)	(99)	(84)	105.51**	.44
Less than \$25,000	11	1	14		
\$25,000-\$50,000	8	6	37		
\$50,000-\$75,000	20	23	14		
Over \$75,000	51	59	11		
White race/ethnicity (%)	82 (91)	80 (91)	80 (91)	4.34	.09
Current volunteering (%)	22 (24)	31(34)	22(24)	7.32	.12
Mean (SD) physical health	7.45 (1.34)	7.64 (1.33)	7.17 (1.45)	2.71	
Living with family/yes	76 (84)	76 (84)	4 (4)	451.43**	.91
Occupation Status	(100)	(99)	(84)	318.00**	.77
Full-time	5	64	5		
Part-time or student	83	14	11		
Retired	0	3	69		
Other	2	8	4		
Marital Status	(100)	(98)	(100)	302.46**	.75
Single	86	2	0		
Married	4	74	50		
Widowed	0	1	34		
Divorced	0	11	6		

* $p < .05$. ** $p < .01$

Table 2

Mean (and SD) Values on the Study Dependent Measures for Young, Middle-aged, and Older Participants

Outcome Measure	Young Adults			Middle Adults			Older Adults		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Autonomy	90	5.18	.72	89	5.31	.86	90	5.85	.81
Competence	90	5.39	.92	89	5.50	.82	87	5.08	.93
Relatedness	90	6.03	.73	89	5.94	.70	90	6.04	.65
Personal goals	86	3.12	5.76	82	10.37	7.09	66	13.94	8.36
Aspirations	90	5.29	.70	89	4.63	.63	86	4.33	.73
Mindfulness	90	4.17	.75	89	4.30	.68	88	4.66	.74
Eudaimonia	89	4.96	.58	89	4.94	.66	88	4.60	.84
Vitality	90	4.77	1.15	89	4.86	1.12	89	5.10	1.28
SWLS	90	25.63	6.00	89	25.90	6.52	89	26.84	6.16
Positive affect	90	34.60	7.40	89	34.97	7.04	89	35.90	7.45
Negative affect	90	23.11	7.86	89	17.46	5.34	89	15.52	5.55
Mental health	90	13.36	9.67	89	7.67	5.73	85	8.22	6.68

Table 3.

Predictors of Autonomy, Competence, and Relatedness

	Autonomy β	Competence β	Relatedness β
Step 1			
Generation groups (reference is older adults)			
Middle-aged adult	-.291**	.217**	-.070
Young adult	-.373**	.173*	-.014
R ²	11.7%	4%	.40%
Step 2			
Generation groups (reference is older adults)			
Middle-aged adult	-.260**	.186*	-.092
Young adult	-.302**	.211*	-.088
Gender (0 = male, 1 = female)	.061	.106	.195**
Education (reference is less than high school)			
High school	-.075	-.043	.144
College	-.057	.062	-.024
Post-secondary	.063	.024	.125
Income (reference is less than \$25,000)			
\$25,000-50,000	.001	-.002	-.019
\$50,000-75,000	-.036	.003	.011
Over \$75,000	-.130	-.034	-.100
Race/Ethnicity (0 = non-white, 1 = white)	.039	-.049	.162**

Physical Health Total	.192**	.268**	.110
Volunteering (0 = no, 1 = yes)	-.031	.146*	.139*
ΔR^2	6.1%	13.6%	12.1%
Overall R^2	17.8%	17.5%	12.6%

* $p < .05$. ** $p < .01$

Table 4

Correlations Between Generations, Autonomy, Competence, and Relatedness

	1	2	3	4
1. Generations	1	-.32**	.14*	-.01
2. Autonomy		1	.35**	.38**
3. Competence			1	.35**
4. Relatedness				1

* $p < .05$. ** $p < .01$

Table 5.

Predictors of Relative Autonomy, Relative Aspirations, and Mindfulness

	Relative Autonomy β	Relative Aspirations β	Total Mindfulness β
Step 1			
Generations groups (reference is older adults)			
Middle-aged adult	-.209**	-.047	-.229**
Young adult	-.624**	-.280**	-.318**
R ²	28.8% **	6.7% **	8.1%
Step 2			
Generations groups (reference is older adults)			
Middle-aged adult	-.287**	-.002	-.365**
Young Adult	-.682**	-.287**	-.361**
Gender (0 = male, 1 = female)	-.026	.125*	.045
Education (reference is less than high school)			
High school	.155	.161	.153
College	.047	.096	.288**
Post-secondary	.213*	.114	.226*
Income(reference is less than \$25,000)			
\$25,000-50,000	-.128	-.122	-.147
\$50,000-75,000	.024	-.137	-.135
Over \$75,000	-.108	-.296**	-.118
Race/Ethnicity (0 = non-white, 1 = white)	.021	.221**	.128*
Physical Health Total	.108	.041	.174**

Volunteering (0 = no, 1 = yes)	.068	.063	.045
ΔR^2	5.3%	9.8% **	10.5% **
Overall R^2	34.1%	16.5%	18.7%

Note. Separate regression analyses were conducted on each type of regulation style (external, introjected, identified, intrinsic) due to low Cronbach's alpha for relative autonomy and the results were comparable. * $p < .05$. ** $p < .01$

Table 6

Correlations Between Generations and Motivation Constructs

	1	2	3	4
1. Generations	1	-.530**	-.245**	-.268**
2. Relative Autonomy		1	.276**	.254**
3. Relative Aspirations			1	.274**
4. Relatedness				1

* $\rho < .05$. ** $\rho < .01$

Table 7.

Predictors of Positive Affect, Negative Affect, and Satisfaction with Life

	Positive Affect β	Negative Affect β	Satisfaction with life β
Step 1			
Generation groups (reference is older adults)			
Middle-aged adult	-.065	.127*	-.065
Young adult	-.076	.506**	-.098
R ²	.50%	20.9%**	.80%
Step 2			
Generation groups (reference is older adults)			
Middle-aged	-0.198*	.168*	-.149
Young Adult	-.161	.516**	-.113
Gender (0 = male, 1 = female)	.043	-.030	.094
Education (reference is less than high school)			
High school	.086	-.046	-.067
College	.070	-.013	-.075
Post-secondary	.093	-.098	.054
Income (reference is less than \$25,000)			
\$25,000-50,000	.023	-.062	.078
\$50,000-75,000	.081	-.094	.121
Over \$75,000	.102	.001	.165
Race/Ethnicity (0 = non-white, 1 = white)	-.046	-.020	.073
Physical Health Total	.312**	-.160**	.215**

Lifespan Well-Being 90

Volunteering (0 = no, 1 = yes)	.122*	-.035	.178**
ΔR^2	14.4%**	4.4%	14.4%**
Overall R^2	14.9%	25.3%	15.2%

Note. Higher levels of mental health represents poorer functioning * $p < .05$. ** $p < .01$

Table 8

Correlations Between Generations, Positive Affect, Negative Affect, and SWLS

	1	2	3	4
1. Generations	1	-.073	.438**	-.079
2. Positive Affect		1	-.172**	.439**
3. Negative Affect			1	-.319**
4. SWLS				1

Note. SWLS is the short-form for the Satisfaction with Life Scale * $\rho < .05$. ** $\rho < .01$

Table 9.

Predictors of Positive Affect, Negative Affect, and Satisfaction with Life

	Eudaimonia β	Vitality β	Mental Health β
Step 1			
Generation groups (reference is older adults)			
Middle-aged adult	.230**	-.093	-.030
Young adult	.237**	-.122	.302**
R ²	5.5%**	1.2%	10.1%**
Step 2			
Generation groups (reference is older adults)			
Middle-aged	.096	-.143	.043
Young Adult	.195*	-.166	.322**
Gender (0 = male, 1 = female)	.150*	.080	-.126**
Education (reference is less than high school)			
High school	.126	-.009	-.061
College	.203*	-.063	-.021
Post-secondary	.220*	-.008	-.171*
Income (reference is less than \$25,000)			
\$25,000-50,000	-.022	-.061	-.054
\$50,000-75,000	-.027	-.020	-.092
Over \$75,000	-.028	-.047	.020
Race/Ethnicity (0 = non-white, 1 = white)	-.021	-.058	-.076
Physical Health Total	.260**	.451**	-.291**

Lifespan Well-Being 93

Volunteering (0 = no, 1 = yes)	.126*	.096	-.076
ΔR^2	15.8% **	23.5% **	14.3% **
Overall R^2	21.3%	24.7%	24.4%

* $p < .05$. ** $p < .01$

Table 10

Correlations Between Generations, Eudaimonia, Vitality, and Mental Health

	1	2	3	4
1. Generations	1	.202**	-.114	.266**
2. Eudaimonia		1	.461**	-.336**
3. Vitality			1	-.440**
4. Mental Health				1

* $\rho < .05$. ** $\rho < .01$

(Appendix A)
Basic Psychological Needs

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following scale to respond:

1 2 3 4 5 6 7
Not at all Somewhat Very True
true True

1. I feel like I am free to decide for myself how to live my life.	1	2	3	4	5	6	7
2. I really like the people I interact with	1	2	3	4	5	6	7
3. Often, I do not feel very competent.	1	2	3	4	5	6	7
4. I feel pressured in my life.	1	2	3	4	5	6	7
5. People I know tell me I am good at what I do.	1	2	3	4	5	6	7
6. I get along with people I come into contact with.	1	2	3	4	5	6	7
7. I pretty much keep to myself and don't have a lot of social contacts.	1	2	3	4	5	6	7
8. I generally feel free to express my ideas and opinions.	1	2	3	4	5	6	7
9. I consider the people I regularly interact with to be my friends.	1	2	3	4	5	6	7
10. I have been able to learn interesting new skills recently.	1	2	3	4	5	6	7
11. In my daily life, I frequently have to do what I am told.	1	2	3	4	5	6	7
12. People in my life care about me.	1	2	3	4	5	6	7
13. Most days I feel a sense of accomplishment from what I do.	1	2	3	4	5	6	7
14. People I interact with on a daily basis tend to take my feelings into consideration.	1	2	3	4	5	6	7
15. In my life I do not get much of a chance to show how capable I am.	1	2	3	4	5	6	7
16. There are not many people that I am close to.	1	2	3	4	5	6	7

17. I feel like I can pretty much be myself in my daily situations.	1	2	3	4	5	6	7
18. The people I interact with regularly do not seem to like me much.	1	2	3	4	5	6	7
19. I often do not feel very capable.	1	2	3	4	5	6	7
20. There is not much opportunity for me to decide for myself how to do things in my daily life.	1	2	3	4	5	6	7
21. People are generally pretty friendly towards me	1	2	3	4	5	6	7

(Appendix B)
Personal Goals

Personal projects are projects and concerns that people think about, plan for, carry out, and sometimes (though not always) complete or succeed at. They may be more or less difficult to implement; require only a few or a complex series of steps; represent different areas of a person's life; and may be more or less time consuming, attractive, and urgent.

Please list three personal goals that you have in the next couple of months

1. _____
2. _____
3. _____

Please read each of the following items carefully, thinking about why you want to pursue this goal.

Goal 1: _____

	Not at all for this reason				Completely for this reason
Because you really identify with the goal	1	2	3	4	5
Because of the enjoyment and stimulation that this goal would provide you	1	2	3	4	5
Because you would feel ashamed, guilty, or anxious if you did not have this goal	1	2	3	4	5
Because of external rewards, such as money, grades, status, or any other tangible rewards that this goal would produce	1	2	3	4	5

Please read each of the following items carefully, thinking about why you want to pursue this goal.

Goal 2: _____

	Not at all for this reason				Completely for this reason
Because you really identify with the goal	1	2	3	4	5
Because of the enjoyment and stimulation that this goal would provide you	1	2	3	4	5
Because you would feel ashamed, guilty, or anxious if you did not have this goal	1	2	3	4	5
Because of external rewards, such as money, grades, status, or any other tangible rewards that this goal would produce	1	2	3	4	5

Please read each of the following items carefully, thinking about why you want to pursue this goal.

Goal 3: _____

	Not at all for this reason				Completely for this reason
Because you really identify with the goal	1	2	3	4	5
Because of the enjoyment and stimulation that this goal would provide you	1	2	3	4	5
Because you would feel ashamed, guilty, or anxious if you did not have this goal	1	2	3	4	5

Because of external rewards, such as money, grades, status, or any other tangible rewards that this goal would produce	1	2	3	4	5
--	---	---	---	---	---

(Appendix C)
Aspirations

Everyone has long-term Goals or Aspirations. These are the things that individuals hope to accomplish over the course of their lives. In this section, you will find a number of life goals, presented one at a time, and we ask you one question about each goal. (a) How important is this goal to you? Please use the following scale in answering each of the three questions about each life goal.

1	2	3	4	5	6	7
Not at all			Moderate			Very

1. To be a very wealthy person.	1	2	3	4	5	6	7
2. To grow and learn new things.	1	2	3	4	5	6	7
3. To have my name known by many people	1	2	3	4	5	6	7
4. To have good friends that I can count on.	1	2	3	4	5	6	7
5. To successfully hide the signs of aging.	1	2	3	4	5	6	7
6. To work for the betterment of society.	1	2	3	4	5	6	7
7. To be physically healthy.	1	2	3	4	5	6	7
8. To have many expensive possessions.	1	2	3	4	5	6	7
9. At the end of my life, to be able to look back on my life as meaningful and complete	1	2	3	4	5	6	7
10. To be admired by many people.	1	2	3	4	5	6	7
11. To share my life with someone I love	1	2	3	4	5	6	7
12. To have people comment often about how attractive I look	1	2	3	4	5	6	7
13. To assist people who need it, asking nothing in return.	1	2	3	4	5	6	7
14. To feel good about my level of physical fitness.	1	2	3	4	5	6	7
15. To be financially successful.	1	2	3	4	5	6	7
16. To choose what I do, instead of being pushed along by life.	1	2	3	4	5	6	7

17. To be famous.	1	2	3	4	5	6	7
18. To have committed, intimate relationships.	1	2	3	4	5	6	7
19. To keep up with fashions in hair and clothing.	1	2	3	4	5	6	7
20. To work to make the world a better place.	1	2	3	4	5	6	7
21. To keep myself healthy and well.	1	2	3	4	5	6	7
22. To be rich.	1	2	3	4	5	6	7
23. To know and accept who I really am.	1	2	3	4	5	6	7
24. To have my name appear frequently in the media	1	2	3	4	5	6	7
25. To feel that there are people who really love me, and whom I love	1	2	3	4	5	6	7
26. To achieve the "look" I've been after.	1	2	3	4	5	6	7
27. To help others improve their lives.	1	2	3	4	5	6	7
28. To be relatively free from sickness	1	2	3	4	5	6	7
29. To have enough money to buy everything I want.	1	2	3	4	5	6	7
30. To gain increasing insight into why I do the things I do.	1	2	3	4	5	6	7
31. To be admired by lots of different people.	1	2	3	4	5	6	7
32. To have deep enduring relationships.	1	2	3	4	5	6	7
33. To have an image that others find appealing.	1	2	3	4	5	6	7
34. To help people in need.	1	2	3	4	5	6	7
35. To have a physically healthy life style.	1	2	3	4	5	6	7

(Appendix D)
MAAS

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

	1	2	3	4	5	6
	Almost Always	Very frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never
1. I could be experiencing some emotion and not be conscious of it until sometime later.	1	2	3	4	5	6
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
3. I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
6. I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
7. It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
8. I rush through activities without being really attentive to them	1	2	3	4	5	6
9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	1	2	3	4	5	6
10. I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
11. I find myself listening to someone with one ear, doing something else at the same time	1	2	3	4	5	6

12. I drive places on "automatic pilot" and then wonder why I went there.	1	2	3	4	5	6
13. I find myself preoccupied with the future or the past.	1	2	3	4	5	6
14. I find myself doing things without paying attention.	1	2	3	4	5	6
15. I snack without being aware that I'm eating.	1	2	3	4	5	6

(Appendix E)
PANAS

Directions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way during the past week.

Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

(Appendix F)
SWLS

Instructions: Using the following scale, indicate your agreement with each of the 5 statements below by circling the appropriate number.

1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Neither agree nor disagree	5 Slightly agree	6 Agree	7 Strongly Agree
1. In most ways my life is close to my ideal.						1 2 3 4 5 6 7
2. The conditions of my life are excellent.						1 2 3 4 5 6 7
3. I am satisfied with my life.						1 2 3 4 5 6 7
4. So far I have gotten the important things I want in life.						1 2 3 4 5 6 7
5. If I could live my life over, I would change almost nothing.						1 2 3 4 5 6 7

(Appendix G)
Self Realization/Eudaimonia

The following set of questions deals with how you feel about yourself and your life. Please remember there are no right or wrong answers. Circle the number that best describes your present agreement or disagreement with each statement.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1. I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
2. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
3. I don't want to try new ways of doing things--my life is fine the way it is.	1	2	3	4	5	6
4. I tend to focus on the present, because the future nearly always brings me problems.	1	2	3	4	5	6
5. I think it is important to have new experiences that challenge how you think about yourself and the world	1	2	3	4	5	6
6. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5	6
7. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
8. I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
9. I have the sense that I have developed a lot as a person over time.	1	2	3	4	5	6
10. I used to set goals for myself, but that now seems like a waste of time.	1	2	3	4	5	6
11. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
12. I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
13. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
14. I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
15. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
16. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6

17. There is truth to the saying you can't teach an old dog new tricks.	1	2	3	4	5	6
18. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6

(Appendix H)
 Vitality Scale

Please respond to each of the following statements by indicating the degree to which the statement is true for you in general in your life. Use the following scale:

1	2	3	4	5	6	7					
Not At All True			Somewhat True			Very True					
1. I feel alive and vital.					1	2	3	4	5	6	7
2. I don't feel very energetic					1	2	3	4	5	6	7
3. Sometimes I just feel so alive I just want to burst.					1	2	3	4	5	6	7
4. I have energy and spirit.					1	2	3	4	5	6	7
5. I look forward to each new day.					1	2	3	4	5	6	7
6. I nearly always feel alert and awake.					1	2	3	4	5	6	7
7. I feel energized.					1	2	3	4	5	6	7

(Appendix I)

DASS21				
Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you <i>over the past week</i> . There are no right or wrong answers. Do not spend too much time on any statement.				
<i>The rating scale is as follows:</i>				
0 Did not apply to me at all				
1 Applied to me to some degree, or some of the time				
2 Applied to me to a considerable degree, or a good part of time				
3 Applied to me very much, or most of the time				
1	I found it hard to wind down	0	1	2 3
2	I was aware of dryness of my mouth	0	1	2 3
3	I couldn't seem to experience any positive feeling at all	0	1	2 3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2 3
5	I found it difficult to work up the initiative to do things	0	1	2 3
6	I tended to over-react to situations	0	1	2 3
7	I experienced trembling (eg, in the hands)	0	1	2 3
8	I felt that I was using a lot of nervous energy	0	1	2 3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2 3
10	I felt that I had nothing to look forward to	0	1	2 3
11	I found myself getting agitated	0	1	2 3
12	I found it difficult to relax	0	1	2 3
13	I felt down-hearted and blue	0	1	2 3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2 3
15	I felt I was close to panic	0	1	2 3
16	I was unable to become enthusiastic about anything	0	1	2 3
17	I felt I wasn't worth much as a person	0	1	2 3
18	I felt that I was rather touchy	0	1	2 3

Lifespan Well-Being 110

19	I was aware of the action of my heart in the absence of physical exertion (e.g, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3