Three essays on perceived relative financial status and well-being in older adults

by

Joy P. Clady

B.A., University of Illinois, 1992
M. B. A., Michigan State University, 1999

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Health and Human Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2020

Abstract

In three studies, this dissertation explores the potential connection between financial perceptions, comparisons, and various components of well-being in older adults. Together, the studies aim to add to our understanding of the importance of subjective financial measures, comparisons to others, enduring effects of childhood financial status perceptions, and perceived relative financial changes over time. Such inquiry adds to our understanding of a piece of the pathway to well-being and successful aging.

Each study relies on a distinct theoretical perspective, with each including or accommodating the concepts of perceptions and comparisons. The ubiquitousness of these concepts among different theories points to these themes' importance. Data were obtained from Waves 2 and 3 of the National Social Life, Health, and Aging Project (Waite et al., 2013).

Essay One used an Ordinary Least Squares (OLS) regression to investigate the relationship between perceived relative income and happiness, as indicated by symbolic interactionism and its subtheory, reference group theory (Merton, 1968). The study also aimed to evaluate who were more salient referent others – American families in general, or peers. Using a sample of 2,101 older adults, the study did not find statistical support for the connection between either the national or the peer-based perceived relative income and happiness, and no determination could be made as to which referent other was more influential on individual happiness.

Essay Two examined the relationship between recalled perceived family financial status during childhood and anxiety in older adults through the lens of life course perspective, which holds that childhood experiences, particularly those that occur during critical periods, are tied to adult outcomes (Elder, Johnson, & Crosnoe, 2003). Using a sample of 1,475 older adults, OLS

regression analyses results did not statistically significantly link perceived family financial status in childhood and anxiety in older adults.

Essay three employed a multinomial logistic regression model to analyze a temporal comparison theory approach (Albert, 1977) to changes in depressive symptomology. In a sample of 1,257 older adults, medium change in perceived relative income was not a significant predictor of change in depressive symptom trajectories. A second model showed that those with a very large downturn in perceived relative income were more likely ($p < .01$) to have a decrease in depressive symptoms and more likely ($p < .10$) to have an increase in depressive symptoms than to have no change. The analysis suggests that change in perceived relative income over time is consequential only if the change is both big and negative. Even then, the large shift could have different outcomes for different individuals.

Overall, only limited support was found in the third paper supporting the influence of changes in perceived relative income on depressive symptom trajectories in older adults. The three studies and theoretical perspectives, however, point to the possibilities in future research. Who people use as their referent others is not yet clear, nor is whether personality traits, younger age, or individual histories, are a part of the equation that may connect perceived relative income or financial status to well-being measures.

Three essays on perceived relative financial status and well-being in older adults

by

Joy P. Clady

B.A., University of Illinois, 1992
M. B. A., Michigan State University, 1999

A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Health and Human Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2020

Approved by:

Co-Major Professor
Kristy Archuleta

Approved by:

Co-Major Professor
Sonya Lutter

Copyright

Abstract

In three studies, this dissertation explores the potential connection between financial perceptions, comparisons, and various components of well-being in older adults. Together, the studies aim to add to our understanding of the importance of subjective financial measures, comparisons to others, enduring effects of childhood financial status perceptions, and perceived relative financial changes over time. Such inquiry adds to our understanding of a piece of the pathway to well-being and successful aging.

Each study relies on a distinct theoretical perspective, with each including or accommodating the concepts of perceptions and comparisons. The ubiquitousness of these concepts among different theories points to these themes' importance. Data were obtained from Waves 2 and 3 of the National Social Life, Health, and Aging Project (Waite et al., 2013).

Essay One used an Ordinary Least Squares (OLS) regression to investigate the relationship between perceived relative income and happiness, as indicated by symbolic interactionism and its subtheory, reference group theory (Merton, 1968). The study also aimed to evaluate who were more salient referent others – American families in general, or peers. Using a sample of 2,101 older adults, the study did not find statistical support for the connection between either the national or the peer-based perceived relative income and happiness, and no determination could be made as to which referent other was more influential on individual happiness.

Essay Two examined the relationship between recalled perceived family financial status during childhood and anxiety in older adults through the lens of life course perspective, which holds that childhood experiences, particularly those that occur during critical periods, are tied to adult outcomes (Elder, Johnson, & Crosnoe, 2003). Using a sample of 1,475 older adults, OLS

regression analyses results did not statistically significant link perceived family financial status in childhood and anxiety in older adults.

Essay Three employed a multinomial logistic regression model to analyze a temporal comparison theory approach (Albert, 1977) to changes in depressive symptomology. In a sample of 1,257 older adults, medium change in perceived relative income was not a significant predictor of change in depressive symptom trajectories. A second model showed that those with a very large downturn in perceived relative income were more likely ($p < .01$) to have a decrease in depressive symptoms and more likely ($p < .10$) to have an increase in depressive symptoms than to have no change. The analysis suggests that change in perceived relative income over time is consequential only if the change is both big and negative. Even then, the large shift could have different outcomes for different individuals.

Overall, only limited support was found in the third paper supporting the influence of changes in perceived relative income on depressive symptom trajectories in older adults. The three studies and theoretical perspectives, however, point to the possibilities in future research. Who people use as their referent others is not yet clear, nor is whether personality traits, younger age, or individual histories, are a part of the equation that may connect perceived relative income or financial status to well-being measures.

Table of Contents

List of Figures

List of Tables

Acknowledgements

I feel a deep sense of gratitude to many who have provided me with guidance and support. First and foremost, Dr. Kristy Archuleta, for your support, encouragement, guidance, edits, feedback, and approachability as my major professor; my dissertation committee including my co-major professor Dr. Sonya Lutter, Dr. Martin Seay, and Dr. Frank Weyher; Dean Shanklin for encouragement right when it was much needed; the KSU PFP professors from whom I learned in the classroom; Dr. Cliff Robb for your help early on; Enochia, Jen, and Al for recommending me; and Dr. John Grable who planted the seed of a Ph.D. in my mind many years ago.

I am also especially grateful to Dr. Wookjae Heo for helping me learn statistics software that was new to me, for answering my various questions, and being a great teacher and sounding board. I am also genuinely appreciative and thankful for my cohort family who made this experience great: Allen, Linda, Lloyd, Jamie Lynn, Derek, Sarah, and Cametra. I would also like to acknowledge the other Ph.D. students (Kate, Sara, and many others)—I enjoyed working on projects with you, discussing our progress, and being a part of the supportive atmosphere to which you contributed.

My family supported me throughout. Thank you John, Jake, Mark, and Kate. I couldn't have done this without you. Many others along the way were a part of this accomplishment. Conversations with neighbors, friends, other parents, and couples were often the source of topics that inspired my curiosity, and I am thankful for those moments. Thank you to Ruth, Lori, and Anita who listened to me on many walks and rooted for me along the way.

Dedication

This dissertation is dedicated to my family: My late father George Pitelka, my mother Nelda Pitelka, my sister Lynn, my husband John, and Jake, Mark, and Kate.

Chapter 1 - Introduction

Everything is relative. Various social theories take into account the notion of comparisons, that people derive some sort of happiness or well-being from their judgments of how they "stack up" relative to others. Studies about topics of personal finance and wealth often examine objective measures, such as income, assets, and debt. However, comparisons also matter. Individual utility, happiness, or well-being may be derived not only from absolute measures, but also from the individual's perceived position in relation to others, perceived position in relation to one's past, or changes in perceived position in relation to one's comparative others.

Making judgments of one's comparative position transcends cultures, with examples of studies available from Europe (Alesina, Di Tella, & MacCulloch, 2004) to Asia (Oshio, Nozaki, & Kobayashi, 2011). People of all ages, from children to older adults, have been found to make comparisons to others (Anderson, Hildreth, & Howland, 2015; Eccles, 1999; Fiske, 2010). This pervasiveness of comparative judgments alludes to a universal tenet of human nature, and may make a difference in individual ill-being or well-being.

The Certified Financial Planner Board of Standards, Inc., an organization that promotes standards and certification requirement among financial planning professionals, defines financial planning as "the process of determining whether and how an individual can meet life goals through the proper management of financial resources" (n.d.). The Financial Planning Association, a professional membership organization for financial planners states that "The financial planning profession exists to help people reach their financial goals and dreams" (n.d.). Many tips, strategies, and continuing education programs are devoted to the "management of finances" piece, with time devoted to managing investments, minimizing taxes, and

accumulating wealth. Yet, many practitioners will contend that the true value of what they offer is not necessarily the asset or wealth management side of planning. Instead, many practitioners will contend that the true value a planner adds is in helping clients overcome anxieties, find peace of mind, and live the life they want, bringing them happiness and joy that fits with their values and goals (Kitces, 2015; Schulaka, 2016). These less numbers-centric parts of financial planning—helping a client minimize anxieties or depressive symptoms, and find happiness or well-being—are central to an effective life planning model and require an understanding of human nature that goes beyond the numbers. The average age of financial planning and wealth management clients has long been high and is on the rise. In 2019, global consulting firm Simon-Kucher & Partners estimated the average client age at 64 (Schiavo, 2019). Life expectancy is also increasing (Vespa, 2018), making it ever more important to study factors that are a part of quality of life and successful aging for older adults. With this practical application in mind, the perceptions that older adults form and the comparisons that older adults make are phenomena that need to be better highlighted and understood. Financial planners have stories of the retiring multimillionaire client who feels financially inferior to her peers. Other stories reflect a client of modest means, but who feels rich when comparing his current nest egg to his perceived family resources during his own upbringing. These comparisons individuals make may be based on current observations of themselves and others, or might have a longer-term element, comparing the past to the present, or comparing financial position changes over time.

The three essays in this dissertation will shed light on the potential importance of perceptions and comparisons on older adult well-being. For financial planners, financial counselors, financial therapists, and other financial professionals, this study can provide insight to better help practitioners understand the outcomes of their clients' feelings and judgments.

Practitioners have a unique vantage point in which they may be able to identify incongruencies between a client's perception and the client's objective financial position. Having evidence and understanding of the possible importance of comparisons on client happiness could help the practitioner start the conversation and better serve the client.

For older adults, this research could help them understand how their perceptions are linked to their happiness and other psychological factors. This study could inform parents looking at how their conversations about money could have long-term implications on their children, possibly well into adulthood. For educators, an understanding of how attitudes and perceptions are related to well-being in older adulthood could strengthen a curriculum. Educators who understand the human nature side of finances could better help students and consumers reach better decision-making and attain desired lifelong outcomes. Finally, for policy makers, understanding subjective well-being may not only benefit individuals, but also have wider benefits and have been linked to "beneficial societal outcomes" (Lyubomirsky, King, & Diener, 2005). As Diener (2006) reported, unhappy individuals tend to function poorly, and collectively can lead to undesirable societal outcomes.

Statement of the Problem

The American population is aging, buoyed in part by longer life expectancies (Vespa, 2018). Adults aged 65 and over are projected to outnumber youth under age 18 for the first time in U.S. history by the year 2034 (Vespa, 2018) In just 10 years, by 2030, older adults will make up over 20% of the American population, up from 15% as recently as 2018. Those aged 85 and older is expected to swell in the next decades. Older adults already make up a large portion of financial planning clients (Schiavo, 2019). These population changes will require a better

understanding of the factors affecting subjective well-being measures such as happiness, anxiety, and depressive symptomology for this part of the population.

Personal finance conversations and articles often center on quantitative, objective goals. Tallying up numbers of income, investments, other assets, debt, and providing strategies to minimize taxes are worthy endeavors, but fall short of addressing older adult client distress such as anxiety and depression, or well-being measures such as happiness. Certainly, objective measures, such as income and assets, have been connected to happiness, but only up to a certain point (Kahneman & Deaton, 2010). If happiness is not attributable to objective measures alone, then attention to the subjective aspects of money is warranted.

One such subjective aspect of money is financially comparing oneself to others. When individuals compare themselves to others financially, it is unlikely that they truly know others' full financial reality. Money is one of the taboo topics that most Americans avoid discussing with others (Atwood, 2012; Romo, 2011; Trachtman, 1999). Surveys and polls conducted by financial institutions and financial websites show that people are more uncomfortable discussing personal finances than they are discussing religion, politics, health, and death (Ally, 2015; NerdWallet, 2015; Wells Fargo, 2014). Some employers have a culture of pay secrecy, with stated or implied policies prohibiting or discouraging employees from disclosing their income, further inhibiting an individual's ability to gather accurate information of others' incomes (Colella, Paetzold, Zardkoohi, & Wesson, 2007; U.S. Department of Labor, Women's Bureau, 2016). With the lack of open, accurate, or transparent information throughout their lives, older adults are left making judgments of others' incomes based on the perception, rather than data. Similarly, when recalling family financial status during childhood and adolescence, judgments may be based on perceptions rather than on documented data. The idea that what one perceives, whether accurate

or not, bears weight has been noted by individuals from literary realist Gustave Flaubert— "There is no truth. There is only perception"—to political strategist Lee Atwater— "Perception is reality." Postmodernist theorists such as Lyotard and Derrida submit that knowledge is relative and reject the existence of objective truth (White & Klein, 2008). Sweetman (2005) summarized this postmodernist idea of relativism, explaining, "All knowledge is contextual and is influenced by culture, tradition, language, biases, background concepts, and so on, and is, therefore, in some very important sense, relative to these phenomena" (p. 140). If people's perceptions define their realities and if comparisons also matter, then perceived relative financial status becomes particularly noteworthy and provides the foundation for this study's overarching research question, how are older adults' perceptions of relative financial status associated with their subjective well-being?

Description of Studies

The relationship between one's perceived financial status and various components of psychological distress and subjective well-being will be examined in three separate papers. The first essay utilized inspiration from reference group theory (Merton, 1968) as it examined the relationship between perceived relative income and happiness in older Americans. Furthermore, the strength of the relationship between peer-based comparisons and happiness was to be compared to the strength of the relationship between nationwide-based comparisons and happiness. Life course perspective (Elder, 1975) informed the second essay, which investigated the enduring nature of the potential effects of childhood perceptions of family financial status. Anxiety in older adults was predicted to be related to lower perceived relative financial status during childhood. The third essay examined the connection between recent changes in perceived

relative income and depressive symptomology and drew on the conceptual framework of temporal comparison theory (Albert, 1977).

While theories shaped each study differently, some key concepts were used in more than one paper. These key concepts are described here to provide a foundation and clarity for the dissertation. Key terms include happiness, anxiety, depression, depressive symptoms, perceived relative income, and perceived relative financial status.

Happiness has been conceptualized in multiple ways, with some characterizations focusing on the cognitive, others on the affective, some on a mixture of the two, or others on multiple subcomponents of the term. Different perspectives, such as eudaimonic and hedonic happiness, have also been studied. For the current study, happiness is considered as an affective construct, which is more hedonic than eudaimonic in nature. By prompting responses with the specified time period of "during the past week," the construct takes on an evaluative element (Stone & Mackie, 2013; Robinson & Clore, 2002). This evaluative happiness is the focus of the current research and is conceptualized as the degree to which one experiences a positive state or affect over a stable time (Veenhoven, 1990).

Anxiety is defined in the Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition (DSM-5®) as an "apprehensive anticipation of future danger or misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension." (American Psychiatric Association, 2013, p. 818). Anxiety is a subjective feeling or emotional response to a perceived or real threat, and is characterized by apprehension, nervousness, worry, and fearfulness (Spielberger & Reheiser, 2009; van Rooij & Stenson, n.d.).

Depression is conceptualized as a psychological disorder that involves intense feelings of de-motivation, diminished interest or pleasure, sadness, guilt, and low self-worth (American

Psychiatric Association, 2012; World Health Organization, n.d.). Many studies measure depression by summing various symptoms that are associated with depression (Tandoc, Ferrucci, and Duffy, 2015). Depressive symptoms is conceptualized as the feelings that characterize depression, with the major components including negative affect, anhedonia, and somatic symptoms (Radloff, 1977; Ward, 2006). Symptoms also include feelings of worthlessness, feelings of helplessness and hopelessness, psychomotor slowing or agitation, loss of appetite, and sleep disturbance (Radloff, 1977).

Whereas relative income is "whether a person has more or less income than others" (Cheung & Lucas, 2016), perceived relative income is the focus of the current research, and is conceptualized as what individuals believe is their level of income compared to others. Studies have shown that perceptions of relative income do not necessarily reflect an individual's actual relative income. For example, many participants in the General Social Survey (GSS) who were in the lowest quartile when measuring objective income reported that they perceived themselves as having average or above average income (Guven & Sorensen, 2012).

Perceived relative financial status is conceptualized as a judgment an individual makes about their overall financial position compared to others. These judgments might be based on income, assets, debt, possessions, experiences, conversations, or other observations. Previous studies have measured perceived relative financial status based on the subjective feeling of how "poor" or "rich" one feels (Haisley, Mostafa, & Loewenstein, 2008; Ravallion, 2014). The second essay concentrates on this overall subjective feeling of how "well off" or not one feels compared to others. With these concepts in mind, the three essays in this dissertation are described next.

Essay One: Who Makes More? Investigating Perceived Relative Income and Happiness in Older Adults

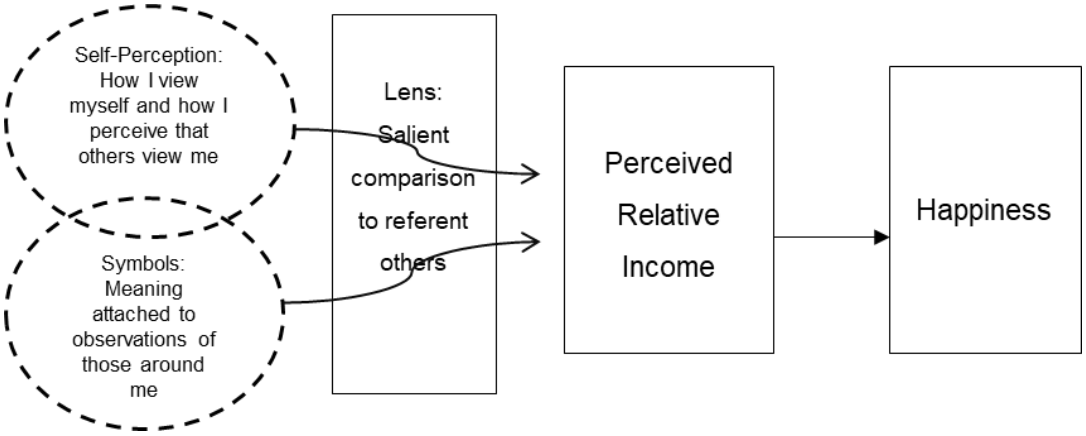
Research question. How are older adults' perceptions of relative income associated with happiness?

Theoretical background. Reference group theory, a middle-range subtheory of the symbolic interactionism framework, posits that people compare themselves to others, and that their relative, rather than absolute, position is what matters (Burr, Leigh, & Constantine, 1979). This exploratory study was inspired by reference group theory concepts such as the concept of comparative others, in which people make self-assessments based on comparisons to pertinent others. Merton's (1968) reference group theory provides a possible explanation of why perceived relative income might be connected to a construct such as happiness. The theory holds that individuals who believe that they are better in some aspect when compared to their peers will have benefits, which can include feelings of self-esteem and other measures of mental and physical health (Kelley, 1952; Pham-Kanter, 2009; Posel & Casale, 2011; Wolff et al., 2010). This first essay examines whether individuals who perceive themselves to have relatively higher income than their referent others also have higher level of happiness than those who believe that they have lower income than their referent others.

The inspiration from symbolic interaction perspective and reference group theory for this study are visually represented in Figure 1.1. The symbolic interactionism concepts of perceptions and symbolic meanings that lay the background for the study are represented in the ovals. Reference group theory, which holds that interpretations are made through the lens of comparisons to referent others, explains the formation of an individual's perceived relative

income. The rectangles represent the prediction that this perceived relative income is associated with happiness in older adults.

Figure 1.1 Conceptual Model of use of Symbolic Interactionism and Reference Group Theory



Hypotheses and methods. The importance of comparisons and of perceptions are central to the study's hypotheses. Essay One examined the relationship between these concepts and the dependent variable of happiness. The dependent variable for the first two hypotheses, happiness, was based on a scale with responses that ranged from 2 to 8. Though happiness was not truly a continuous variable, an OLS regression model was employed to test these two hypotheses due to the interpretability of the analyses' results. Per a significant relationship for the first two hypotheses, the third hypothesis is evaluated using the standardized coefficient (i.e., betas) to determine which is the stronger relationship. When the sample size is the same and the model is similar (i.e., different predictors on same dependent variable), the standardized coefficient can be compared by seemingly unrelated estimation (Zellner. 1962).

H1: Higher peer-based perceived relative income is associated with a higher level of happiness in older adults.

H2: Higher national-based perceived relative income is associated with a higher level of happiness in older adults.

H3: Peer-based perceived relative income is more strongly associated with happiness than national-based perceived relative income in older adults.

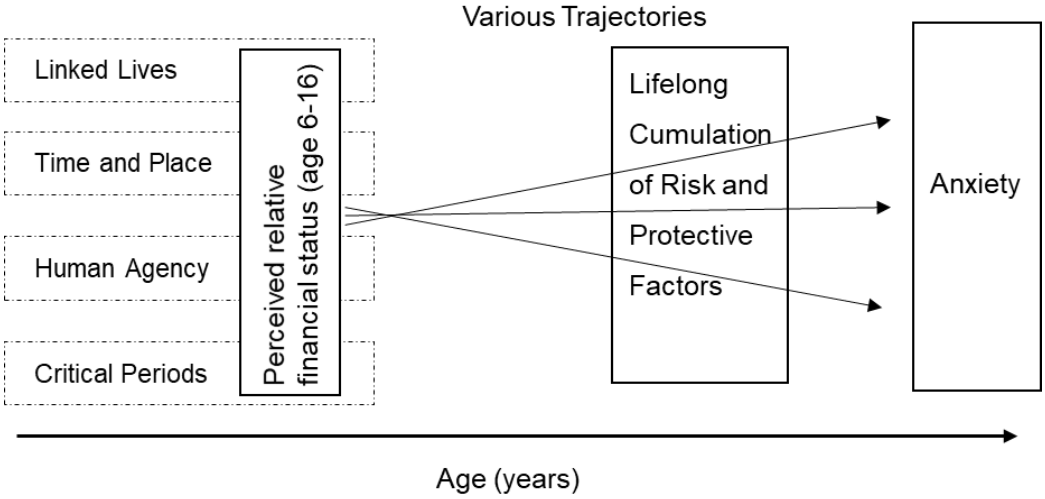
Essay Two: Are We Poor? The Enduring Nature of Childhood Perceptions of Relative Financial Status

Research question. How are individuals' recalled perceptions of their childhood relative financial status associated with anxiety in older adulthood?

Theoretical background. The second essay draws on the life course perspective, which holds that childhood experiences, particularly those that occur during critical periods, are tied to adult outcomes (Elder, Johnson, & Crosnoe, 2003). Specifically, the study sought to assess the potential enduring impact of individuals' recalled perceptions of childhood relative financial status on individuals' current level of anxiety in older adulthood.

Conceptual model. A conceptual model based on life course perspective is illustrated in Figure 1.2.

Figure 1.2 Conceptual Model based on Life Course Perspective



Hypotheses and methods. This study used an OLS regression model to examine perceived relative financial status in childhood and anxiety in older adulthood to examine the following hypothesis:

H1: Lower perceived relative financial status recalled during childhood is associated with higher anxiety in older adulthood.

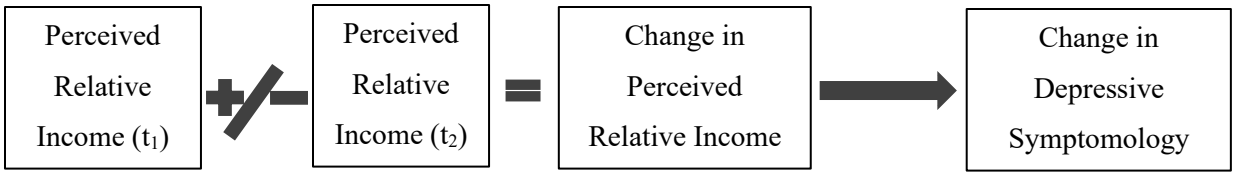
Essay Three: Chapter 4 - Are Changes in Perceived Relative Income Related to Changes in Depressive Symptomology?

Research question. How are changes in individuals' perceptions of their relative income associated with changes in depressive symptomology?

Theoretical background. Temporal comparison theory (Albert, 1977) provides the conceptual framework to examine the association between changes over time in perceived relative income and depressive symptomology. Temporal comparison theory submits that people compare themselves in relation to themselves at different points in time (Redersdorff & Guimond, 2006). Redersdorff and Guimond (2006) further defined the various types of comparisons into four categories: (a) Intrapersonal level: Temporal-self comparison, (b) Interpersonal level: Temporal self-other comparison, (c) Intragroup level: Temporal-group comparison, and (d) Intergroup level: Intergroup temporal comparison. The second category, Interpersonal: Temporal self-other comparison, in which individuals compare their position relative to others over a span of time, is the focus of Essay Three.

Conceptual model. A conceptual model based on temporal comparison theory is illustrated in Figure 1.3.

Figure 1.3 Conceptual Model based on Temporal Comparison Theory



Hypotheses and methods. This study utilized Wave 2 and Wave 3 NSHAP data (Waite et al., 2013; Waite et al., 2017) in order to measure the change over time in key variables. A multinomial logistic regression analysis was used to assess the relationship between change in perceived relative income and directional change in depressive symptomology in older adults. The multinomial logistic regression model provided a way to assess whether changes in the key independent variable, change in perceived relative income, is linked to upward, downward, or no trajectory change in the dependent variable, change in depressive symptomology in older adulthood. The analysis tested the following hypotheses:

H1: An upward change in reported perceived relative income is related to a corresponding decrease in depressive symptoms in older adults.

H2: A downward change in reported perceived relative income is related to a corresponding increase in depressive symptoms in older adults.

References

Albert, S. (1977). Temporal comparison theory. *Psychological Review*, *84*(6), 485–503. https://psycnet.apa.org/doi/10.1037/0033–295X.84.6.485

Alesina, A., Di Tella, R., & MacCulloch, R. (2004). Inequality and happiness: Are Europeans and Americans different? *Journal of Public Economics*, *88*(9–10), 2009–2042. https://doi.org/10.1016/j.jpubeco.2003.07.006

Ally. (2015). Holiday tip: Most Americans say social conversations about money are taboo, according to Ally Bank's Money Talks study *[Press release]. Retrieved from* https://media.ally.com/2015-11-24-Holiday-Tip-Most-Americans-Say-Social-Conversations-About-Money-are-Taboo-According-to-Ally-Banks-Money-Talks-Study

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin*, *141*(3), 574–601. https://doi.org/10.1037/a0038781

Atwood, J. D. (2012). Couples and money: The last taboo. *The American Journal of Family Therapy*, *40*(1), 1–19. https://doi.org/10.1080/01926187.2011.600674

Burr, W. R., Leigh, G., Day, R., & Constantine, J. (1979). Symbolic interaction and the family. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), *Contemporary theories about the family* (Vol. 2, pp. 42–111). New York, NY: Free Press.

Cheung, F., & Lucas, R. E. (2016). Income inequality is associated with stronger social comparison effects: The effect of relative income on life satisfaction. *Journal of Personality and Social Psychology*, *110*(2), 332–341. https://doi.org/10.1037/pspp0000059

CFP Board. (n.d.). Terminology. Retrieved March 26, 2019 from: https://www.cfp.net/for-cfp-professionals/professional-standards-enforcement/standards-of-professional-conduct/terminology

Colella, A., Paetzold, R. L., Zardkoohi, A., & Wesson, M. J. (2007). Exposing pay secrecy. *Academy of Management Review*, *32*(1), 55–71. https://doi.org/10.5465/amr.2007.23463701

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, *55*(1), 34–43. https://doi.org/10.1037/0003-066X.55.1.34

Diener, E. (2006). Guidelines for national indicators of subjective well-being and ill-being. *Journal of Happiness Studies*, *7*(4), 397–404. https://doi.org/10.1007/s10902-006-9000-y

Eccles, J. S. (1999). The development of children ages 6 to 14. *The Future of Children, 9*(2), 30–44. https://doi.org/10.2307/1602703

Fiske, S. T. (2010). Envy up, scorn down: How comparison divides us. *American Psychologist*, *65*(8), 698–706. https://doi.org/10.1037/0003-066X.65.8.698

Financial Planning Association. (n.d.). What is a financial planner? And what do financial planners do? Retrieved from https://www.onefpa.org/about/Pages/About-the-Profession.aspx

Guven, C., & Sørensen, B. E. (2012). Subjective well-being: Keeping up with the perception of the Joneses. *Social Indicators Research*, *109*(3), 439–469. https://doi.org/10.1007/s11205-011-9910-x

Haisley, E., Mostafa, R., & Loewenstein, G. (2008). Subjective relative income and lottery ticket purchases. *Journal of Behavioral Decision Making*, *21*(3), 283–295. https://doi.org/10.1002/bdm.588

Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences*, *107*(38), 16489–16493. https://doi.org/10.1073/pnas.1011492107

Kitces, M. (2015). 6 key value propositions a good financial planner can provide for clients seeking a better "return on life." Retrieved from https://www.kitces.com/blog/6-key-value-propositions-a-good-financial-planner-can-provide-for-clients-seeking-a-better-return-on-life/

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*(6), 803–855. https://doi.org/10.1037/0033-2909.131.6.803

Merton, R. K. (1968). *Social theory and social structure*. New York, NY: Simon and Schuster.

NerdWallet. (2015, April 8). NerdWallet survey: Money talk more taboo than politics and religion [Blog post]. Retrieved from https://www.nerdwallet.com/blog/finance/money-taboo-and-credit-card-debt-survey/

Okun, M. A., Olding, R. W., & Cohn, C. M. (1990). A meta-analysis of subjective well-being interventions among elders. *Psychological Bulletin*, *108*(2), 257–266. https://doi.org/10.1037/0033-2909.108.2.257

Okun, M. A., & Stock, W. A. (1987). Correlates and components of subjective well-being among the elderly. *Journal of Applied Gerontology*, *6*(1), 95–112. https://doi.org/10.1177/073346488700600108

Oshio, T., Nozaki, K., & Kobayashi, M. (2011). Relative income and happiness in Asia: Evidence from nationwide surveys in China, Japan, and Korea. *Social Indicators Research*, *104*(3), 351–367. https://doi.org/10.1007/s11205-010-9754-9

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Ravallion, M. (2014). Poor, or just feeling poor? On using subjective data in measuring poverty. In A. Clark & C. Senik (Eds.), *Happiness and Economic Growth* (pp. 140–178). Oxford, England: Oxford University Press.

Redersdorff, S., & Guimond, S. (2006). Comparing oneself over time: The temporal dimension in social comparison. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations and culture* (pp. 76–96). New York, NY: Cambridge University Press.

Romo, L. K. (2011). Money talks: Revealing and concealing financial information in families. *Journal of Family Communication*, *11*(4), 264–281. https://doi.org/10.1080/15267431.2010.544634

Schulaka, C. (2016). Mitch Anthony on why ROI is a dead end and how to explain your value proposition. *Journal of Financial Planning*, *29*(11), 17–21.

Schiavo, A. (2019, January 7). Advisors should change fee structures to attract next-gen clients. Retrieved from https://www.financial-planning.com/news/financial-advisors-should-change-their-price-module-to-attract-new-clients

Spielberger, C. D., & Reheiser, E. C. (2009). Assessment of emotions: Anxiety, anger, depression, and curiosity. *Applied Psychology: Health and Well-Being*, *1*(3), 271–302. https://doi.org/10.1111/j.1758-0854.2009.01017.x

Sweetman, B. (2005). Lyotard, postmodernism, and religion. *Philosophia Christi*, *7*(1), 141–153. https://doi.org/10.5840/pc20057114

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is facebooking depressing?. *Computers in Human Behavior*, *43*, 139–146. https://doi.org/10.1016/j.chb.2014.10.053

Trachtman, R. (1999). The money taboo: Its effects in everyday life and in the practice of psychotherapy. *Clinical Social Work Journal*, *27*(3), 275–288. https://doi.org/10.1023/A:1022842303387

U.S. Department of Labor, Women's Bureau (2016). *Pay Secrecy*. Retrieved from https://www.dol.gov/wb/media/WB_508-PaySecrecy.pdf

van Rooij, S., & Stenson, A. (n.d.). Anxiety disorders: An Overview. In T. Jovanovic (Ed.), *What is anxiety?* Retrieved from https://www.anxiety.org/what-is-anxiety

Vespa, J. (2018, 2019). The U.S. joins other countries with large aging populations. Retrieved from https://www.census.gov/library/stories/2018/03/graying-america.html

Vespa, J. (2018, 2019). The U.S. joins other countries with large aging populations. Retrieved from https://www.census.gov/library/stories/2018/03/graying-america.html

Ward, L. C. (2006). Comparison of factor structure models for the Beck Depression Inventory-II. *Psychological Assessment*, *18*(1), 81–88. https://doi.org/10.1037/1040-3590.18.1.81

Wells Fargo. (2014). Conversations about personal finance more difficult than religion and politics, according to new Wells Fargo survey [Press release]. Retrieved from *https*://www.*wellsfargo*.com/about/press/2014/ 20140220_financial-health/

White, J., & Klein, D. (2008). The symbolic interaction framework. In *Family theories* (3rd ed., pp. 93–120). Thousand Oaks, CA: Sage.

World Health Organization. (n.d.). Depression. Retrieved from http://www.who.int/mental_health/management/depression/en/

Zellner, A. (1962). An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *Journal of the American Statistical Association*, *57*(298), 348–368. https://doi.org/10.1080/01621459.1962.10480664

Chapter 2 - Who Makes More? Investigating Perceived Relative Income and Happiness in Older Adults

Introduction to the Problem

This study examined how older adults' perception of their relative income is associated with their happiness. Life expectancies in the U.S. have continued to increase, leading to an overall older American population (Vespa, 2018). Older adults made up 15% of the population in 2018, but are projected to increase to 20% of the population by the year 2030. So far, the under-18 age group in the U.S. has outnumbered the number of adults aged 65 and older, but those positions are predicted to trade places within the next 15 years, when for the first time, older adults will outnumber under-18 year-olds in America (Vespa, 2018). The numbers of those aged 85 and older are also expected to swell in the next decades. Older adults already make up a large portion of financial planning clients (Schiavo, 2019). One way that financial professionals add value to clients by helping their clients improve well-being such as by finding happiness by living in a way that fits with their values and goals (Kitces, 2015; Schulaka, 2016). Yet, objective finances alone do not necessarily equate to levels of happiness. Exploring new angles that may contribute to this construct in this growing population segment is an important step toward maintaining or improving one's quality of life.

Inspiration for this study was found in symbolic interaction perspective, which holds that individuals' reality is based on perceptions rather than on objective information (White & Klein, 2008), and in a subtheory, reference group theory. Reference group theory holds that people compare themselves to others, and that their relative, rather than absolute, position is what matters (Merton, 1968). There is evidence that individuals' perception of their position in relation to their peers is relevant in various ways. Those who perceive themselves to be in a

better position than their peers have higher subjective well-being (Posel & Casale, 2011), satisfaction at work (Clark & Oswald, 1996), and health (Pham-Kanter, 2009).

The present study addressed the research question, how is perceived relative income linked to happiness in older adults? Inspired by the theoretical framework described below, it was hypothesized that higher perceived relative income would be related to higher levels of happiness in older adults. Differences in outcomes based on different comparative groups—peer and national—were examined. Both peer comparisons and national comparisons were expected to have a connection to happiness, with the peer comparison expected to be of particular influence. The present study aimed to add to the current literature in three main ways: (a) it examined a less-studied, yet growing population, older adults, and the relationship between perceived relative income and happiness; (b) it explored the not-yet definitively answered question of whether people compare themselves to those around them or to a broader group; and (c) inspired by symbolic interactionism and a subtheory, reference group theory, it aimed to provide further support for the importance of perceptions and comparisons for older adults. Practitioners and therapists will be able to draw upon this study to better help their older adult clients. Understanding the significance of perceived relative income rather than focusing on objective income could be valuable to professionals as they strive to help older clients improve their subjective well-being.

Theoretical Framework

Symbolic Interactionism and Reference Group Theory

Symbolic interaction perspective is a broad framework, which has provided the basis of many variations and subtheories, like reference group theory (Burr, Leigh, Day, & Constantine, 1979). Early influencers of symbolic interaction framework include Cooley, Mead, and Blumer (White & Klein, 2008). As the name implies, symbolic interactionism puts forth that as

individuals interact, they interpret each other's actions, and thus respond not to others' actions, but rather to the meaning they ascribe to those actions (Blumer, 1994). According to the framework, objects have symbolic meaning, and symbols play a part in how individuals perceive themselves. Key concepts in symbolic interactionism include the idea of self-perception, the importance of perceived reality, and the symbolic meaning of objects (Blumer, 1994; White & Klein, 2008).

The current study was inspired by the symbolic interaction framework's principle that perceptions shape people, more so than do objective measures. Self-perception is an essential part of symbolic interactionism and of the present study. Self-perception was originally described by Cooley (1902) as the "looking glass self," meaning that people's perceptions of themselves are influenced by how they believe others perceive them. People's self-perception includes both their own thoughts about themselves as well as their vision of other people's thoughts about them.

Symbolic interactionism is a broad framework that has allowed the development of various schools of thought and 15 subtheories (Kuhn, 1964a), with reference group theory being one of the subtheories. Reference group theory holds that people compare themselves to others, and that their relative, rather than absolute, position is what matters (Burr, Leigh, & Constantine, 1979). Hyman (1942) has been credited with coining the term "reference group." In Hyman's research, individuals evaluated their status not only on objective measures, such as level of education and income, but also on the group to which they relate or to which they aspire. Studies utilizing reference group theory have used one of the two different functions: normative and comparative. Normative reference groups is the group that is the source of one's norms, attitudes, and values. Comparative reference groups refers to individuals comparing themselves

to referent others in their process of self-appraisal (Kelley, 1952; Kuhn, 1964b). This study applied the ideas of comparative reference group, specifically referent others, in which people make self-assessments based on comparisons to pertinent others.

Reference group theory provides a possible explanation of why constructs such as perceived relative income might be associated with happiness. Individuals compare themselves to their referent others, and these evaluations have an effect on people (Wolff, Subramanian, Acevedo-Garcia, Weber, & Kawachi, 2010). The theory holds that individuals who believe that they are better in some aspect when compared to their peers will have benefits, including feelings of self-esteem and other measures of mental and physical health (Kelley, 1952; Pham-Kanter, 2009; Posel & Casale, 2011; Wolff et al., 2010).

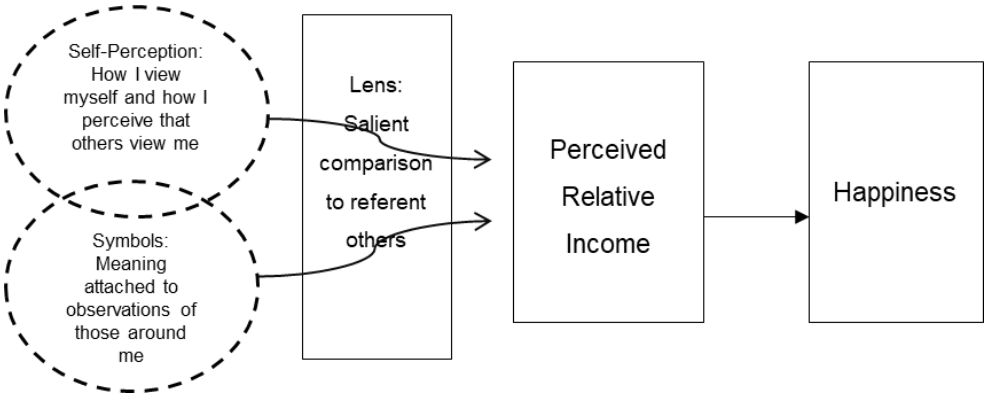
To further the inquiry into beneficial aspects that could come from positive comparative self-assessments, the current study focused on the human goal of happiness. This theoretical inspiration and previous literature guide the current study as it explored whether individuals who perceive themselves to have a relatively higher income also have higher level of happiness than those who believe that they have lower income than others.

The concept of comparative reference groups addresses the apparent contradictions that can occur when looking at objective resources and subjective outcomes. For example, if looking at objective measures alone, then those with higher measurable resources (e.g. wealth, job advancement, etc.) would have higher satisfaction than those with lower measurable results. Yet, seminal research by Stouffer (1949) on the attitudes of combat soldiers in war found that soldiers felt deprived based on perceived relative deprivation rather than based on absolute measures. In one example, air corpsmen were quickly promoted, yet reported less satisfied than did the military police who experienced a slower promotion rate. On the surface, this seemed

paradoxical, but Stouffer put forth that it was simply a matter of social frames of reference. In this case, satisfied military police were making comparisons to their immediate circle, likely having little to no interaction or knowledge of the faster promotion rates of other groups, and vice versa. Additionally, Merton and Kitt's (1950) seminal work on reference groups found feelings of deprivation among respondents were based on individual's comparisons to others' standards of living, rather than on their own objective level of hardship. Since then, research findings have confirmed the importance of relative income and measures of subjective well-being (Caporale, Georgellis, Tsitsianis, & Yin, 2009; Luttmer, 2005; Oshio, Nozaki, & Kobayashi, 2011). These classic examples and continued research provide the basis for the importance of investigating subjective comparisons as well as the importance of deciphering who people use as referent others (i.e., peers or other Americans).

The ideas of symbolic interaction perspective and reference group theory for this study are visually represented in Figure 2.1. The symbolic interactionism concepts of self-perceptions and symbolic meanings that inspire the background for the study are represented in the ovals. Reference group theory, which holds that interpretations are made through the lens of comparisons to referent others, explains the formation of an individual's perceived relative income. The rectangles represent the prediction that this perceived relative income is associated with happiness.

Figure 2.1 Conceptual Model of use of Symbolic Interactionism and Reference Group Theory



Hypotheses

The core theoretical concepts of the importance of comparisons and of perceptions are central to the study's hypotheses. The current exploratory study examined the relationship between these concepts and the dependent variable of happiness. Inspired by reference group theory, the following hypotheses were formed:

H1: Higher peer-based perceived relative income is associated with a higher level of happiness in older adults.

H2: Higher national-based perceived relative income is associated with a higher level of happiness in older adults.

H3: Peer-based perceived relative income is more strongly associated with happiness than national-based perceived relative income in older adults.

Literature Review

Perceived Relative Income

Relative income reflects a person's income in relation to other people's income. Reference group theory suggests that relative measures, such as relative income, matter more to people's feelings than do objective measures (Easterlin, 1995). Previous studies have examined

whether objective financial resources or relative financial resources are more closely tied to various outcomes. For example, researchers used age, education level, and home country to establish groups, and found that an individual's relative income in comparison to the created groups was associated with outcomes such as happiness and well-being in 19 European countries (Caporale, Georgellis, Tsitsianis, & Yin, 2009). Studies have found this link between relative income and perceived happiness to be true in other countries as well, such as China, Japan, and Korea (Oshio, Nozaki, & Kobayashi, 2011). Luttmer (2005) examined the increases in neighbor's incomes and happiness. The study found evidence that individual happiness was reduced as neighbors' earning increased. These studies linking objective income to happiness and relative income to happiness provided a basis for the current study's look into perceived relative income and the potential benefit of happiness. While these previous studies investigated an important concept of comparative or relative income, they are based on the researchers' delineations of reference groups. That is, the researchers, rather than the subjects themselves, determined who to include as referent others based on selected factors such as zip code, occupation, and income. As such, they may not necessarily capture an individual's salient referent others nor do they include the perception piece of the puzzle. Thus, the current study hoped to add to the literature by measuring perceived relative income and happiness, and also by exploring who individuals look to as referent others..

Symbolic interaction theory holds that individuals' reality is based on perceptions rather than on objective information (White & Klein, 2008). Perceptions not only form a person's reality, but they also have real effects on a person's behaviors and feelings. This concept was presented by Thomas and Thomas (1928) almost a century ago: "if men define situations as real, they are real in their consequences" (p. 572).

An assumption of this study is that people attach symbolic meaning to objects. While people may not explicitly know their peers' incomes in order to develop an accurate assessment of their own relative income, they may instead draw conclusions based on observations of those around them. Neighbors' homes and cars, for example, are more than simply shelter and transportation. Such possessions are also symbols that communicate status (Davidson, 2009). Observations of peer spending may or may not be an accurate reflection of the peer's true income, but people perceive their relative income based on the symbolic meaning of observed ownership or purchases of goods and services of those around them (Bookwalter & Dalenberg, 2010).

Perceptions are not necessarily accurate. Individuals have been shown to be inaccurate at self-assessing everything from reading skill (Kwon & Linderholm, 2015) to body image (Viner et al., 2006). Similarly, people do not accurately assess their relative position when it comes to personal finances (Cruces, Perez-Truglia, & Tetaz, 2013; Lora & Fajardo, 2013; Posel & Casale, 2011; Sussman & Shafir, 2012). In a study by Cruces et al. (2013), for example, participants were asked to estimate which decile would depict their income. Only 15% of respondents answered their correct decile, and over 55% of the responses were categorized as biased, meaning they were more than two deciles off. The biases were in both positive and negative directions, with more respondents overall showing a negative bias, meaning that they placed themselves in a decile below their objective rank. The researchers further showed that these inaccurate income rank perceptions affected participants' opinions of government redistribution programs.

This evidence that the perception of one's income compared to others holds weight was further examined by Karraker (2012) whose study found a link between subjective social status,

which was measured using perceived relative income, and mental health measures such as stress, depression, and loneliness in older adults. These findings are consistent with other studies, linking feelings of relative deprivation to negative health impacts and stress (Wilkinson, 1997).

Happiness

A seemingly simple term, happiness, is in fact a complex subject with more than one facet and definition. The conceptualization of happiness for the present study is the degree to which one experiences a positive state or affect over a stable time (Veenhoven, 1990). This definition has some basis in the hedonic rather than eudaimonic approach, as summarized below.

The recognition of happiness as a significant human goal is far from new. Aristotle is credited with developing his theory of happiness in the Nicomachean Ethics over 2,300 years ago (Ross, n.d.), in which he asserted that individuals are responsible for their happiness, and that happiness is not a means but an end. Aristotle's writings reflect happiness as a long-term, end-of-life condition rather than a fleeting mood or temporary pleasant state. Imbedded in this long-term perspective of happiness is a lifetime of experiences and decisions, including circumstances from health and wealth to knowledge and relationships. Thus, instant gratification is not the path to this long-term, eudaimonic happiness, which is also described as human flourishing. Instead, this virtue-based view of happiness holds that sometimes difficult decisions, such as choosing to work instead of enjoying an immediate indulgence, could provide the path to eudaimonic happiness. Aristotle held that happiness is the ultimate end, and that other goals, such as wealth, honor, and reputation, are sought because they can lead to the end goal of happiness (Ross, n.d.).

Other scholars have contributed to and expanded on eudaimonia. Maslow (1999) maintained that individuals are always developing or becoming, with a goal of self-actualization.

Rogers (1961) put forth the idea that mental health can be achieved via the ideal of becoming a "fully functioning person" (pp. 187–189). Others have viewed happiness as feeling a sense of purpose or meaning (Ryff, 1989), or reaching one's potential (Ryff & Keyes, 1995). These characterizations of happiness include feelings of meaning, purpose, a sense of control, belongingness, competence, and personal growth, and has also been called psychological well-being (Ryff, 1989).

Other scholars have focused on a different meaning of happiness, called the hedonic approach. In contrast, the hedonic concept of happiness is characterized by the present pursuit of pleasure (positive affect) and avoiding pain (negative affect). Aristippus, Mencius, Confucius, and countless others have pursued the hedonic perspective of happiness, in which individuals seek to experience pleasure or be in a positive mental state (Ryan & Deci, 2001). Research addressing this hedonic meaning of happiness has measured happiness as an increase in pleasure or a decrease or absence of pain (Kahneman, 1999; Ryan and Deci 2001), looking at a positive mood or a positive affective or mental state. The nature of seeking pleasure and avoiding displeasures lends itself to fluctuating happiness, in which one's level of happiness can change many times during the week or even the day, depending on the circumstances or the task at hand (Csikszentmihalyi & Hunter, 2003; Dambrun, Desprès, & Lac, 2012).

While the purely hedonistic pursuit of pleasure may bring a momentary feeling of happiness, researchers have noted that a fleeting moment of feeling good does not necessarily indicate that a person has a stable or overall happiness (Kahneman, 1999; Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). A third idea of happiness, evaluative happiness, moves beyond the ephemeral quality of purely hedonic happiness, and considers a time period longer than just the immediate here and now (Stone & Mackie, 2013). In a set of studies by Robinson and Clore

(2002), self-evaluations of emotions depended on the timeline terminology used in survey prompts. As the reference period increased, such as from "last few hours" to "last few weeks" to "in general," the respondents used different thought processes to answer the question about their level of happiness. Questions with a narrow time frame prompted answers that were based on memory of recent specific moments (episodic), while questions with time frames wider than "last few weeks" were answered using semantic memory or an overall emotional generalizations or beliefs. The National Research Council (2013, p. 29) on measures of well-being explained, "As the reference and recall periods lengthen, a measure takes on more and more characteristics of an evaluative well-being assessment. Specification of the reference period has a strong impact on the results of affect questions and, indeed, on what is being measured." Survey questions with wording that suggests a longer reporting period, such as "over the past week" or "these days," prompt the respondent to approach a more overall perception of their emotion (Stone & Mackie, 2013; Robinson & Clore, 2002). This statement describes evaluative happiness, which is conceptualized as the degree to which one experiences a positive state or affect over a stable time (Veenhoven, 1990). This is the happiness in older adults that the current study sought to understand.

Referent Others

While the importance of comparisons has been established (Burr, Leigh, & Constantine, 1979; Kelley, 1952; Pham-Kanter, 2009; Posel & Casale, 2011; Wolff et al., 2010), the question of who an individual considers when making comparisons – "referent others" – has not been definitively answered. People might have multiple reference individuals or groups. Some literature has indicated that people limit their comparisons to relevant or somewhat similar individuals or groups (Georgellis, Garcia, Gregoriou, & Ozbilgin, 2017). That is, in order for a

person to self-appraise in comparison to a group or individual, that group or individual must be one that the person deems similar enough to be relevant to them (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Motivated by this lack of clarity on who individuals use as referent others, and with no literature found on referent others specifically for the older adult population, the current study aimed to explore the connection between two different sets of referent others and happiness in older adults: (a) perceived relative income using people the respondent knows personally (i.e., family, friends, neighbors, and work associates) and (b) perceived relative income using American families in general.

Demographic and Control Variables

Happiness has previously been associated with various demographic and other characteristics. The previous literature making these connections prompted their inclusion in the present study. Demographic factors, such as education level, age, and income, have been shown to be positively related to subjective well-being (Diener & Biswas-Diener, 2002; Dittmann & Goebel, 2010; Ifcher & Zarghamee, 2016). Partnered status (Myers, 2000), gender, and ethnicity have been shown to relate to happiness, with older males and whites reporting higher levels of happiness (Yang, 2008). Self-assessed health has been found to be strongly correlated with happiness (Diener, Suh, Lucas, & Smith, 1999; Oshio, Nozaki, & Kobayashi, 2011). Depression has often been studied as inversely correlated with happiness, though Diener and Emmons (1984) found that the negative correlation between positive and negative affect lessened as the time span increased, and those who are lonely report lower levels of happiness (Golden et al., 2009). Much of the literature outlining the connections of these various constructs to happiness included a wider range of ages, and this study draws on those established connections to test their relevance for the age group of interest for this study, older adults. In this study, the

demographic variables of gender, race, age, education, income, net worth, and marital status, are utilized as control variables to test the links between perceived relative income and happiness.

Summary

Symbolic interactionism provides the underlying view that perceptions matter more than objective measures. One of its subtheories, reference group theory, provides the core concept that comparisons, or specific to this study, comparisons of perceived income also matters. Together, they inspired the study's purpose of exploring whether perceived relative income is linked to happiness in older adults, a group that is of particular importance to financial planning professionals and which is projected to outnumber our nation's youth in the near future.

Methods

Data

To examine the cross-sectional relationship between perceived relative income and happiness in older adults, secondary data from Wave 2 of the National Social Life, Health, and Aging Project (NSHAP) was used (Waite et al., 2013). The NSHAP is a nationally representative sample of adults aged 57 to 85 (birth years of 1920 to 1947), which used a multistage area national probability sample design with an oversampling of Hispanics and African Americans. The NHSAP data set was selected due to its focus on the older adult age group and due to the two questions that directly ask participants to assess their perceived relative income. For the first wave, 4,400 households were identified through collaboration with the 2004 Health and Retirement Study (HRS). Wave 1, collected in 2005 and 2006, included one person per household and was collected through 3,005 face-to-face interviews in participants' homes. Wave 2 in 2010 and 2011 added non-interviewed participants, as well as spouses or cohabiting romantic partners. The Wave 2 sample includes 3,377 in-person interviews of non-

institutionalized, community dwelling individuals, with the target ages of 62 to 90. The data collection included a collection of biomeasures, and a leave-behind questionnaire. A supplemental proxy questionnaire was used in Wave 2 for respondents from the previous wave who had become unable to participate due to poor health or death. Though a third wave of data has also been released, data from the second wave was utilized as it is the latest wave to include the two questions about perceived relative income compared to peers and compared to other Americans, which was an important piece of the current study.

Dependent Variable

Happiness. The present paper focuses on one component of subjective well-being: happiness. Happiness was gauged by measuring happiness over a stable timeframe, such as the past week. When measuring happiness, Diener, Sandvik, and Pavot (2009) contended that the frequency rather than the intensity of positive affect is what best reflects happiness. Two questions in the NSHAP data set asked respondents to assess the frequency of feelings of positive affect which are in alignment with the current study's interest in happiness. Respondents were provided the prompts, "During the past week… I was happy", and "During the past week… I enjoyed life." Each question had four response categories (1 = *rarely or none of the time*; 2 = *some of the time*; 3 = *occasionally*; 4 = *most of the time*). These two questions were combined to form the scale to measure happiness with a possible range of two to eight, with eight reflecting higher happiness. An analysis of this two-item scale showed statistically significant correlation (.49).

Independent Variables

Perceived relative income. The key independent variable was perceived relative income, which was measured on a peer-comparison basis and on a national-comparison basis.

Each was measured using a single question in the NSHAP with five possible response categories. For the peer-based comparison, the survey asked, "Compared with most of the people you know personally, like your friends, family, neighbors, and work associates, would you say that your household income is far below average, below average, average, above average, or far above average?" Responses were measured on a 5-point scale (1 = *far below average*; 2 = *below average*; 3 = *average*; 4 = *above average*; 5 = *far above average*). For the national-based comparison, the question asked, "Compared with American families in general, would you say that your household income is far below average, below average, average, above average, or far above average?" Responses were measured on a 5-point scale (1 = *far below average*; 2 = *below average*; 3 = *average*; 4 = *above average*; 5 = *far above average*).

Demographic and control variables. For the present study, demographic variables, including education, age, gender, ethnicity, partnered status, net worth, and household income were measured. Education attainment was divided into four levels: 1 = *less than high school*, 2 = *high school diploma or equivalent*, 3 = *vocational certification or some college*, and 4 = *bachelor's degree or more*, with less than high school as the reference group. Age-eligible participants (those born between 1920 and 1947) were divided into groups of approximately 10 years, (1 = *62-69*, 2 = *70 to 79*, and 3 = *80 to 90*), with 62-69 as the reference category. Gender was 1 = *male* and 2 = *female*, with male as the reference category. Race-ethnicity was divided into two groups: 1 = *non-Hispanic White* (reference), 2 = *Black*, *Hispanic*, and *Other*. For partnered status, those who were married or living with a partner were considered to be partnered (= 1), and for the reference group, those who were separated, divorced, widowed, or never married were considered non-partnered (= 0).

Net worth is the sum of assets minus liabilities. For the current study, net worth included assets such as vehicles, houses, rental properties and businesses as well as funds in savings accounts, stocks, bonds, mutual funds, and pensions, minus all debt. Net worth was divided into five categories: 1 = *less than $10,000* (reference), 2 = *$10,000 to $49,999*, 3 = *$50,000 to $99,999*, 4 = *$100,000 to $499,999*, and 5 = *over $500,000*. For household income, the NSHAP used an open-ended question, followed by bracketed questions to reduce nonresponse. The NSHAP stated that the household is defined as "people living under one roof," and included dependents such as children, elderly parents, and adult children who have returned and depend on the household. Platonic roommates were not considered to be part of the household. The survey indicated that when reporting income, participants should consider earnings, government benefits such as Social Security, Supplemental Security Income, and Veterans benefits, as well as pension plan payments. Interest and dividends, payments from IRAs, and monetary gifts were not included as income in the survey (Waite et al., 2013). Income was divided into four categories: 1 = *less than $25,000* (reference), 2 = *$25,000 to $49,999*, 3 = *$50,000 to $99,999*, and 4 = *over $100,000*.

Self-rated physical health was measured using a 5-point Likert-type scale. Respondents were asked, "Would you say your health is excellent, very good, good, fair, or poor?" Responses ranged from 1 (*poor*) to 5 (*excellent*). Depressive symptomology was measured using the nine negative items from the Iowa short form of the CES-D. Each item has four potential values that included 1 (*rarely or none of the time*), 2 (*some of the time*), 3 (*occasionally*), and 4 (*most of the time*). The scores for the nine items were aggregated to create a depression symptomology score of 9 (low) to 36 (high). Loneliness was assessed using a 3-item loneliness scale, which was modeled after the Revised UCLA Loneliness Scale (R-UCLA) (Russell, Peplau, & Cutrona,

1980; Shiovitz-Ezra et al., 2009). Respondents were asked to rate their frequency on the following questions: (a) How often do you feel that you lack companionship? (b) How often do you feel left out? And (c) How often do you feel isolated from others? Responses included never = 0, hardly ever = 1, some of the time =2, and often = 3. Summed scores ranged from 0 to 9, with a higher score indicating a more frequent feelings of loneliness. The Cronbach's alpha was .81.

Depressive symptomology was measured using nine questions from the Center for Epidemiologic Studies Depression (CES-D) Scale, which is a widely used and accepted self-report measure of depressive symptomology that has been validated for use in older adults (Irwin, Artin, & Oxman, 1999; Vaughan et al., 2018). The full 20-item CES-D scale, with scores ranging from 0 to 60, measures various components of depressive symptomology which can include depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance (Radloff, 1977). The scale was not designed as a diagnostic tool, but rather to measure the affective (depressed mood) in respondents (Radloff, 1977).

Researchers have pointed out that depression does not equate to sadness nor does it represent the opposite of happiness or positive affect (Bergsma & Veenhoven, 2011; Schroevers, Sanderman, Van Sonderen, & Ranchor, 2000). Rather, depression can be characterized as anhedonia, or a loss of interest or pleasure in previously enjoyed endeavors, as evidenced by the use of these concepts as diagnostic symptoms of depression (American Psychiatric Association, 2013). Instead of happiness, the inverse of depression has been identified as mania (Goodwin & Jamison, 2007), vitality (Barbic, Bartlett, & Mayo, 2013), social interest (Saunders & Roy, 1999), and enthusiasm (Warr, 1990). Others have identified a depression continuum that ranges from major depression to an absence of depressive symptoms (Geiselmann & Bauer, 2000).

Several recognized abbreviated versions of the CES-D eliminate the positive questions (Bohannon, Maljanian, & Goethe, 2003; Lawton, Moss, Winter, & Hoffman, 2002; Levine, 2013; Melchoir, Huba, Brown, & Reback, 1993).

The current study applied these findings that point to including only negative items to measure depressive symptoms to the 11-item Iowa short form of the CES-D that was used in the NSHAP. Thus, the nine negative questions of the Iowa short form of the CES-D are utilized to provide a scale of depressive symptomology. This same 9-item abbreviated scale was used by Carr (2004) in a study of older adults' adjustment to widowhood. Participants were asked how often in the past week they felt in line with nine different statements: (a) did not feel like eating, (b) felt depressed, (c) felt everything was an effort, (d) sleep was restless, (e) felt lonely, (f) people were unfriendly, (g) felt sad, (h) felt people disliked me, and (i) could not get going. Responses were measured on a 4-point Likert scale (1 = *rarely or none of the time*; 2 = *some of the time*; 3 = *occasionally*; 4 = *most of the time*). The 4-point scale responses are summed, providing a possible range of 9 to 36, with a higher score indicating a higher level of depressive symptomology. Analysis of the 9-item scale showed internal consistency (Cronbach's alpha) of .76.

Data Analysis

The sample includes those respondents who completed both the computer-assisted personal interview (CAPI) and leave-behind questionnaire (LBQ), with a sample size of 2,101. In alignment with established recommendations for NSHAP data use, estimates are weighted using the data set's Wave 2 weights (O'Muircheartaigh, Eckman, & Smith, 2009). The weights adjust for nonresponse and addresses the design in which respondents did not have equal probabilities of selection. Published studies using NSHAP data have used the respondent-level

weights to address missingness and have eliminated respondents from the sample due to incomplete information (Cornwell & Waite, 2012; Warner & Adams, 2015). Other studies using NSHAP data have employed both listwise deletion and multiple imputation, and found no substantive difference in the results. In a study about elder mistreatment, and physical and psychological well-being, Wong and Waite (2017) conducted their analysis of NSHAP data using both listwise deletion and multiple imputation and found the results from each method to be comparable. Similarly, in an investigation of partner support and depressive symptoms, Choi and Ha (2011) employed both listwise deletion and multiple imputation and found no substantial difference between the two regression models. Their results using the original data (complete case analysis) were reported in the study.

It was anticipated that the higher the perceived relative income, the higher the level of happiness. The first two hypotheses were tested using Ordinary Least Squares (OLS) regression. Though the dependent variable, happiness, is not truly a continuous variable, OLS regression analysis was used. The major assumption of OLS is that there is a linear association between the key independent variables and the dependent variable. A correlation analysis supported the expectation of a linear association between perceived relative income and the ordinal 7-point happiness scale. Per a significant relationship for the first two hypotheses, the third hypothesis is evaluated using the standardized coefficient (i.e., betas) to determine which is the stronger relationship. When the sample size is the same and the model is similar (i.e., different predictors on same dependent variable), the standardized coefficient can be compared by seemingly unrelated estimation (Zellner, 1962). For this study specifically, the sample size was 2,101 for both initial regressions, and the models differed only in the use of different predictor variables (peer-based versus national-based comparisons of perceived relative income) for the same

dependent variable, happiness. Whereas an unstandardized coefficient measures the difference in the dependent variable for a one-unit increase in the independent variable within a model, the standardized coefficient measures how a standard deviation change in the independent variable affect the standard deviation change in the dependent variable. Comparing the standardized coefficients allow for the relative sizes of the associations between variables to be determined.

The variables in the model were tested for correlations and for possible multicollinearity issues using correlation analysis and Variance Inflation Factor (VIF). All correlation coefficients (see Appendix A) were below the generally accepted limit of .80, above which may indicate multicollinearity (Berry & Feldman, 1985). Similarly, no issues were found with collinearity using Variance Inflation Factor (all VIF < 1.8). Data were also checked using the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, which was found to occur ($p < .05$). Thus, the analysis uses robust regression (in STATA, vce(robust) parameter) to minimize the impact of heteroskedasticity.

The regression analysis was performed on a complete case analysis basis and uses respondent-level weights provided by the data set which incorporate a nonresponse adjustment based on age and urbanicity. Given the continuous nature of the dependent variable, this study employed an OLS regression model to investigate the connection between perceived relative income and happiness. It was anticipated that the lower the perceived relative financial status during childhood, the higher the level of anxiety in older adults.

Results

Descriptive Statistics

A summary of the descriptive statistics for the sample are presented in Tables 2.1 and 2.2. The final sample of 2,101 included almost an equal proportion of women (51%) and men (49%)

and a majority (72%) of participants were married or cohabitating. Over half (61%) had at least some college or more, and 78% of the sample identified themselves as White.

Household income was distributed among four groups, with more participants in the $25,000 to $49,999 (31%) and the $50,000 to $99,999 (31%) than in the under $25,000 (23%) or over $100,000 (15%) categories. The net worth category with the highest frequency of participants was the $100,000 to $499,999 category which accounted for almost 41% of the sample, followed by those with $500,000 or more, which accounted for 32% of the sample.

Table 2.1 Sample Characteristics of Categorical Variables (N = 2,101)

Variables	n	%
Gender		
Male	1,026	49%
Female	1,075	51%
Race/Ethnicity		
White	1,633	78%
Black, Hispanic, Other	468	22%
Age		
62-69	895	43%
70-79	814	39%
80-90	392	19%
Education Level		
Less than high school	314	15%
High school (or equivalent)	512	24%
Some college or vocational	685	33%
Bachelors or more	590	28%
Income		
Less than $25,000	490	23%
$25,000-$49,999	646	31%
$50,000-$99,999	659	31%
$100,000 and above	306	15%

Table 2.1 (continued)

Variables	n	%
Net Worth		
Less than $10,000	171	8%
$10,000 - $49,999	213	10%
$50,000 - $99,999	199	9%
$100,000 - $499,999	851	41%
$500,000 or more	667	32%
Partnered Status		
Partnered (Married/Cohabiting)	1,523	72%
Not Partnered	578	28%

Table 2.2 Sample Characteristics of Scales and Continuous Variables (N = 2,101)

Variable	M	SD	Min	Max
Happiness	7.44	1.19	2	8
Peer-Based perceived relative income	2.83	.85	1	5
National-Based perceived relative income	2.85	.94	1	5
Physical health (self-assessed)	3.29	1.04	1	5
Loneliness	3.09	2.28	0	9
Depressive symptoms	13.09	4.02	9	34

OLS Regression Results

Peer-based comparisons. A summary of the OLS regression model results using peer-based perceived relative income as the key predictor variable is provided in Table 2.3. The R-squared value of .25 indicates that 25% of the variance in happiness in older adults is explained by the model. Peer-based perceived relative income, however, was not a significant predictor of happiness in this model, thereby failing to support Hypothesis 1. As suggested by literature, loneliness (b = -.06, p < .001) and depressive symptomology (b = -.12, p < .001) were significant inverse predictors of happiness. That is, for each unit increase in loneliness, there is a corresponding 6% decrease in happiness, and for a unit increase in depressive symptoms, there is

an 12% decrease in happiness. The standardized regression coefficients indicate that depressive symptomology was the most influential predictor of a decrease in happiness in older adults, followed by loneliness. Self-assessed physical health ($b = .08$, $p < .05$) was a positive predictor of happiness in this model. For every point increase in self-assessed physical health, happiness is expected to increase by 8%. Participants who were married or cohabitating reported higher levels of happiness ($b = .14$, $p < .05$), such that being partnered (married or cohabitating) increased happiness by 14% over not being partnered. Having a high school education was only marginally significantly related to happiness ($b = .18$, $p < .10$), compared to the reference group of less than high school, and having completed some college was linked to an 21% increase in happiness ($p < .05$), yet the other education category of having a bachelor's degree or higher was not found to have a statistically significant relationship with happiness. Non-White participants had a 7% lower level of happiness ($p < .01$) compared to White respondents. Compared with the age reference group of 62-to-69-year-olds, respondents aged 80 to 90 were happier ($p < .05$). Results for other variables such as net worth, income, and gender were not significant.

Table 2.3 Ordinary Least Squares Regression Analysis for Variables Predicting Happiness (Peer-Based Perceived Relative Income; N = 2,101)

Independent Variable	*b*	β	*Robust SE*	*95% CI Lower*	*95% CI Upper*
Peer-Based perceived relative income	-.003	-.002	.04	-.08	.08
Self-Assessed physical health	.078*	.072	.03	.02	.14
Depressive symptoms	-.115***	-.400	.01	-.14	-.09
Loneliness	-.056***	-.110	.02	-.09	-.03
Partnered status					
Not partnered (reference)	-	-	-	-	-
Partnered (married, cohabitating)	.156*	.058	.07	.01	.28
Gender					
Male (reference)	-	-	-	-	-
Female	.057	.025	.06	-.05	.17

Table 2.3 (continued)

Independent Variable	*b*	β	*Robust SE*	*95% CI Lower*	*95% CI Upper*
Income					
Less than $25,000 (reference)	-	-	-	-	-
$25,000-$49,999	-.040	-.014	.09	-.20	.13
$50,000-$99,999	-.060	-.021	.10	-.25	.14
$100,000 and above	-.074	-.021	.13	-.31	.18
Education Level					
Less Than High School (reference)	-	-	-	-	-
High School (or equivalent)	.149	.067	.11	-.03	.38
Some College or Vocational	.185[t]	.086	.10	-.01	.41
Bachelors or More	.130	.063	.12	-..07	.38
Net Worth					
Less than $10,000	-	-	-	-	-
$10,000 - $49,999	.069	.016	.16	-.25	.36
$50,000 - $99,999	.102	.023	.15	-.21	.40
$100,000 - $499,999	.027	.006	.14	-.27	.30
$500,000 or more	-.032	-.021	.15	-.35	.25
Race/Ethnicity					
White (reference)	-	-	-	-	-
Black, Hispanic, Other	-.224**	-.069	.08	-.39	-.06
Age					
62-69 (reference)	-	-	-	-	-
70-79	-.045	-.018	.06	-.16	.07
80-90	.152*	.049	.07	.01	.30

[t] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

National-based comparisons. A summary of the OLS regression model results using peer-based perceived relative income as the key predictor variable is provided in Table 2.4. The R-squared value of .25 indicates that 25% of the variance in happiness in older adults is explained by the model. National-based perceived relative income, however, was not a significant predictor of happiness in this model, thereby failing to support Hypothesis 2. The same variables that were significant in the model testing peer-based comparisons were also significant in the model testing national-based comparison, each with similar significant levels

and coefficients. Loneliness (b = -.06, p < .001) and depressive symptomology (b = -.12, p < .001) were significant inverse predictors of happiness, and self-assessed physical health (b = .08, p < .05) was a positive predictor of happiness in this model. For every point increase in self-assessed physical health, happiness is expected to increase by 8%. Participants who were married or cohabitating reported higher levels of happiness (b = .14, p < .05), such that being partnered (married or cohabitating) increased happiness by 14% over not being partnered. Having a high school education was only marginally significantly related to happiness (b = .18, p < .10), compared to the reference group of less than high school, and some college was linked to higher happiness (b = .21, p < .05), yet the other education category (bachelor's degree or higher) was not found to have a statistically significant relationship with happiness compared to the reference group.

For ethnicity, compared to White respondents, Black, Hispanic, and Other respondents' happiness scale scores were 23% (p < .01) lower. Compared with the age reference group of 62-to-69-year-olds, respondents aged 80 to 90 were happier (p < .05). Results for other variables such as net worth, income, and gender were not significant.

Table 2.4 Ordinary Least Squares Regression Analysis for Variables Predicting Happiness (National-Based Comparison; N = 2,101)

Independent Variable	*b*	β	*Robust SE*	*95% CI Lower*	*95% CI Upper*
National-Based perceived relative income	-.024	-.024	.04	-.10	.05
Self-Assessed physical health	.080*	.080	.03	.02	.14
Depressive symptoms	-.116***	-.116	.01	-.14	-.09
Loneliness	-.056***	-.111	.02	-.09	-.03
Partnered status					
Not partnered (reference)	-	-	-	-	-
Partnered (married, cohabitating)	.143*	.058	.07	.01	.28
Gender					
Male (reference)	-	-	-	-	-
Female	.058	.025	.06	-.05	.17

Table 2.4 (continued)

Independent Variable	b	β	Robust SE	95% CI Lower	95% CI Upper
Income					
Less than $25,000 (reference)	-	-	-	-	-
$25,000-$49,999	-.029	-.011	.08	-.19	.14
$50,000-$99,999	-.038	-.015	.10	-.23	.16
$100,000 and above	-.040	-.012	.13	-.29	.21
Education Level					
Less than high school (reference)	-	-	-	-	-
High school (or equivalent)	.176	.066	.10	-.03	.38
Some college or vocational	.209[t]	.086	.10	-.01	.41
Bachelors or more	.164	.065	.11	-.06	.39
Net Worth					
Less than $10,000	-	-	-	-	-
$10,000 - $49,999	.065	.017	.15	-.24	.37
$50,000 - $99,999	.103	.025	.15	-.20	.40
$100,000 - $499,999	.024	.010	.14	-.26	.30
$500,000 or more	-.030	-.013	.15	-.33	.27
Race/Ethnicity					
White (reference)	-	-	-	-	-
Black, Hispanic, Other	-.225**	-.069	.08	-.39	.06
Age					
62-69 (reference)	-	-	-	-	-
70-79	-.043	-.018	.06	-.16	.08
80-90	.156*	.050	.08	.01	.30

[t] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The regression model results for both peer-based comparisons of perceived relative income and national based comparisons produced an R-squared of .25, (F [21, 2079] = 16.06, p =.000), indicating that 25% of the variance in happiness in older adults was explained by the variables in the model. The findings do not, however, support a connection between perceived relative income and happiness in older adults, whether the referent others be "people you know"

or whether they be “American families in general” (Waite et al., 2013). Without significant results in these two regression models, it cannot be determined if one type of comparison group has a stronger connection to happiness than the other.

The explanatory value of the model results is congruent with literature that has shown an inverse relationship between variables such as loneliness and happiness, and between depressive symptoms and happiness. Similarly, a link between higher self-assessed health and happiness was confirmed. While these factors are generally understood to be related to individual happiness, the findings from the current study confirm that they are also related to happiness for the targeted older adult ages of 62- to 90-year olds. The oldest group in the study, those aged 80-90, were happier than the 62-69 year old reference group, suggesting that old age, even with potential downsides such as health issues, might be something to look forward to with anticipation rather than with dread. Other anticipated connections, such as that between gender and happiness, net worth and happiness, and income and happiness, were not found to have a statistically significant association.

Implications

The lack of statistical significance leaves the research question of how perceived relative income is linked to happiness in older adults unanswered. Though other studies and theory predicts a connection between subjective financial measures such as perceived relative income and measures of individual well-being such as happiness, the current study did not provide such statistical support. This lack of statistically significant results means that the null hypothesis is not rejected. It should be noted that this does not imply that the null hypothesis is accepted. That is, the results cannot be interpreted to support any assertion that the null hypothesis—that there is no relationship between perceived relative income and happiness—is true. Accordingly, this

study's results do not necessarily contradict the guiding theoretical perspective nor previous literature. Rather, they simply fail to add support using this model and sample.

Interestingly, the findings also did not find a connection between objective financial measures, such as household income and assets, and the outcome variable of happiness in older adults. Certainly, these results might make one wonder whether neither these objective nor subjective financial measures are a component of shaping older adult happiness—a notion that may be comforting to those who dislike the idea that a part of individual happiness may be derived from comparisons to others. One possible reason for the lack of a connection between objective financial measures and older adult happiness include research that echoes the common adage "money can't buy happiness." Results from a well-known study by Kahneman and Deaton (2010) found that higher income and wealth was in fact tied to higher emotional (hedonic) well-being, but that connection was the case only up to an annual income of about $75,000. Incomes above that level were not found to be connected to additional happiness. Another possible explanation for this particular age group might stem from the possibility that older adults derive happiness differently from younger age groups. According to research by Mogilner, Kamvar, and Aaker (2011), the meaning of happiness may shift over the life span from excitement-based activities in younger years to peacefulness in older years. As people age, their focus may turn to living in the present, valuing existing relationships, and being at peace. Since peacefulness is less reliant on money than the excitement-derived happiness of younger ages, it follows that objective financial measures such as income and net worth would not necessarily be linked to happiness specifically in older adults.

Fear of losing loved ones, of becoming a burden to others, or of facing declining health might make happiness in the older age groups seem improbable. Yet, the oldest category of

respondents, 80- to 90-year olds, was tied to higher happiness. Applying the lessons from Mogilner, Kamvar, and Aaker (2011), in old age one may recognize the finite timeline of life, turning one's attention to enjoying relationships, letting go of negatives, reminiscing on good times, and finding peace. Understanding happiness is a complex undertaking, and a potential connection between perceived relative income and happiness in older adulthood may also be obfuscated by possible differences in individual personalities, values, or other mechanisms—all possibilities that point to topics for future study.

Limitations

Certain limitations span the three studies and thus are discussed in Chapter 5. Limitations that are unique to each study will be reported in the corresponding chapter. With this study's goal of assessing the potential connection between perceived relative income and happiness and exploring referent others, the survey questions used for these measurements could be improved. For example, the question used to measure peer-compared perceived relative income provided the respondent with a list of whom the respondent should consider (i.e., "your friends, family, neighbors, and work associates") when comparing their income. While this approach possibly comes close to measuring comparisons to salient referent others, in reality these suggested groups may or may not be who the respondents consider as their peers, who the respondents would have self-selected, or who the respondents consider to be salient comparative others. The second questions, "Compared with American families in general" also begs the question of whether this is a salient group for comparison, particularly for the older adult population of interest. Depending on the respondent's self-perception, asking older adults to compare their income to American families in general might be akin to asking a young family to compare themselves to an older retiree. If the group "American families" is not seen as salient or

sufficiently similar to the respondent, then it might not be capturing what is intended for the research question at hand. Looking solely at perceived relative income presents another limitation as it ignores the possible role that perceived relative assets might have in individual perceptions. Focusing on income alone overlooks the possibility that a broader judgement of overall financial standing, including assets or other resources, might be connected to happiness. If statistically significant results had been found, then the study would also be limited in that a causal relationship could not be established due to the use of cross-sectional data.

Future Directions

The mystery of who individuals use as referent others remains. Is individual happiness for older adults influenced by comparisons to friends, family members, neighbors, or co-workers? Or, if no such direction regarding whom to use as a referent other were given, who would respondents use in their comparisons? Do comparisons to previous classmates matter? Do people use advertisements or access to others who they may or not know personally via social media as a basis for comparisons? Determining who and how people perceive themselves compared to others is still not definitively answered, and warrants further exploration. Qualitative research would be valuable in finding answers to the question of who people use as salient referent others.

Future research could consider that perceptions and comparisons that influence happiness may be based on the judgment of a broader element than just income as was measured in the current study. Perceived overall relative financial position, which may include assets, observed experiences, cost-of-living differences, and other difficult-to-quantify items such as earning potential of those around us may be a more pertinent comparison variable. The current study provides a basis for such further exploration into overall relative financial perceptions.

While the current study focused on the potential positive outcome of happiness that could stem from perceptions of comparatively higher incomes, others have focused on negative effects of negative relative perceptions. Future studies could look at whether negative feelings that stem from a position of "less than" others are felt more acutely than are positive feelings that stem from a position of "more than" others. Are we dismissive of positive comparisons, yet give weight to negative ones? Further study could also investigate the topic beyond the older age focus of the current investigation. Does perceived relative income have a link to happiness at other stages in life?

While the study's theoretical lens points to perceived comparisons as the predictor variable, and the well-being measure as the outcome variable, a different direction to consider in the future is what other factors are influencing the formation of the perceptions. Namely, one's affect (i.e., happiness) at the time of the survey may shape how individuals respond to questions about their perceived relative income. Though the current study did not find a statistically significant relationship between the key independent variable of perceived relative income and the dependent variable of happiness in older adults, it provides a theoretical basis for this line of inquiry and could lay the groundwork for future studies into a broader concept of perceived relative overall financial position, into whom people use as referent others, into how affect may play a role in perceptions, and into possible differences in positive versus negative self-evaluations.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Barbic, S. P., Bartlett, S. J., & Mayo, N. E. (2013). Emotional vitality: Concept of importance for rehabilitation. *Archives of Physical Medicine and Rehabilitation*, *94*(8), 1547–1554. https://doi.org/10.1016/j.apmr.2012.11.045

Bergsma, A., & Veenhoven, R. (2011). The happiness of people with a mental disorder in modern society. *Psychology of Well-Being: Theory, Research and Practice*, *1*(1), 1–6. https://doi.org/10.1186/2211-1522-1-2

Berry, W. D., & Feldman, S. (1985). *Multiple regression in practice: Quantitative applications in the social sciences*. Thousand Oaks, CA: SAGE.

Blumer, H. (1994). Society as symbolic interaction. In N. J. Herman & L. T. Reynolds (Eds.), *Human Behavior and Social Processes* (pp. 179–192). Retrieved from http://books.google.com/books?hl=en&lr=&id=HsTozBEO9_YC&oi=fnd&pg=PA263&dq=Society+as+Symbolic+Interaction&ots=lcGd7tQr1q&sig=fiuii0TINc13G1x65pFW-cxk3uI

Bohannon, R. W., Maljanian, R., & Goethe, J. (2003). Screening for depression in clinical practice: Reliability and validity of a five-item subset of the CES-Depression. *Perceptual and Motor Skills*, *97*(3), 855–861. https://doi.org/10.2466/pms.2003.97.3.855

Bookwalter, J. T., & Dalenberg, D. R. (2010). Relative to what or whom? The importance of norms and relative standing to well-being in South Africa. *World Development*, *38*(3), 345-355. https://doi.org/10.1016/j.worlddev.2009.07.001

Burr, W. R., Leigh, G., Day, R., & Constantine, J. (1979). Symbolic interaction and the family. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), *Contemporary theories about the family* (Vol. 2, pp. 42–111). New York, NY: Free Press.

Caporale, G. M., Georgellis, Y., Tsitsianis, N., & Yin, Y. P. (2009). Income and happiness across Europe: Do reference values matter? *Journal of Economic Psychology*, *30*(1), 42–51. https://doi.org/10.1016/j.joep.2008.06.004

Carr, D. (2004). Gender, preloss marital dependence, and older adults' adjustment to widowhood. *Journal of Marriage and Family*, *66*(1), 220–235. https://doi.org/10.1111/j.0022-2445.2004.00016.x

Choi, N. G., & Ha, J. H. (2011). Relationship between spouse/partner support and depressive symptoms in older adults: Gender difference. *Aging & Mental Health*, *15*(3), 307–317. https://doi.org/10.1080/13607863.2010.513042

Clark, A. E., & Oswald, A. J. (1996). Satisfaction and comparison income. *Journal of Public Economics*, *61*(3), 359–381. https://doi.org/10.1016/0047-2727(95)01564-7

Cooley, C. H. (1902). *Human nature and the social order*. New York, NY: Charles Scribner's Sons. Retrieved from https://ttu-ir.tdl.org/ttu-ir/bitstream/handle/2346/47107/ttu_stc001_000010.pdf?sequence=1

Cornwell, E. Y., & Waite, L. J. (2012). Social network resources and management of hypertension. *Journal of Health and Social Behavior*, *53*(2), 215–231. https://doi.org/10.1177/0022146512446832

Cruces, G., Perez-Truglia, R., & Tetaz, M. (2013). Biased perceptions of income distribution and preferences for redistribution: Evidence from a survey experiment. *Journal of Public Economics*, *98*, 100–112. https://doi.org/10.1016/j.jpubeco.2012.10.009

Csikszentmihalyi, M., & Hunter, J. (2003). Happiness in everyday life: The uses of experience sampling. *Journal of Happiness Studies*, *4*(2), 185–199. https://doi.org/10.1023/A:1024409732742

Dambrun, M., Desprès, G., & Lac, G. (2012). Measuring happiness: From fluctuating happiness to authentic–durable happiness. *Frontiers in Psychology*, *3*(16), 1–11. https://doi.org/10.3389/fpsyg.2012.00016

Davidson, N. M. (2009). Property and relative status. *Michigan Law Review*, *107*, 757–817.

Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? *Social Indicators Research*, *57*(2), 119–169. https://doi.org/10.1023/A:1014411319119

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology*, *47*(5), 1105–1117. https://doi.org/10.1037/0022-3514.47.5.1105

Diener, E., Sandvik, E., & Pavot, W. (2009). Happiness is the frequency, not the intensity, of positive versus negative affect. In *Assessing well-being* (pp. 213–231). New York, NY: Scribner's Sons.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*(2), 267–302.

Dittmann, J., & Goebel, J. (2010). Your house, your car, your education: The socioeconomic situation of the neighborhood and its impact on life satisfaction in Germany. *Social Indicators Research*, *96*(3), 497–513. https://doi.org/10.1007/s11205-009-9489-7

Easterlin, R. A. (1995). Will raising the incomes of all increase the happiness of all? *Journal of Economic Behavior & Organization*, *27*(1), 35–47. https://doi.org/10.1016/0167-2681(95)00003-B

Geiselmann, B., & Bauer, M. (2000). Subthreshold depression in the elderly: Qualitative or quantitative distinction?. *Comprehensive Psychiatry 41*, 32-38. https://doi.org/10.1016/s0010-440x(00)80006-1

Georgellis, Y., Garcia, S. M., Gregoriou, A., & Ozbilgin, M. (2017). Pay referents and satisfaction with pay: Does occupational proximity matter? *British Journal of Management, 30(3), 578–592*. https://doi.org/10.1111/1467-8551.12272

Golden, J., Conroy, R. M., Bruce, I., Denihan, A., Greene, E., Kirby, M., & Lawlor, B. A. (2009). Loneliness, social support networks, mood and wellbeing in community-dwelling elderly. *International Journal of Geriatric Psychiatry: A Journal of the Psychiatry of Late Life and Allied Sciences, 24*(7), 694–700. https://doi.org/10.1002/gps.2181

Goodwin, F. K., & Jamison, K. R. (2007). *Manic-depressive illness: Bipolar disorders and recurrent depression* (Vol. 1). New York, NY: Oxford University Press.

Hyman, H. H. (1942). The psychology of status. *Archives of Psychology (Columbia University)*, *269*, 5–94.

Ifcher, J., & Zarghamee, H. (2016). Inequality of Happiness: Evidence of the Compression of the Subjective-Wellbeing Distribution with Economic Growth. In *Inequality and Growth: Patterns and Policy* (pp. 225–249). London, England: Palgrave Macmillan.

Irwin, M., Artin, K. H., & Oxman, M. N. (1999). Screening for depression in the older adult: Criterion validity of the 10-item Center for Epidemiological Studies Depression Scale (CES-D). *Archives of Internal Medicine*, *159*(15), 1701–1704. https://doi.org/10.1001/archinte.159.15.1701

Kahneman D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 3–25). New York: Russell Sage Foundation.

Karraker, A. W. (2012). *Feeling poor and being sick: Three essays on social status, psychosocial resources, and health* (Doctoral dissertation, University of Wisconsin-Madison).

Kelley, H. H. (1952). Two functions of reference groups. *Readings in Social Psychology*, *2*, 410–414.

Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., & Diener, M. (2005). Integrating the diverse definitions of happiness: A time-sequential framework of subjective well-being. *Journal of Happiness Studies*, *6*(3), 261–300. https://doi.org/10.1007/s10902-005-7226-8

Kitces, M. (2015). 6 key value propositions a good financial planner can provide for clients seeking a better "return on life." Retrieved from https://www.kitces.com/blog/6-key-value-propositions-a-good-financial-planner-can-provide-for-clients-seeking-a-better-return-on-life/

Kuhn, M. H. (1964a). Major trends in symbolic interaction theory in the past twenty-five years. *The Sociological Quarterly*, *5*(1), 61–84. https://doi.org/10.1111/j.1533-8525.1964.tb02256.x

Kuhn, M. H. (1964b). The reference group reconsidered. *The Sociological Quarterly*, *5*(1), 5–19. https://doi.org/10.1111/j.1533-8525.1964.tb02252.x

Kwon, H., & Linderholm, T. (2015). Reading speed as a constraint of accuracy of self-perception of reading skill. *Journal of Research in Reading, 38*(2), 159–171. https://doi.org/10.1111/1467-9817.12013

Lawton, M. P., Moss, M. S., Winter, L., & Hoffman, C. (2002). Motivation in later life: Personal projects and well-being. *Psychology and Aging*, *17*(4), 539–547. https://doi.org/10.1037/0882-7974.17.4.539

Levine, S. Z. (2013). Evaluating the seven-item Center for Epidemiologic Studies Depression Scale short-form: A longitudinal US community study. *Social Psychiatry and Psychiatric Epidemiology*, *48*(9), 1519–1526. https://doi.org/10.1007/s00127-012-0650-2

Lora, E., & Fajardo, J. (2013). Latin American middle classes: The distance between perception and reality. *Economía*, *14*(1), 33–60.

Luttmer, E. F. (2005). Neighbors as negatives: Relative earnings and well-being. *The Quarterly Journal of Economics*, *120*(3), 963–1002. https://doi.org/10.1093/qje/120.3.963

Maslow, A. H. (1999). *Toward a psychology of being* (3rd ed.). New York, NY: John Wiley.

Melchior, L. A., Huba, G. J., Brown, V. B., & Reback, C. J. (1993). A short depression index for women. *Educational and Psychological Measurement*, *53*(4), 1117–1125. https://doi.org/10.1177/0013164493053004024

Merton, R. K. (1968). *Social theory and social structure*. New York, NY: Simon and Schuster.

Merton, R. K., & Kitt, A. S. (1950). Contributions to the theory of reference group behavior. In R. K. Merton & P. F. Lazersfeld (Eds.), *Continuities in social research: Studies in the scope and method of "the American soldier"* (pp. 225–249). Glencoe, IL: Free Press.

Mogilner, C., Kamvar, S. D., & Aaker, J. (2011). The shifting meaning of happiness. *Social Psychological and Personality Science*, *2*(4), 395–402. https://doi.org/10.1177/1948550610393987

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, *55*(1), 56–67. https://doi.org/10.1037/0003-066X.55.1.56

National Research Council. (2013). In A. A. Stone & C. Mackie (Eds.). *Subjective well-being: Measuring happiness, suffering, and other dimensions of experience.* Washington, DC: National Academies Press.

O'Muircheartaigh, C., Eckman, S., & Smith, S. (2009). Statistical design and estimation for the national social life, health, and aging project. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *64*(suppl_1), i12-i19. https://doi.org/10.1093/geronb/gbp045

Oshio, T., Nozaki, K., & Kobayashi, M. (2011). Relative income and happiness in Asia: Evidence from nationwide surveys in China, Japan, and Korea. *Social Indicators Research, 104*(3), 351–367. https://doi.org/10.1007/s11205-010-9754-9

Pham-Kanter, G. (2009). Social comparisons and health: Can having richer friends and neighbors make you sick? *Social Science & Medicine*, *69*(3), 335–344. https://doi.org/10.1016/j.socscimed.2009.05.017

Posel, D. R., & Casale, D. M. (2011). Relative standing and subjective well-being in South Africa: The role of perceptions, expectations and income mobility. *Social Indicators Research*, *104*(2), 195–223. https://doi.org/10.1007/s11205-010-9740-2

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Robinson, M. D., & Clore, G. L. (2002). Episodic and semantic knowledge in emotional self-report: Evidence for two judgment processes. *Journal of Personality and Social Psychology*, *83*(1), 198. https://doi.org/10.1037/0022-3514.83.1.198

Rogers, C. R. (1961). *On becoming a person*. Boston: Houghton Muffin.

Ross, W. D. (Trans). (n.d.). *Nicomachean ethics*. Retrieved from http://classics.mit.edu/Aristotle/nicomachaen.1.i.html

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*(1), 141–166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Saunders, S. A., & Roy, C. (1999). The relationship between depression, satisfaction with life, and social interest. *South Pacific Journal of Psychology*, *11*(1), 9–15.

Schroevers, M. J., Sanderman, R., Van Sonderen, E., & Ranchor, A. V. (2000). The evaluation of the Center for Epidemiologic Studies Depression (CES-D) scale: Depressed and Positive Affect in cancer patients and healthy reference subjects. *Quality of Life Research*, *9*(9), 1015–1029. https://doi.org/10.1017/S0257543400000717

Schulaka, C. (2016). Mitch Anthony on why ROI is a dead end and how to explain your value proposition. *Journal of Financial Planning*, *29*(11), 17–21.

Stone, A., & Mackie, C. (2013). *Subjective Well-Being: Measuring Happiness, Suffering, and Other Dimensions of Experience*. Washington DC: National Academies Press. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK179216/

Stouffer, S. A., Suchman, E. A., DeVinney, L. C., Star, S. A., & Williams, R. M., Jr. (1949). *The American soldier: Adjustment during army life*. Princeton, NJ: Princeton University Press

Sussman, A. B., & Shafir, E. (2012). On assets and debt in the psychology of perceived wealth. *Psychological Science*, *23*(1), 101–108. https://doi.org/10.1177/0956797611421484

Thomas, W. I., & Thomas, D. S. (1928). *The child in America: Behavior problems and programs*. New York, NY: A. A. Knopf.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, England: Blackwell.

Vaughan, M. W., LaValley, M. P., Felson, D. T., Orsmond, G. I., Niu, J., Lewis, C. E., Segal, N. A., Nevitt, M.C., & Keysor, J. J. (2018). Affect and incident participation restriction in adults with knee osteoarthritis. *Arthritis Care & Research*, *70*(4), 542–549. https://doi.org/10.1002/acr.23308

Veenhoven, R. (1991). Is happiness relative? *Social Indicators Research*, *24*(1), 1–34. https://doi.org/10.1007/BF00292648

Viner, R. M., Haines, M. M., Taylor, S. J. C., Head, J., Booy, R., & Stansfeld, S. (2006). Body mass, weight control behaviours, weight perception and emotional well being in a multiethnic sample of early adolescents. *International Journal of Obesity*, *30*(10), 1514–1521. https://doi.org/10.1038/sj.ijo.0803352

Waite, L. J., Cagney, K. A., Cornwell, B., Dale, W., Huang, E., Laumann, E. O., ... & Schumm, L. P. (2013). *National Social Life Health and Aging Project (NSHAP): Wave 2* [Data file

and code book]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Warner, D. F., & Adams, S. A. (2016). Physical disability and increased loneliness among married older adults: The role of changing social relations. *Society and Mental Health*, *6*(2), 106–128. https://doi.org/10.1177/2156869315616257

Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology*, *63*(3), 193–210. https://doi.org/10.1111/j.2044-8325.1990.tb00521.x

White, J., & Klein, D. (2008). Family theories (3rd ed.). Thousand Oaks, CA: Sage.

Wilkinson, R. G. (1997). Socioeconomic determinants of health: Health inequalities: Relative or absolute material standards? *British Medical Journal*, *314*(7080), 591–595. https://doi.org/10.1136/bmj.314.7080.591

Wolff, L. S., Subramanian, S. V., Acevedo-Garcia, D., Weber, D., & Kawachi, I. (2010). Compared to whom? Subjective social status, self-rated health, and referent group sensitivity in a diverse US sample. *Social Science & Medicine*, *70*(12), 2019–2028. https://doi.org/10.1016/j.socscimed.2010.02.033

Wong, J. S., & Waite, L. J. (2017). Elder mistreatment predicts later physical and psychological health: Results from a national longitudinal study. *Journal of Elder Abuse & Neglect*, *29*(1), 15–42. https://doi.org/10.1080/08946566.2016.1235521

Yang, Y. (2008). Social inequalities in happiness in the United States, 1972 to 2004: An age-period-cohort analysis. *American Sociological Review*, *73*(2), 204–226. https://doi.org/10.1177/000312240807300202

Chapter 3 - Are We Poor? The Enduring Nature of Recalled Childhood Perceived Financial Status

Introduction

A 10-year-old child from a mass-affluent household posed the question to her mother, "Are we poor?" Such a question revealed the daughter's perception that her family possibly lacked financial resources. In reality, the family had solid financial standing and was considered to be upper middle class. The family lived in a safe neighborhood with home prices that were double or triple the city's average. The family had steady income, saved for retirement, went on annual vacations, donated to charity, and devoted time and money to their children's education and extra-curricular activities. Surprised at the child's question, the mother asked the daughter what made her wonder if the family was poor. The girl explained that her friends' homes had granite countertops, but hers did not.

It might seem easy to dismiss the child's conclusion of poverty, contributing her thoughts to inexperience or naivety, particularly when her assessment was far from accurate considering standard measures of poverty. Imbedded in her concern and reasoning was a clear comparison she was making to her relevant others—her friends. One might wonder whether the child's perception of her family's circumstances, which she expressed to be based on her comparison to features in other homes in her neighborhood, could have a connection with psychological distress in the form of anxiety. Studies on related topics point to the importance of perceptions of social status in adolescents. For example, in a study using a national survey of American adolescents ages 13 to 17, associations among both absolute SES and relative SES and mental disorders were examined. The results showed that subjective social status was more consistently associated with mental disorder in these adolescents than other objective social status variables (McLaughlin,

Costello, Leblanc, Sampson, & Kessler, 2012). These findings support the notion that perceptions of one's situation in comparison to others can have different correlations to outcomes than do objective measures. In a recent study that drew upon data collected of British teenage twins, older adolescents who perceived their family as having higher social economic standing compared to their own twin's perception, exhibited fewer mental health problems and had fewer problems as they transitioned to adulthood. These benefits were irrespective of their families' objective financial standing (Rivenbark et al., 2020). Following the same line of thought, would the child's perception of her circumstances affect her psychologically (e.g., anxiety), not only in the present, but over her entire life course? Childhood circumstances and experiences are often cited as setting the stage for adult outcomes, from young adulthood all the way to retirement and end of life (Bengtson & Allen 1993; Choi, DiNitto, Marti, & Choi, 2017; Elder, 1985; Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003; Merrick et al., 2017; O'Rand, 1996). Just as lessons of older adult health outcomes such as skin cancer or cardiovascular disease have spurred policies and the development of interventions all the way back to sunscreen usage or fitness promotion for our nation's youth, mental health outcomes such as anxiety in older adulthood might have potential preventions stemming from adolescent years. Knowledge of such connections between childhood and older adult mental health would be helpful, particularly if interventions in childhood would be of value. Understanding these potential connections might help parents find healthy ways to discuss finances with children and teens that will be beneficial not only during formative years, but also for a lifetime.

With the aging American population (Vespa, 2018), understanding successful aging is more important than ever. Exploring new angles that may contribute to understanding anxiety in

this growing population segment is an important step toward maintaining or improving older adult quality of life.

Much research has focused on objective measures, such as family income, education level, and net worth in childhood, and their links to later psychological outcomes such as anxiety in adulthood. The present study turns attention to childhood perceptions of relative financial status and the long-term timeline of older adulthood. Stemming from the child's question which illuminates the importance of perceptions, and considering the enduring nature of childhood experiences, this study aims to explore the research question: how are individuals' recalled perceptions of their family's relative financial status during childhood associated with their level of anxiety in older adulthood?

Theoretical Framework: Life Course Perspective

Life course perspective, also referred to as life course theory, paradigm, approach, or methodology, provides a theoretical orientation for the present study. Life course, used in the study of individual lives, human development, health, well-being, and aging, is "a sequence of socially defined events and roles that an individual enacts over time" (Elder, 1975). Life course considers the whole of one's life, from beginning to end, and reflects the accumulation of the individual experiences in their social, environmental, and historic context as they age. The life course approach includes the idea that early life experiences are connected to later life outcomes (Elder, Johnson, & Crosnoe, 2003). Life course views human development as an integrated continuum shaped by the contexts in which individuals live (Hunt, 2017). These contexts in which individuals live could be on the macro level, with government policies, culture, and historic events influencing life experiences and outcomes (Bengtson & Allen 1993; Elder, 1985). These contexts can also be on a micro level, within an individual or family, which is the

emphasis of the current study. The current study draws upon the life course perspective in considering the potential connection between perceptions of relative financial status during childhood and the mental condition of anxiety as an older adult.

Concepts of Life Course Perspective

The life course perspective, rooted in sociology, is congruent with "a holistic focus on the lives of individuals and families," and as such, incorporates ideas from various disciplines, including history, sociology, developmental psychology, biology, and economics (Elder et al., 2003), and has been applied to fields across social sciences. Several concepts are key to life course perspective, including (a) lifelong process of human development and aging, (b) linked lives, (c) socio-historical and geographic location, (d) human agency, and (e) critical periods.

Lifelong process of human development and aging. Life course perspective holds that human development, adaptation, and change occur not only in childhood, but also throughout adult life (Elder et al., 2003). Elder explained this long-term view of the human development process, stating, "development does not end at age 18" (Elder et al., 2003 p. 11). The perspective holds that one's formative years are linked to late-life adaptation and aging.

Linked lives. The principle of linked lives highlights that individuals are interconnected to others, through families, work, and other groups (Elder et al., 2003). This core life course principle holds that lives are lived interdependently, with shared relationships that include not only family members, but also other relationships such as friends, neighbors, and co-workers (Marshall & Mueller, 2003).

Sociohistorical and geographical location. Life course perspective incorporates sociohistorical and geographical location, more simply referred to as the principle of time and place, in which context is vital to understanding human lives and development (Elder et al.,

2003). The concept of time in life course perspective includes chronological age and maturity (individual time), birth cohort (generational time), and societal events (historical time) as pieces in understanding people's lives, health, and development (Elder et al., 2003; Kuh et al., 2003). Elder (1985) further described the concept of trajectories and of transitions, which are changes in status or roles. Some of these life transitions are those that relate to social states, such as career changes or changes in marital status. The concept of place includes not only geographical location, but also a social or economic place, such as being part of a family or a group of friends. Other qualities, such as class, gender, age, and ethnicity, are also included in the concept of place (Kuh et al., 2003).

Together, time and place create context, which is key to life course perspective. Kuh et al. (2003) noted that both one's exposure to risk factors, and one's response to such adversities may be shaped by context. For the present study, the recalled perceived relative financial status of the family during childhood captures some of the micro-level context of this critical stage of development.

Human agency. Life course perspective assumes that individuals have a sense of self and can be active in making decisions about their lives. Rather than simply be "passively acted upon," people can plan and choose options within their circumstances, which can impact their futures (Elder et al., 2003, p. 11).

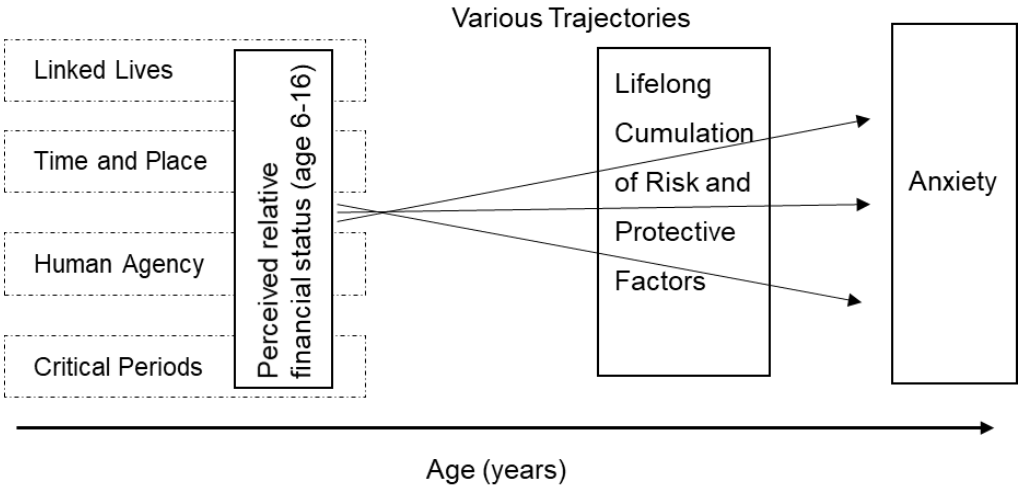
Timing/critical periods. Central to life course perspective is the notion that the past shapes the future. The entirety of one's life leads to later outcomes, and early life influences in particular offer a pathway to understanding future well-being (Elder, 1998). When considering the application of life course perspective in health studies, experiences that are constructive to one's health and development are categorized as "protective" (also called "advantage") factors,

while those that hurt the health trajectory are categorized as “risk” (also termed as “adverse” or “disadvantage”) factors. These protective and risk factors accumulate over the long-term, connecting early life events to later life outcomes (O’Rand, 1996).

A critical period is a limited time or window of development in which protective or risk events can have an effect on future outcomes (O'Rand, 1996). Childhood has consistently been regarded as a critical period in the life course, and studies in fields ranging from sociology to epidemiology have connected events, circumstances, or adversity during the critical periods of childhood to health and well-being well into adulthood (Ben-Shlomo & Kuh, 2002; Kuh et al., 2003; Umberson, Williams, Thomas, Liu, & Thomeer, 2014). On the policy side, the existence of critical periods supports the value of prevention and early interventions to thwart future disorders and to promote positive long-term outcomes for the individual and the population (Forrest & Riley, 2004).

The life course principle of critical periods is a foundational concept to the present study. The idea that childhood is of particular importance as a critical period, which could be connected to conditions well into the future, lends credence to the present study’s prediction that perceptions of relative financial status during childhood are connected to feelings of anxiety in older adults. Life course perspective as applied to the current study is visually represented in Figure 3.1.

Figure 3.1 Life Course Perspective Conceptual Model



The figure illustrates the model in which perceived relative financial status is formed in the framework of the tenets of life course theory. An individual's relationships (linked lives), environment (time and place), sense of self (human agency) are all a part of one's perceptions of relative financial status during childhood, a critical period. Along with an accumulation of risk and protective factors over time, these perceptions contribute to one's trajectory, which in older adulthood may manifest in the form of feelings of anxiety.

Support for applying life course perspective to investigations of older adults was provided by Komp and Johansson (2016) who noted that continuity created through the life course as early age experiences, combined with social networks, influence later age behaviors. They also explained that social inequalities early on set the stage for different life trajectories. Considering how life course perspective suggests that experiences and development during youth are connected to adulthood and old age and previous literature regarding related factors, the following hypothesis was developed:

H1: Lower perceived relative financial status recalled during childhood is associated with higher anxiety in older adulthood.

Literature Review

Previous studies have explored and analyzed related topics, such as the connection between objective childhood circumstances and adult outcomes. For example, childhood poverty has been tied to a myriad of physical health, mental health, and quality of life outcomes in adulthood. On the other end of the financial spectrum, childhood affluence has also been linked to behavioral and psychological problems in adulthood. Relative, rather than objective, financial circumstances during childhood, however, has not been as thoroughly studied. Even fewer studies have considered that one's perception of one's family's relative financial status during childhood may relate to psychological distress in adulthood. This review will focus on literature related to anxiety as an adulthood outcome and perceptions about childhood circumstances as it relates to financial status.

Anxiety

Anxiety is defined as "increased or excessive uncertainty or worry" (American Psychiatric Association, 2013). Anxiety disorders have been identified as one of the most prevalent psychiatric disorders, with some epidemiologic surveys reporting that more than 8% of Americans are affected by an anxiety disorder within the previous year, and that a third of Americans experience an anxiety disorder during their lifetime (Bandelow & Michaelis, 2015; Regier, Narrow, & Rae, 1990). Anxiety has been shown to have a clear negative impact on older adults. For example, in a study by de Beurs, Beekman, Van Balkom, Deeg, & Van Tilburg (1999) on the effects of anxiety disorders and anxiety symptoms in older adults, participants with anxiety symptoms as well as those with diagnosed anxiety disorder were found to have increased disability, lower levels of well-being, and increased use of health services. The physical consequences of anxiety in older adults can be even more dire. For example, in a

longitudinal study of the health consequences of anxiety in older adults, Ostir and Goodwin (2006) found that high anxiety reported in one time period was linked to increased occurrence of death by the five-year follow-up. Despite such grave consequences for older adults, less is known about anxiety in older adults than for younger populations. In fact, much of the literature discussed in the remaining literature review draws from research that included a wider range of adult ages. The findings from these studies on various adult ages were included and tested in the current study for the older adult ages. Ostir and Goodwin (2006) provided various possible reasons for the drop off in research dedicated to anxiety in older adults: (a) it could stem from the viewpoint that there are higher rates of anxiety in younger people thus attention is directed to those age groups, or (b) it could stem from being under-reported and misdiagnosed in older adulthood. The current study aims to help fill the gap in research on anxiety in older adults.

A connection between objective financial means and anxiety has been identified in the literature. For example, in their study on poor mothers and their children, Baer, Kim, and Wilkenfeld (2012) found a positive association between maternal poverty and Generalized Anxiety Disorder (GAD). The researchers noted that the link between poverty and anxiety was not attributable to an internal psychiatric malfunction, but rather to a physical lack of resources. Similarly, other financial aspects such as debt have been found to account for some anxiety in adults. In a study on debt and anxiety, Drentea (2000) found that a higher ratio of credit card debt to income was connected to anxiety. The present study builds upon these investigations that target objective financial measures and anxiety by (a) turning to the less-investigated components of perceptions and comparisons and (b) incorporating the long-term life course view of the enduring nature of childhood circumstances.

Childhood Circumstances

When using childhood circumstances as a predictor to outcomes into older adulthood, the time period between childhood and adulthood spans decades which can amount to more than half a century. Yet, life course perspective and abundance of research connecting childhood circumstances to older adult outcomes support the importance of such inquiry. For example, in a meta-analysis, McEniry (2013) reviewed 1,141 empirical studies of early life conditions and health outcomes in older adults. The author provided a more in-depth review of 20 studies, and concluded that the reviewed studies supported the importance of childhood circumstances on adult health.

Literature on early-life environments is not limited to connections to physical health in older adulthood; studies have also provided evidence of a connection between adverse childhood experiences and mental health in adulthood (Edwards, Holden, Felitti, & Anda, 2003; Lynch, Kaplan, & Shema, 1997). Such literature connects adverse childhood experiences and distress in adulthood, with various outcome variables studied including suicide (Dube et al., 2001), various causes of death (Felitti et al., 1998), alcoholism (Anda et al., 2006), drug use (Dube et al., 2003), and depressive disorders (Chapman et al., 2004). The impact of adverse childhood experiences may set up the body and brain down a trajectory for the rest of their lives, in which individuals' childhood adversities become a part of their biology (Shonkoff, Boyce, & McEwen, 2009).

Childhood Income and Adult Psychological Distress

Childhood poverty is a well-documented and researched topic. Previous literature has indicated that the parental income of a child is relevant not only to the child's early development, but also to the child's future as an adult. In a longitudinal study on childhood conditions and adult emotional and nervous conditions, Fan and Eaton (2001) divided the 1,824 respondents

into two groups based on household income at the ages of 7 and 8. Their findings showed that children from low-income families were almost twice as likely to report the development of emotional or nervous conditions in adulthood than children from high-income families. Various studies have linked family income during childhood to psychological distress, such as depression or generalized anxiety disorder later in life (Gilman, Kawachi, Fitzmaurice, & Buka, 2002; Ochi, Fujiwara, Mizuki, & Kawakami, 2014).

While much attention has been given to researching the risks and outcomes of disadvantaged youth, a smaller body of research considers risks or potential negative outcomes of an affluent childhood. Children in wealthy households are often assumed to be void of problems faced by children of poor households. However, affluence does not necessarily equate to a problem-free upbringing and adulthood. Literature on children of affluent households bring to light problems such as substance abuse, anxiety, and depression, which can afflict this demographic (Luthar, 2003). In fact, instead of linking higher socioeconomic status (SES) to increased happiness, another study of American teenagers found the opposite: those in the lowest SES category reported the highest level of happiness, and those in the highest SES category reported the lowest level of happiness (Csikszentmihalyi & Schneider, 2000).

Luthar (2003) considered that pressures to achieve and a lack of closeness among the high SES teens might account for such a result. Pittman (1985) also suggested that a comparative dimension may account for these seemingly paradoxical outcomes: in an environment where excelling is expected, anything short of exceptional is unacceptable. These explanations provide support for the present study's aim of exploring perceptions and comparisons (i.e., in this study, perceived relative financial status)—a missing dimension in the literature that could explain previously seemingly paradoxical results. That is, whether wealthy or poor by objective

measures, how a child thinks they compare financially to those around them may be what has lasting ties to psychological distress in adulthood.

Children's Perceived Relative Financial Status

Tenets of life course perspective, such as the importance of context and linked lives, point to the importance of studying the comparative dimension (Hunt, 2017). The current research applies these theoretical tenets by recognizing that perceptions, whether accurate or not, are a reality to those who hold those perceptions, and warrant exploration. Just as the child who compared laminate to granite countertops had developed a perception of her family's financial status, though arguably inaccurate by objective measures, the current study uses recalled perceived relative financial status in childhood to predict psychological distress in the form of anxiety in older adulthood.

Perceived relative financial status during childhood is conceptualized for this study as how "well off" one feels his or her family was during childhood. The idea encompasses a general judgment one makes about their family's financial status, which inherently includes a comparison to others. It is possible that the assessment is based on observed material possessions, home features, observed spending, opportunities, verbal messages from parents or others, or other experiences which influence a child to feel poor or feel rich compared to others. For this study, childhood includes ages from 6 to 16 (Waite et al., 2017), which encompasses ages which some studies classify as middle childhood, late childhood, and early adolescence (Boylan, Jennings, & Matthews, 2016; Sawyer, Azzopardi, Wickremarathne, & Patton, 2018)

Demographic Factors

Various demographic characteristics, like level of education, age, income, and net worth, have previously been found to be associated with anxiety. Lower educational attainment has

been recognized as a predictor of anxiety in adulthood (Bjelland et al., 2008). As people age, prevalence of anxiety tends to decrease (Jorm, 2000; Regier, Narrow, & Rae, 1990; Weiss Wiesel et al., 2015). Lower income levels have been connected to higher instances of internalizing symptoms such as anxiety (Baer, Kim, & Wilkenfeld, 2012; Santiago, Wadsworth & Stump, 2011). Higher net worth also has been found to be linked to lower levels of psychological distress, such as anxiety (Headey & Wooden, 2004). Demographic variables, including gender and ethnicity, have been shown to relate to anxiety, with females more likely to have anxiety disorders than men (de Beurs et al., 2000; Kelly, Tyrka, Anderson, Price, & Carpenter, 2008; McLean, Asnaani, Litz, & Hofmann, 2011; Regier, Narrow, & Rae, 1990) and Whites more likely to have anxiety than other races or ethnicities (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010).

A number of factors previously linked to anxiety or have been considered in older adulthood that could impact the relationship between recalled perceived financial status and anxiety in older adulthood will be used as control factors in the current study. For example, an association between physical health and anxiety has been established in the literature (Scott et al., 2007). Mental health factors, such as perceived stress and depression, have also been found to be strongly associated with anxiety. A higher level of perceived stress, which is the feeling that problems are "piling up too high to manage" (Payne, Hedberg, Kozloski, Dale, & McClintock, 2014), has been found to be connected to higher levels of anxiety (Kelly et al., 2008). Depression or depressive symptomology often accompanies anxiety (Beuke et al., 2003; Domschke & Dannlowski, 2010; Scott et al., 2007). While depression and anxiety are widely considered to be two distinct variables, they are also well-recognized as comorbid. (Beuke et al., 2003; Domschke & Dannlowski, 2010; Scott et al., 2007). Researchers who have studied the

complexities of these concepts have offered guidance on the interaction and measurement of these variables. A common strategy that has been identified is to statistically control for the confounding variable (Beuke et al., 2003; Ingram & Hamilton, 1999). For the present study, this recommended strategy will be applied by controlling for depression.

Two variables that are of particular interest for the older adult population, are functioning health and level of social isolation. Functioning health is conceptualized as being able to perform basic self-care activities, and is measured by the number of Activities of Daily Living (ADLs) such as dressing, bathing, and eating, that a respondent can perform without difficulty. Many studies have connected limitations in functional health with anxiety in older adulthood.

Social connectedness, or a lack of social isolation, has often been considered to be a part of successful aging (Cornwell, Laumann, & Schumm, 2008; Courtin & Knapp, 2017), The concept of perceived social isolation is of particular interest in studies of older adults, who, due to health difficulties, death of spouses or partners, increased likelihood of living alone, and a smaller inner circle of friends, are at greater risk of experiencing loneliness or isolation (Victor & Bowling, 2012). Loneliness and isolation have been associated with poor health, lower cognitive function, lower quality of life, depression, and anxiety (Courtin & Knapp, 2017; Heikkinen, & Kauppinen, 2011).

Terms such as social connectedness, social support, isolation, and loneliness have been conceptualized and operationalized in a variety of ways, and some have been used interchangeably with others. In their article on measuring social isolation among older adults, Cornwell and Waite (2009) conceptualized perceived isolation as the "subjective experience of a shortfall in one's social resources such as companionship and support." Whereas being socially disconnected may manifest as having small social networks or not interacting frequently with

others, perceived isolation points to the feeling of being isolated and lacking social support. The present study, with its emphasis on perceptions, employs Cornwell and Waite's (2009) conceptualization of perceived isolation.

Life course perspective holds that life events accumulate as risk or protective factors, and one challenge of research can be to find life course events that have an impact (McEniry, 2013). Thus, the present study controls for two major life circumstances that may act as risk or protective factors and may impact current anxiety especially for this older adult sample: stopping being employed due to retirement, disability, or other circumstances, and becoming unpartnered through divorce, separation, or death of a spouse. Some studies indicate that retirement may be a low-stress event (Bossé, Aldwin, Levenson, & Workman-Daniels, 1991), while others indicate that retirement is one of the most stressful live events (Aldwin, 1990; Holmes & Rahe, 1967) which is followed by adverse effects such as psychological distress (Sahlgren, 2013). The concept of retirement has not been consistently defined in the literature, nor has clear criteria been determined as to how study participants self-identify as retired. Some conceptualizations of retirement vary from a reduction in work hours or in pay, completely leaving the labor force, or simply becoming entitled to retirement benefits (Denton & Spencer, 2009; Jacobs, Van Houtven, Laporte, & Coyte, 2017). The present study ascribes to the conceptualization of retirement as someone who reports that they are retired and not currently working. Considering its status as a major life transition, the current study includes retirement in the model.

One's marital status may also be a risk or protective factor and may be linked to psychological distress such as anxiety. Specifically, unpartnered (single, widowed, divorced) individuals are more likely to experience mental distress such as anxiety than partnered (married, cohabited) individuals (Joung et al., 1997; Regier, Narrow, & Rae, 1990). Being "unpartnered"

can be separated further to look at differences between the unpartnered subgroups of widowed compared to those who are separated or divorced. Losing a spouse is often recognized as one of the most, if not the most, stressful major life events. Results from Holmes and Rahe's (1967) 43-item Social Readjustment Rating Scale indicated that losing a spouse was ranked as the most stressful of life events, with divorce and marital separation ranking second and third. Subsequent scales that specifically target the older adult population, such the Elders Life Stress Inventory (ELSI; Aldwin, 1990) also list the death of a spouse and divorce to be among the most stressful events.

Methods

Life course perspective, with its interdisciplinary nature, lends itself to various methodological designs (Giele & Elder, 1998). Quantitative approaches of the life course perspective allow the researcher to follow the impact of earlier events on later outcomes, which can be accomplished through a longitudinal design with data from the same person at multiple points in time, a comparison of cross sectional data, or rely on recalled perceptions to include one's earlier life history in the design (Carr & Komp, 2011). The purpose of the study is to use the latter approach by examining whether older adults' recalled perceptions of their families' relative financial status during childhood are linked to anxiety in older adulthood. This investigation requires not only current data of older adults, but also their recalled childhood perceptions. Recollections of a childhood decades prior may or may not reflect objective reality. In fact, the goal of the study is to measure individuals' perceptions of their childhood financial status, and using respondents' self-reported recalled childhood perceptions achieves that objective. Context, a key theme of life course perspective, is imbedded in the participants' response to the question of their recalled perception of family financial status.

Data

The National Social Life, Health, and Aging Project (NSHAP) data set was described in Chapter 2, and was specifically selected for this study due to the questions the survey included in the leave-behind questionnaire which directly asked about recalled perceived relative financial status. This study uses the secondary data from Wave 3, the most recent wave of the NSHAP, which was collected in 2015 and 2016 (Waite et al., 2017), and employs an ordinary least squares (OLS) regression model to examine perceived relative financial status in childhood and anxiety in older adulthood. The Wave 3 data included participants from Wave 1 and Wave 2 as well as Wave 2 respondent partners and a new cohort of adults born between 1948 and 1965. A total of 4,777 interviews were completed. Questions from both the computer-assisted personal interviews and the leave-behind questionnaire were used in this study.

Dependent Variable

Anxiety symptomology was measured by using the NSHAP Anxiety Symptoms Measure (NASM). The NASM is a modified version of the seven-item anxiety subscale of the Hospital Anxiety and Depression Scale (HADS-A; Zigmond & Snaith, 1983), which is commonly used to gauge feelings of anxiety in non-psychiatric patients and in population studies. Use of the HADS-A specifically for the older adult population has also been tested and supported. The scale has been shown to have reliability and validity. In a review of 747 studies that included the HADS-A, the mean Cronbach's alpha was .83, with the overall range varying from .67 to .90 (Bjelland, Dahl, Haug, & Neckelmann, 2002). In their psychometric evaluation of the HADS scale on a general population of individuals aged 65 to 80, Djukanovic, Carlsson, & Årestedt (2017) found that the data supported recommending use of the HADS scale to assess

psychological distress for this older adult population. An analysis of the internal reliability for the sample in the present study showed a Cronbach's alpha of .74.

The NASM utilizes the same seven items as the HADS-A, but with two modifications: (a) the prompts are stated in the past tense instead of the present tense (Zigmond & Snaith, 1983), and (b) the wording of the response categories were modified to match the phrasing of response categories for other mental health measures in the survey (Payne et al., 2014). Respondents were asked to react to how often they felt each of the following seven items in the past week: (a) I felt tense or "wound up," (b) I got a frightened feeling as if something awful was about to happen, (c) Worrying thoughts went through my mind, (d) I could sit at ease and feel relaxed, (e) I got a frightened feeling like butterflies in my stomach, (f) I felt restless as if I had to be on the move, and (g) I had a sudden feeling of panic. The response categories included 1 (*rarely or none of the time*), 2 (*some of the time*), 3 (*occasionally*), and 4 (*most of the time*). Item 4 was reversed coded to match the direction of the scale. The sum of scores ranged from 7 to 28, with the higher total indicating higher levels of anxiety.

Independent Variables

Perceived relative financial status during childhood. Perceived relative financial status during childhood is defined as how well off one feels his or her family was from age 6 to 16. The current study assessed the perceived relative financial status that a respondent had of their family during their formative years of youth. Instead of relying on numerical financial data such as income and assets, the nature of the present inquiry – particularly, the perception of one's relative financial status during childhood – called for a respondent's own appraisal of this recalled impression. The NSHAP data set was specifically selected due to the question the survey included in the leave-behind questionnaire which directly asked about recalled perceived

relative financial status: “During the time from about age 6 to age 16, would you say your family was very well off financially, fairly well off, about average, not so well off, or not well off at all?” The single-item, Likert-type measure collected responses, ranging from 1 (*not well off at all*) to 5 (*very well off*).

Demographic variables. A variety of variables that have been shown to be influential in levels of anxiety that are interwoven with life course perspective were included. Education, household income, net worth, gender, and ethnicity are used as controls. Wave 3 of the NSHAP collected this demographic information in the same manner as Wave 2, and these variables will be grouped for the current study in the same manner as described in Chapter 2. Other variables that have been shown to be connected to anxiety, such as self-rated physical health, depressive symptoms, and perceived stress, were included as control variables in the model. Self-rated physical health and depressive symptoms were measured as described in Chapter 2.

The NSHAP’s Perceived Stress measure (NPSM) was used to assess participant’s level of perceived stress. The NPSM was created based on the 4-item short version of the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). In order to assess perceived stress in older adults’ daily lives, the NPSM asked respondents to evaluate how often during the past week they felt the following: (a) I was unable to control important things in my life, (b) I felt confident about my ability to handle personal problems, (c) I felt that things were going my way, and (d) I felt that difficulties were piling up so high I could not overcome them. Responses ranged from 1 (*rarely or none of the time*) to 4 (*much or most of the time*). Items (2) and (3) were reverse coded, and the possible total score ranges from 4 to 16.

Perceived isolation was measured using the nine-item perceived isolation scale developed by Cornwell and Waite (2009). The scale utilizes questions from the NSHAP that assess feelings of loneliness and feelings of a lack of social support. The scale developers initially chose 10 questions to include in the scale based on content validity, retained 9 items that maximized internal consistency, and performed confirmatory factor analysis. Three of the questions centered on loneliness, and asked respondents to report the frequency of feelings of (a) a lack of companionship, (b) being left out, and (c) being isolated from others. Six questions centered on perceived social support, and asked respondents to report the frequency of (a) opening up to your family members, (b) opening up to your friends, (c) opening up to your spouse/partner, (d) relying on your family member, (e) relying on your friends, and (f) relying on your spouse/partner. Responses ranged from 1 (*never*) to 3 (*often*). Scores for the six perceived social support questions were reverse coded in order to match the direction of the scale. Scale scores were then standardized as performed by the scale developers. Positive scores reflect above-average feelings of isolation, and negative scores reflect below-average feelings of isolation. Analysis of the 9-item scale showed internal consistency (Cronbach's alpha) of .71.

In recognition of the potentially important life experience of exiting the workforce, job status was included in the model. Job status was divided into four mutually exclusive categories: (a) currently working, (b) retired and not currently working, (c) disabled and not currently working or retired, and (d) other (homemaker, unemployed, other). Similarly, in order to recognize the potential importance of marital status on anxiety, partnered status was measured in four distinct categories: (a) partnered which includes married and cohabitating couples (b) separated or divorced, (c) widowed, and (d) never married.

Functional health was operationalized using seven ADLs. Respondents self-reported on their level of difficulty performing the following seven activities: dressing, bathing/showering, eating, transferring (getting in/out of bed), using the toilet, walking across a room, and walking one block. Functional health was scored by adding only those ADLs that respondents reported being able to complete without any difficulty. To help ensure that long-term rather than short-term difficulties were reported, respondents were asked to only include difficulties that were expected to last more than three months. Scores range from 0 to 7, with higher scores representing the ability to complete more ADLs without any difficulty.

Data Analysis

Statistical analyses were carried out using STATA, version 14.2 (StataCorp, 2015) statistical software. Considering the continuous nature of the dependent variable, anxiety, an OLS regression model was used to analyze the relationship between perceived relative financial status during childhood and anxiety in older adulthood. If considering the independent variable to be continuous in nature, an OLS regression model provides the needed analysis and interpretable results.

After executing the preliminary OLS, the variables in the model were tested for possible multicollinearity issues using Variance Inflation Factor (VIF). No issues were found with collinearity (all VIF < 1.8). All correlation coefficients (see Appendix B) were below the generally accepted upper limit of .80 (Berry & Feldman, 1985). Data was also checked using the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, which was found to occur ($p < .05$). Thus, the analysis used robust regression (in STATA, vce(robust) parameter) to minimize the impact of heteroskedasticity.

The regression analysis was performed on a complete case analysis basis and used respondent-level weights provided by the data set which incorporate a nonresponse adjustment based on age and urbanicity. It was anticipated that the lower the perceived relative financial status during childhood, the higher the level of anxiety in older adults.

Results

Descriptive Statistics

Results from the descriptive statistics are presented in Tables 3.1 and 3.2. The final sample of 1,475 included more women (53%) than men (47%), and a majority (70%) of participants identified themselves as White. Over half (69%) had at least some college or more, and almost half (45%) reported a net worth of $500,000 or more. A majority of the sample was married or cohabitating (73%), and approximately 57% of the sample reported that they were currently working, with 21% reporting that they were retired and not working. Household income was relatively evenly distributed among the four groups. The income category with the highest frequency of participants was the over $100,000 category which accounted for 31% of the sample, followed by those in the $50,000 to $99,999 bracket, which accounted for 29% of the sample.

Table 3.1 Sample Characteristics of Categorical Variables (N = 1,475)

Variables	n	%
Gender		
Male	690	47%
Female	785	53%
Race/Ethnicity		
White	1,034	70%
Black, Hispanic, or Other	441	30%

Table 3.1 (continued)

Variables	n	%
Education Level		
High School or less	464	31%
Some College or Vocational	557	38%
Bachelors or More	454	31%
Income		
Less than $25,000	288	20%
$25,000-$49,999	304	21%
$50,000-$99,999	422	29%
$100,000 and above	461	31%
Net Worth		
Less than $10,000	196	13%
$10,000 - $49,999	125	8%
$50,000 - $99,999	85	6%
$100,000 - $499,999	400	27%
$500,000 or more	669	45%
Marital Status		
Married/Cohabiting	1,070	73%
Separated/Divorced	237	16%
Widowed	62	4%
Never Married	106	7%
Job Status		
Currently Working	844	57%
Retired (and not working)	315	21%
Disabled (and not working or retired)	164	11%
Other (homemaker, unemployed, other)	152	10%

Table 3.2 Sample Characteristics of Scales and Continuous Variables (N = 1,475)

Variable	M	SD	Min	Max
Anxiety	11.71	3.93	7.00	28.00
Recalled Family Financial Status	2.68	.93	1.00	5.00
Physical Health (self-assessed)	3.30	1.02	1.00	5.00
Functional Health (ADLs)	6.40	1.37	0.00	7.00
Depressive Symptoms	14.00	4.66	9.00	36.00
Perceived Stress	6.61	2.57	4.00	16.00
Age	59.08	5.94	50.00	97.00
Perceived Isolation (standardized)	.81	.50	0.00	2.71

OLS Regression Results

A summary of the OLS regression model results using recalled perceptions of family relative financial status during childhood as the key predictor variable is provided in Table 3.3. The study's regression model results for recalled relative family financial status during childhood and anxiety produced an R-squared of .43, (F [24, 1,450] = 33.72, p =.00), indicating that 43% of the variance in anxiety was explained by the variables in the model. In the model, recalled family financial status during childhood was not a significant predictor of anxiety in older adulthood. Depressive symptoms and perceived stress were both positive predictors of anxiety in this model. For every point increase in depression, anxiety is expected to increase by 25%, and a point increase in perceived stress predicted a 63% increase in anxiety. As perceived isolation increases (b = .85, p < .001), anxiety also increases. The standardized regression coefficients indicate that increases in perceived stress, depressive symptomology, and perceived isolation were the most influential predictors of an increase in anxiety in older adults. Age was also significant (b = -.06, p < .01), with an increase in age predicting a decrease in anxiety.

Also identified as significant negative predictors of anxiety in comparison to their reference group were two marital status categories. All else equal, those who are separated or divorced (b = -.62, p < .05), as well as those that had never been married (b = -.72, p < .05), have a lower level of anxiety than those who were married or cohabitating.

Physical and functional health were not statistically significant, nor were the various job status categories. Demographics (e.g., education, net worth, income, and gender) were also not significant.

Table 3.3 Ordinary Least Squares Regression Analysis for Variables Predicting Anxiety (N = 1,475)

Independent Variable	*b*	β	*Robust SE*	*95% CI Lower*	*95% CI Upper*
Recalled relative family financial status in childhood	.060	.0134	.09	-.13	.24
Physical health (self-assessed)	-.002	-.0004	.10	-.20	.20
Functional health (ADLs)	.031	.0104	.08	-.13	.20
Depressive symptoms	.247***	.2879	.02	.20	.29
Perceived stress	.635***	.4139	.05	.55	.72
Age	-.057**	-.0779	.02	-.09	-.02
Perceived isolation (standardized)	.836***	.1051	.21	.42	1.25
Marital status					
Married or cohabitating (reference)	-	-	-	-	-
Separated or divorced	-.587*	-.0556	.25	-1.07	-.10
Widowed	-.324	-.0163	.39	-1.09	.44
Never married	-.682*	-.0435	.31	-1.29	-.08
Job status					
Currently working (reference)	-	-	-	-	-
Retired and not working	.011	.0011	.26	-.49	.51
Disabled and not working or retired	-.011	-.0009	.36	-.72	.69
Other (homemaker, unemployed, other)	.164	.0125	.31	-.44	.77
Gender					
Male (reference)	-	-	-	-	-
Female	.160	.0203	.17	-.18	.50
Income					
Less than $25,000 (reference)	-	-	-	-	-
$25,000-$49,999	.222	.0221	.31	-.39	.83
$50,000-$99,999	.437	.0501	.30	-.16	1.03
$100,000 and above	.416	.0506	.33	-.23	1.06
Education level					
High school or less (reference)	-	-	-	-	-
Some college or vocational	-.285	-.0353	.22	-.72	.15
Bachelors or more	-.155	-.0186	.24	-.62	.31
Net worth					
Less than $10,000	-	-	-	-	-
$10,000 - $49,999	.006	.0004	.40	-.78	.79
$50,000 - $99,999	-.365	-.0210	.41	-1.17	.44
$100,000 - $499,999	.075	.0086	.34	-.59	.74
$500,000 or more	.150	.0191	.33	-.49	.79

Table 3.3 (continued)

Independent Variable	b	β	Robust SE	95% CI Lower	95% CI Upper
Race					
White (reference)	-	-	-	-	-
Black, Hispanic, or Other	-.103	-.0111	.20	-.49	.28

[t] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

Though the study's regression model results for recalled relative family financial status during childhood and anxiety showed an overall high explanatory value for the variance in anxiety, the key independent variable, recalled family financial status during childhood, was not a significant predictor of anxiety in older adulthood. Without statistically significant results between the key independent and dependent variables, the study did not add support for a connection between the two. The high explanatory value of the model, however, is congruent with literature that has shown a relationship between depressive symptoms, perceived stress, perceived isolation and anxiety. The study's results also supported previous evidence that as people age, anxiety tends to decrease (Jorm, 2000; Regier, Narrow, & Rae, 1990; Weiss Wiesel et al., 2015).

It was anticipated that unpartnered (single, widowed, divorced) individuals would exhibit higher anxiety than partnered (married, cohabited) individuals (Joung et al., 1997; Regier, Narrow, & Rae, 1990), especially since separation, divorce, and the death of a spouse have been rated as some of the most stressful of life events (Aldwin, 1990; Holmes & Rahe, 1967), yet this study's results differed from this prediction. Those who were separated, divorced, or never married had a lower rather than higher level of anxiety than those who were married or cohabitating, and no significant relationship was found between widowhood and anxiety.

Other anticipated connections, such as those between physical and functional health and anxiety in older adults, were not found to have a statistically significant association. Also absent from the findings was statistical support of a connection between job status and anxiety and between financial variables such as net worth and income and the outcome variable, anxiety in older adults.

Implications

The findings do not support a connection between recalled relative family financial status during childhood and anxiety in older adults. The results do confirm the anticipated relationship between depression and anxiety and between stress and anxiety. The directional relationships between perceived isolation and anxiety is also congruent with predictions. These statistical results could indicate that mental health variables such as stress, depression, and social isolation have influence on older adults' level of anxiety. Another possible explanation that should not be ignored is that the respondent's affect at the time of the survey influenced answers in all of these categories.

The direction of the relationship found between two of the marital status categories and anxiety in older adults was not predicted. In the model, those who were divorced or separated, as well as those who had never been married, both were shown to predict lower instead of higher levels of anxiety than the reference group of married or cohabitating. One possible explanation would be if either marital strain or spousal anxiety is linked to one's own anxiety. In a study of older married adults' anxiety symptoms, Stokes (2015) found bidirectional connections in which one spouse's anxiety symptoms were significantly related to the other's. The researcher (Stokes, 2015) also found evidence that marital strain was connected to each spouse's anxiety symptoms. Findings suggested that anxiety in one spouse could be an emotional contagion to the other, and

that marital strain was also related to individual anxiety. If either or both of these mechanisms occurred in the NSHAP study's older adult participants, it could account for the single marital status categories, whether it be through divorce and separation or never married, showing lower levels of anxiety than the partnered reference group in the current study.

None of the various job categories showed a statistically significant relationship with anxiety, providing no evidence that one category of particular interest for this age group, retirement, predicts either higher or lower anxiety. One possible explanation for a major life condition such as employment status not predicting anxiety could lie in the concept of threat cognitions and past temporal orientation of anxiety. Anxiety is marked by the worry of potential future threats (Eysenck & Fajkowska, 2018), yet employment status as measured for the current study reflects a current employment condition, rather than the threat of nor the reduction of an upcoming loss.

Other anticipated connections, such as that between either physical or functional health and anxiety, or between net worth or income and anxiety also failed to show a statistically significant association. For health, the current study measured both self-reported health and functional health based on ability to complete seven activities of daily living, whereas literature linking health to anxiety (Scott et al., 2007) used self-reports of specific physical conditions, where it was found that chronic pain showed the strongest association with anxiety—a construct that self-reported physical health and functional health in the current study do not capture. The differences in the measurements can be illustrated by considering respondents with chronic headaches, a condition that has been linked to anxiety (Scott et al., 2007); in the current study, such individuals might have rated themselves high for overall physical health and, able to complete all 7 ADLs, would have high functional health scores as well.

A connection between finances and anxiety was anticipated due to previous literature that shows a link between lack of resources (Wilkenfeld, 2012) and low income (Baer, Kim, and Wilkenfeld, 2012; Wadsworth & Stump, 2011) and anxiety () and between credit card debt and anxiety (Drentea, 2000). The financial measures in the current study, income and net worth, are different financial concepts from poverty and debt, and the target age group, older adults, is a different life stage than the wider age groups included in the previously discussed literature. While poverty may be tied to anxiety, it is possible that once income or assets are at a level that allows older adults to meet basic needs, increases in these measures of objective financial means do not have a direct link to anxiety. With 80% of this older adult sample having income above poverty levels for a household of up to four, and 70% having a net worth of $100,000 or more, the financial resources of the respondents may act as a protection against anxiety for these older adults. Similarly, while debt may be linked to anxiety, such details on household finances are hidden by a measure such as net worth. Finally, the focus on the older adult age group may contribute to the lack of a statistical connection in the study between income, net worth, and anxiety.

Even if statistically significant support had been found between recalled family financial status and anxiety in older adulthood, such support would not mean that a poverty-perceived childhood necessarily dictates such emotional distress in older adulthood. Perhaps the lack of support for the hypothesis allows the opening that emotional quality of life in adulthood and older age does not necessarily have to be elusive to those who grew up perceiving themselves to be economically disadvantaged. For example, a study of individuals' quality of life in early old age (65-75 years old) found that, while childhood circumstances were connected to participants' quality of life in early old age, participants' current material disadvantage and health problems

were stronger influencers (Blane, Higgs, Hyde, & Wiggins, 2004). Early life is recognized as a critical period, but life course perspective does not ignore that other life experiences play a role in adult outcomes as well. Identifying and assessing such experiences continues to pose a challenge in research.

Limitations

The study's reliance on a respondent's recollection of their family's relative financial standing during childhood presents a potential limitation. The span of decades between the collection of data and the respondents' childhoods opens the door to recall bias, in which respondents may have incomplete or inaccurate recollections of their childhood perceptions. The model is also constrained by the limitations of the data to measure other protective and risk factors that may accumulate through the life course. Without such measures, it may miss capturing the full robustness of life course perspective. The model also does not address how recently participants experienced changes in important life course events such as marital status or job status. Perhaps recency of life events would make a difference in strength of their possible connection to anxiety. Other limitations that span the three studies are discussed in Chapter 5.

Future Directions

The possibility remains that how children perceive their family's financial status might matter to their development and have influences well into the future. This possibility, along with the life course perspective principle that childhood is a critical period, provides a basis for future study. How perceptions of family financial status are formed, whether it be from a parent, peers, or other observations, has yet to be definitively answered. Qualitative research design may help uncover how such perceptions are formed and how childhood perceptions might impact well-being in older adulthood. While many ideas, opinions, and advice givers exist on how to talk

about finances with children, determining beneficial ways to communicate about financial status and family finances in general during the critical period of childhood through empirical inquiry is needed. With findings from future research, perhaps parents will have a roadmap of how to address the childhood ponderings of "Are we poor?" in a way that benefits the child for a lifetime. Further study in the determinants of older adult emotional health would also have the potential of helping to determine and develop interventions as early as childhood.

Future study might also look at other potential outcomes of perceived financial status in childhood. For example, the outcomes studied could be expanded to include other measures of well-being and financial behaviors that could range from saving and spending habits to charitable giving behavior in older adulthood.

References

Aldwin, C. M. (1990). The elders life stress inventory: Egocentric and nonegocentric stress. In M. A. Stephens, J. H. Crowther, S. E. Hobfoll, & D. L. Tennenbaum (Eds.), *Stress and coping in later-life families* (pp. 49–69). New York: Hemisphere.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, *256*(3), 174–186. https://doi.org/10.1007/s00406-005-0624-4

Asnaani, A., Richey, J. A., Dimaite, R., Hinton, D. E., & Hofmann, S. G. (2010). A cross-ethnic comparison of lifetime prevalence rates of anxiety disorders. *The Journal of Nervous and Mental Disease*, *198*(8), 551–555. https://doi.org/10.1097/NMD.0b013e3181ea169f.

Baer, J. C., Kim, M., & Wilkenfeld, B. (2012). Is it generalized anxiety disorder or poverty? An examination of poor mothers and their children. *Child and Adolescent Social Work Journal*, *29*(4), 345–355. https://doi.org/10.1007/s10560-012-0263-3

Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21st century. *Dialogues in Clinical Neuroscience*, *17*(3), 327–335.

Ben-Shlomo, Y., & Kuh, D. (2002). A life course approach to chronic disease epidemiology: Conceptual models, empirical challenges and interdisciplinary perspectives. *International Journal of Epidemiology*, 31(2), 285–293. https://doi.org/10.1093/ije/31.2.285

Bengtson, V. L., & Allen, K. R. (1993). "The Life Course Perspective Applied to Families over Time. In P. Boss, W. Doherty, R. LaRossa, W. Schumm, and S. Steinmetz (Eds.),

Sourcebook of Family Theories and Methods: A Contextual Approach (pp. 469–498). New York, NY: Plenum. https://doi.org/10.1007/978-0-387-85764-0_19

Beuke, C. J., Fischer, R., & McDowall, J. (2003). Anxiety and depression: Why and how to measure their separate effects. *Clinical Psychology Review, 23*(6), 831–848. https://doi.org/10.1016/S0272-7358(03)00074-6

Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*, *52*(2), 69–77. https://doi.org/10.1016/S0022-3999(01)00296-3

Bjelland, I., Krokstad, S., Mykletun, A., Dahl, A. A., Tell, G. S., & Tambs, K. (2008). Does a higher educational level protect against anxiety and depression? The HUNT study. *Social Science & Medicine*, *66*(6), 1334–1345. https://doi.org/10.1016/j.socscimed.2007.12.019

Bortz, D. (2012, November). How parents should talk to their kids about family finances. U.S. News & World Report. Retrieved from https://money.usnews.com/money/personal-finance/articles/2012/11/01/how-parents-shouldand-shouldnttalk-to-their-kids-about-the-familys-finances

Bossé, R., Aldwin, C. M., Levenson, M. R., & Workman-Daniels, K. (1991). How stressful is retirement? Findings from the Normative Aging Study. *Journal of Gerontology*, *46*(1), 9–14. https://doi.org/10.1093/geronj/46.1.P9

Boylan, J. M., Jennings, J. R., & Matthews, K. A. (2016). Childhood socioeconomic status and cardiovascular reactivity and recovery among Black and White men: Mitigating effects of psychological resources. *Health Psychology*, *35*(9), 957–966. https://doi.org/10.1037/hea0000355

Brooks-Gunn, J., & Duncan, G. (1997). The Effects of Poverty on Children. *The Future of Children, 7*(2), 55–71. https://doi.org/10.2307/1602387

Carr, D. C., & Komp, K. S. (2011). *Gerontology in the era of the third age: Implications and next steps*. New York, NY: Springer.

Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, *82*(2), 217–225. https://doi.org/10.1016/j.jad.2003.12.013

Choi, N. G., DiNitto, D. M., Marti, C. N., & Choi, B. Y. (2017). Association of adverse childhood experiences with lifetime mental and substance use disorders among men and women aged 50+ years. *International Psychogeriatrics*, *29*(3), 359–372.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. 10.2307/2136404

Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, *73*(2), 185–203. https://doi.org/10.1177/000312240807300201

Cornwell, E. Y., & Waite, L. J. (2009). Measuring social isolation among older adults using multiple indicators from the NSHAP study. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *64*(suppl_1), i38–i46. https://doi.org/10.1093/geronb/gbp037

Courtin, E., & Knapp, M. (2017). Social isolation, loneliness and health in old age: A scoping review. *Health & Social Care in the Community*, *25*(3), 799–812. https://doi.org/10.1111/hsc.12311

Csikszentmihalyi, M., & Schneider, B. (2000). Becoming adult: How teenagers prepare for the world of work. New York, NY: Basic Books.

de Beurs, E., Beekman, A. T. F., Van Balkom, A. J. L. M., Deeg, D. J. H., & Van Tilburg, W. (1999). Consequences of anxiety in older persons: Its effect on disability, well-being and use of health services. *Psychological Medicine*, *29*(3), 583–593. https://doi.org/10.1017/S0033291799008351

Denton, F. T., & Spencer, B. G. (2009). What is retirement? A review and assessment of alternative concepts and measures. *Canadian Journal on Aging/La Revue Canadienne du Vieillissement*, *28*(1), 63–76. https://doi.org/10.1017/S0714980809090047

Djukanovic, I., Carlsson, J., & Årestedt, K. (2017). Is the hospital anxiety and depression scale (HADS) a valid measure in a general population 65–80 years old? A psychometric evaluation study. *Health and Quality of Life Outcomes*, *15*(1), 193–203. https://doi.org/10.1186/s12955-017-0759-9

Domschke, K., & Dannlowski, U. (2010). Imaging genetics of anxiety disorders. *Neuroimage, 53*(3), 822–831. https://doi.org/10.1016/j.neuroimage.2009.11.042

Drentea, P. (2000). Age, debt and anxiety. *Journal of Health and Social Behavior*, *41*(4), 437–450. https://doi.org/10.2307/2676296

Dube, S. R., Anda, R. F., Felitti, V. J., Chapman, D. P., Williamson, D. F., & Giles, W. H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: Findings from the Adverse Childhood Experiences Study. *Journal of the American Medical Association*, *286*(24), 3089–3096. https://doi.org/10.1001/jama.286.24.3089

Dube, S. R., Felitti, V. J., Dong, M., Chapman, D. P., Giles, W. H., & Anda, R. F. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: The adverse childhood experiences study. *Pediatrics*, *111*(3), 564–572. https://doi.org/10.1542/peds.111.3.564

Duncan, G. J., Magnuson, K., Kalil, A., & Ziol-Guest, K. (2012). The importance of early childhood poverty. *Social Indicators Research*, *108*(1), 87–98. https://doi.org/10.1007/s11205-011-9867-9

Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In *Nations and households in economic growth* (pp. 89–125). New York, NY: Academic Press. https://doi.org/10.1016/B978-0-12-205050-3.50008-7

Easterlin, R. A. (1995). Will raising the incomes of all increase the happiness of all? *Journal of Economic Behavior & Organization*, *27*(1), 35–47. https://doi.org/10.1016/0167-2681(95)00003-B

Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The Economic Journal*, *111*(473), 465–484. https://doi.org/10.1111/1468-0297.00646

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry*, *160*(8), 1453–1460. https://doi.org/10.1176/appi.ajp.160.8.1453

Elder, G. H. (1975). Age differentiation and the life course. *Annual Review of Sociology* 1, 165–190. https://doi.org/10.1146/annurev.so.01.080175.001121

Elder, G. H., Jr. (1985). *Life Course Dynamics.* Ithaca, NY: Cornell University Press.

Elder, G. H., Jr. (1998). The life course as developmental theory. *Child Development*, *69*(1), 1–12. https://doi.org/10.2307/1132065

Elder, G. H., Jr., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. Mortimer & M. Shanahan (Ed.), *Handbook of the life course* (pp. 3–19). New York, NY: Springer.

Eysenck, M. W., & Fajkowska, M. (2018). Anxiety and depression: toward overlapping and distinctive features. *Cognition and Emotion, 32*(7), 1391-1400. https://doi.org/10.1080/02699931.2017.1330255

Fan, A. P., & Eaton, W. W. (2001). Longitudinal study assessing the joint effects of socio-economic status and birth risks on adult emotional and nervous conditions. *The British Journal of Psychiatry*, *178*(40), s78–s83. https://doi.org/10.1192/bjp.178.40.s78

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245–258. https://doi.org/10.1016/s0749-3797(98)00017-8

Forrest, C. B., & Riley, A. W. (2004). Childhood origins of adult health: A basis for life-course health policy. *Health Affairs*, *23*(5), 155–164. https://doi.org/10.1377/hlthaff.23.5.155

Giele, J. Z., & Elder, G. H., Jr. (1998). *Methods of life course research: Qualitative and quantitative approaches.* Thousand Oaks, CA: Sage.

Gilman, S. E., Kawachi, I., Fitzmaurice, G. M., & Buka, S. L. (2002). Socioeconomic status in childhood and the lifetime risk of major depression. *International Journal of Epidemiology*, *31*(2), 359–367. https://doi.org/10.1093/ije/31.2.359

Headey, B., & Wooden, M. (2004). The effects of wealth and income on subjective well-being and ill-being. *Economic Record*, *80*(s1), S23–S33. https://doi.org/10.1111/j.1475-4932.2004.00181.x

Heikkinen, R. L., & Kauppinen, M. (2011). Mental well-being: A 16-year follow-up among older residents in Jyväskylä. *Archives of Gerontology and Geriatrics*, *52*(1), 33–39. https://doi.org/10.1016/j.archger.2010.01.017

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213–218. https://doi.org/10.1016/0022-3999(67)90010-4

Hunt, S. J. (2017). *The life course: A sociological introduction*. London: Palgrave Macmillan.

Ingram, R. E., & Hamilton, N. A. (1999). Evaluating precision in the social psychological assessment of depression: Methodological considerations, issues, and recommendations. *Journal of Social and Clinical Psychology, 18*(2), 160–180. https://doi.org/10.1521/jscp.1999.18.2.160

Jacobs, J. C., Van Houtven, C. H., Laporte, A., & Coyte, P. C. (2017). The impact of informal caregiving intensity on women's retirement in the United States. *Journal of Population Ageing*, *10*(2), 159–180. https://doi.org/10.1007/s12062-016-9154-2

Jorm, A. F. (2000). Does old age reduce the risk of anxiety and depression? A review of epidemiological studies across the adult life span. *Psychological Medicine*, *30*(1), 11–22. https://doi.org/10.1017/S0033291799001452

Joung, I. M., Stronks, K., Van De Mheen, H., van Poppel, F. W., Van der Meer, J. B. W., & Mackenbach, J. P. (1997). The contribution of intermediary factors to marital status differences in self-reported health. *Journal of Marriage and the Family*, 476–490. https://doi.org/10.2307/353484

Kelly, M. M., Tyrka, A. R., Anderson, G. M., Price, L. H., & Carpenter, L. L. (2008). Sex differences in emotional and physiological responses to the Trier Social Stress Test. *Journal of Behavior Therapy and Experimental Psychiatry*, *39*(1), 87–98. https://doi.org/10.1016/j.jbtep.2007.02.003

Komp, K., & Johansson, S. (2016). Population ageing in a lifecourse perspective: Developing a conceptual framework. *Ageing & Society*, *36*(9), 1937–1960. https://doi.org/10.1017/S0144686X15000756

Kuh, D., Ben-Shlomo, Y., Lynch, J., Hallqvist, J., & Power, C. (2003). Life course epidemiology. *Journal of Epidemiology & Community Health*, *57*(10), 778–783. https://doi.org/10.1136/jech.57.10.778

Luthar, S. S. (2003). The Culture of Affluence: Psychological Costs of Material Wealth. *Child Development*, *74*(6), 1581–1593. https://doi.org/10.1046/j.1467-8624.2003.00625.x

Lynch, J. W., Kaplan, G. A., & Shema, S. J. (1997). Cumulative impact of sustained economic hardship on physical, cognitive, psychological, and social functioning. *New England Journal of Medicine*, *337*(26), 1889–1895. https://doi.org/10.1056/NEJM199712253372606

Marshall, V. W., & Mueller, M. M. (2003). Theoretical roots of the life-course perspective. In W. Heinz & V. Marshall (Ed.), *Social dynamics of the life course* (pp. 3–32), New York: Aldine DeGruyter.

McEniry, M. (2013). Early-life conditions and older adult health in low-and middle-income countries: A review. *Journal of Developmental Origins of Health and Disease, 4*(1), 10–29. https://doi.org/10.1017/S2040174412000499

McLaughlin, K. A., Costello, E. J., Leblanc, W., Sampson, N. A., & Kessler, R. C. (2012). Socioeconomic status and adolescent mental disorders. *American Journal of Public Health*, *102*(9), 1742–1750.

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research*, *45*(8), 1027–1035. https://doi.org/10.1016/j.jpsychires.2011.03.006

Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse & Neglect*, *69*, 10–19. https://doi.org/10.1016/j.chiabu.2017.03.016

Myers, D. G. (2001). *The American paradox: Spiritual hunger in an age of plenty*. New Haven, CT: Yale University Press.

O'Rand, A. M. (1996). The precious and the precocious: Understanding cumulative disadvantage and cumulative advantage over the life course. *The Gerontologist*, *36*(2), 230–238. https://doi.org/10.1093/geront/36.2.230

Ochi, M., Fujiwara, T., Mizuki, R., & Kawakami, N. (2014). Association of socioeconomic status in childhood with major depression and generalized anxiety disorder: results from the World Mental Health Japan survey 2002–2006. *BMC Public Health*, *14*(1), 359–375. https://doi.org/10.1186/1471-2458-14-359

Orr, E., & Dinur, B. (1995). Actual and perceived parental social status: Effects on adolescent self-concept. *Adolescence*, *30*(119), 603–616.

Ostir, G. V., & Goodwin, J. S. (2006). High anxiety is associated with an increased risk of death in an older tri-ethnic population. *Journal of Clinical Epidemiology*, *59*(5), 534–540. https://doi.org/10.1016/j.jclinepi.2005.10.008

Payne, C., Hedberg, E. C., Kozloski, M., Dale, W., & McClintock, M. K. (2014). Using and interpreting mental health measures in the National Social Life, Health, and Aging Project. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *69*(Suppl_2), S99–S116. https://doi.org/10.1093/geronb/gbu100

Pittman, F. S. (1985). Children of the rich. *Family Process*, *24*(4), 461–472. https://doi.org/10.1111/j.1545-5300.1985.00461.x

Regier, D. A., Narrow, W. E., & Rae, D. S. (1990). The epidemiology of anxiety disorders: The epidemiologic catchment area (ECA) experience. *Journal of Psychiatric Research*, *24*, 3–14. https://doi.org/10.1016/0022-3956(90)90031-K

Rivenbark, J., Arseneault, L., Caspi, A., Danese, A., Fisher, H. L., Moffitt, T. E., Rasmussen, L.J., Russell, M.A., & Odgers, C. L. (2020). Adolescents' perceptions of family social status correlate with health and life chances: A twin difference longitudinal cohort study. *Proceedings of the National Academy of Sciences of the United States of America.* https://doi.org/*10.1073/pnas.1820845116*

Sahlgren, G. (2013). Work longer, live healthier: The relationship between economic activity, health, and government policy. (IEA Discussion Paper No. 46). Retrieved from https://iea.org.uk/in-the-media/press-release/retirement-causes-a-major-decline-in-physical-and-mental-health-new-resea

Santiago, C. D., Wadsworth, M. E., & Stump, J. (2011). Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families. *Journal of Economic Psychology*, *32*(2), 218–230. https://doi.org/10.1016/j.joep.2009.10.008

Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health*, *2*(3), 223–228. https://doi.org/10.1016/S2352-4642(18)30022-1

Scott, K. M., Bruffaerts, R., Tsang, A., Ormel, J., Alonso, J., Angermeyer, M. C., ... & Gasquet, I. (2007). Depression–anxiety relationships with chronic physical conditions: Results from the World Mental Health Surveys. *Journal of Affective Disorders*, *103*(1–3), 113–120. https://doi.org/10.1016/j.jad.2007.01.015

Shonkoff, J. P., Boyce, W. T., & McEwen, B. S. (2009). Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *Journal of the American Medical Association*, *301*(21), 2252–2259. https://doi.org/10.1001/jama.2009.754

StataCorp (2015). Statistical Software: Release 14. College Station, TX: StataCorp LP.

Stokes, J. E. (2015). Mutual influence and older married adults' anxiety symptoms: Results from the Irish longitudinal study on ageing. *The Gerontologist*, *57*(3), 529–539. https://doi.org/10.1093/geront/gnv147

Umberson, D., Williams, K., Thomas, P. A., Liu, H., & Thomeer, M. B. (2014). Race, gender, and chains of disadvantage childhood adversity, social relationships, and health. *Journal of Health and Social Behavior*, *55*(1), 20–38. https://doi.org/10.1177%2F0022146514521426

Victor, C. R., & Bowling, A. (2012). A longitudinal analysis of loneliness among older people in Great Britain. *The Journal of Psychology*, *146*(3), 313–331. https://doi.org/10.1080/00223980.2011.609572

Waite, L. J., Cagney, K., Dale, W., Hawkley, L., Huang, E., Lauderdale, D., Laumann, E. O., McClintock, M., O'Muircheartaigh, C.A., & Schumm, L.P. (2017). *National Social Life, Health and Aging Project (NSHAP): Wave 3* [Data file and code book]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Weiss Wiesel, T. R., Nelson, C. J., Tew, W. P., Hardt, M., Mohile, S. G., Owusu, C., … Hurria, A. (2015). The relationship between age, anxiety, and depression in older adults with cancer. *Psycho-Oncology*, *24*(6), 712–717. http://doi.org/10.1002/pon.3638

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, *67*(6), 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

Chapter 4 - Are Changes in Perceived Relative Income Related to Changes in Depressive Symptomology?

Introduction

Many successful Hollywood movie scripts are founded on a classic rags-to-riches story or depict the upward mobility of the American dream. What such stories do not consider, however, is what happens when people improve their own financial situations, but perceive that it has not kept pace with the financial advancement of those around them. For example, when an employee gets a raise, on the surface it is a measurable financial improvement. But, if her co-workers, who were hired at the same time as she was, get even bigger raises and promotions, would the employee escape feelings of disappointment? Objectively, the raise represents a financial gain, but in the context of comparisons, may feel akin to a loss. Similarly, a measurable financial loss over time may in fact feel like a fortunate outcome when comparing oneself to peers who lost even more. These comparisons of oneself to others over time could continue into retirement ages and such relative losses and gains could be tied to a well-being outcome such as depressive symptomology in older adults.

Longer life expectancies mean that the American population is aging (Vespa, 2018). In just 10 years, by 2030, older adults will make up over 20% of the American population, up from 15% as recently as 2018. Those aged 85 and older is expected to swell in the next decades. Considering the increasing life expectancy, looking into factors that may be a part of successful aging is more important than ever. For the financial planning profession, older adults already make up a large portion of financial planning clients (Schiavo, 2019). Helping such clients by recognizing and mitigating emotionally-driven decisions, by recognizing change inherent in clients' lives, and by understanding pieces that may contribute or detract from client well-being

are part of the value that practitioners provide (Kitces, 2015; Schulaka, 2016). Understanding if changes older adults perceive in their relative finances along with other life changes are related to changes in depressive symptomology may be a helpful to professionals and individuals in this important, expanding segment of the population. The current study examines whether the trajectory of one's comparisons to others over time may be connected to depressive symptomology in older adults. That is, older adults who perceive that their relative financial status is superior to others in one time period, but inferior in the next, have a downward relative trajectory, which may be connected to an increase in depressive symptomology. This study specifically asks the research question, how are changes in individuals' perceptions of their relative income associated with changes in depressive symptomology in older adults?

By examining the relationship between trajectories of perceived relative income and depressive symptomology in older adults, the current study aims to add to the literature in a number of ways. First, financial practitioners and therapists will be able to draw upon this study to better help their older adult clients by focusing on minimizing psychological distress rather than focusing primarily on objective income. Second, an awareness of this possible phenomena would benefit individuals by helping them understand the role of their comparisons over time in their psychological health. Third, this study can add to the overall body of knowledge of the human component of personal finances. Future research could use the findings as support for the importance of incorporating social comparisons and temporal changes into future studies.

Theoretical Framework

Temporal comparison theory (Albert, 1977) is a conceptual framework that examines the association between changes over time in perceived relative income and depressive symptomology. Temporal comparison theory has been described as the temporal interpretation of

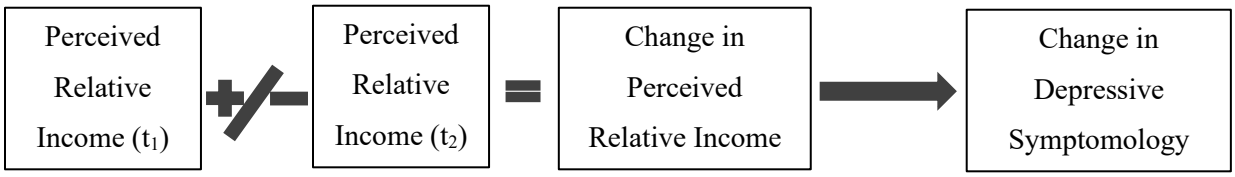
Festinger's (1954) social comparison theory (Redersdorff & Guimond, 2006). Social comparison theory posits that people have a need to evaluate and, in Western culture, a need to improve their abilities, and in the absence of objective standards, do so by making comparisons to similar others (Festinger, 1954; Wood, 1989). Whereas social comparison theory holds that people compare themselves to those around them rather than to objective measures, temporal comparison theory (Albert, 1977) adds that people compare themselves in relation to themselves at different points in time (Redersdorff & Guimond, 2006). Redersdorff and Guimond (2006) further defined and divided the various types of comparisons within the theoretical framework into four categories: (a) Intrapersonal level: Temporal-self comparison, (b) Interpersonal Level: Temporal self-other comparison, (c) Intragroup Level: Temporal-group comparison, and (d) Intergroup Level: Intergroup temporal comparison. Thus, comparisons over time can be with oneself, with others, with one's group, and with other groups. For the temporal aspect, current comparisons can be made with the past or with the future.

The first category, intrapersonal temporal-self comparison, refers to one making comparisons between the current self and the past self or between the current self and the expected future self. Whereas social comparison theory would indicate that one might feel better about themselves when they compare themselves to an inferior other, or worse when they compare themselves to someone they judge as superior, intrapersonal temporal-self comparisons within temporal comparison theory indicate that people might feel better about themselves when they compare themselves to an inferior past self, or feel worse when they deem that they have personally declined over time (Strahan & Wilson, 2006).

The second category, interpersonal temporal self-other comparison is the focus of the current study. Interpersonal self-other comparison refers to comparing one's standing relative to

others over a span of time, such as from the past to the present. In other words, people might feel better about themselves when they deem that their current position compared to others has improved over time. Or, people might feel worse if they perceive that their position compared to others has declined over time. When looking at perceived relative income, this category within temporal comparison theory illuminates the possibility that one's objective income might improve over time, but if it does not advance as quickly as is perceived to be the progress of pertinent others, the individual would experience a deterioration of temporal self-other comparison. On the other hand, a decrease in objective income, if it is perceived to be less drastic of a downturn than that of one's peers, means that the objective financial decline could be evaluated positively from an interpersonal temporal self-other comparison standpoint. This category, interpersonal temporal self-other comparison based on perceived relative income between the past and the present, is visually represented in Figure 4.1.

Figure 4.1 Conceptual Model Based on Interpersonal Level: Temporal Self-Other Comparison within Temporal Comparison Theory



The figure illustrates the model in which perceived relative income is measured over two time periods to capture the comparison and temporal components of the guiding theory. The revealed change is key to predicting a corresponding change in depressive symptomology.

Hypotheses

Based on the framework of temporal comparison theory and related literature, the following hypotheses were established for the current study.

H1: An upward change in reported perceived relative income is related to a corresponding decrease in depressive symptoms in older adults.

H2: A downward change in reported perceived relative income is related to a corresponding increase in depressive symptoms in older adults.

Literature Review

Symptoms, Prevalence and Costs of Depression

Symptoms. Depression is conceptualized as a psychological disorder that involves intense feelings of de-motivation, diminished interest or pleasure, sadness, guilt, and low self-worth (American Psychiatric Association, 2012; World Health Organization, n.d.). The term "depressive symptomology" is conceptualized as the feelings that characterize depression, with the major components including negative affect, anhedonia, and somatic symptoms (Radloff, 1977; Ward, 2006). Symptoms also include feelings of worthlessness, feelings of helplessness and hopelessness, psychomotor agitation or retardation, loss of appetite, and sleep disturbance (Radloff, 1977).

Prevalence. Using the National Epidemiologic Survey on Alcohol and Related Conditions III, Hasin and colleagues (2018) estimated the 12-month prevalence of adult DSM-V major depressive disorder at 10.4% and the lifetime prevalence at 20.6% of the over 36,000 adults surveyed. A separate analysis of the characteristics associated with depressive symptoms as measured by the CES-D in older adults found that over 7% of males and over 11% of females from the CES-D cut-point for depression (Mohebbi et al., 2019). Another study assessing various measures of depressive symptoms used in the Health and Retirement Study (HRS) indicated that approximately one-third of respondents aged 51-61 had moderate to high levels of depressive symptoms (Steffick, 2000). Another study investigating the societal economic costs of

depression noted that between 2005 and 2010, the number of adults reporting depression increased by 1.6 million people, and the over-50-year age group was identified as the fastest growing group (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015). The rise in depression was attributed not only to the population increase in those five years, but also to an increase in the prevalence rate.

Costs. Depressive symptomology in older adults warrants study, not only because of the plentiful evidence of its prevalence, but also because of it being identified as a major economic burden in the United States which has been connected to a multitude of health and social problems (Greenberg et al., 2015). Costs can include direct costs, such as medical services and drug costs, as well as indirect costs like suicide-related costs and workplace costs in the form of absenteeism and presenteeism. Additional health problems, such as cardiovascular disease (Janszky, Ahnve, Lundberg, & Hemmingsson, 2010; Musselman, Evans, & Nemeroff, 1998) and stroke (Jonas & Mussolino, 2000; Pan, Sun, Okereke, Rexrode, & Hu, 2011), have been linked to depression. An attempt to quantify the direct individual costs of major depressive disorder put the cost at over $77 billion in 2005 and rose to almost $99 billion in 2010 (Greenberg et al., 2015).

Temporal Financial Comparisons and Depression

Both financial strain, such as debt and monetary losses, have provided evidence linking individual financial strain to depression. Various studies have found a link between debt and depression (Brown, Taylor, & Price, 2005; Drentea & Reynolds, 2012; Hojman, Miranda, & Ruiz-Tagle, 2013; Richardson, Elliott, & Roberts, 2013). Furthermore, negative changes to finances in the form of income volatility (Holahan & Moos, 1986; Prause, Dooley, & Huh, 2009), housing wealth (Margerison-Zilko, Goldman-Mellor, Falconi, & Downing, 2016;

Yilmazer, Babiarz, & Liu, 2015), and stock wealth (Schwandt, 2018) have been linked to depression or depressive symptomology.

Financial strain related to reduced employment (i.e., becoming unemployed or underemployed that results in loss of income or change in financial status) and depression is a widely studied relationship that is linked to temporal financial comparison. In a longitudinal study by Dooley, Prause, & Ham-Rowbottom (2000), a change from full employment to underemployment or unemployment was found to be associated with depression. In their research on unemployment, self-esteem, and depression, Sheeran, Abrams, and Orbell (1995) found that unemployed participants' comparisons with their past selves (i.e., temporal comparison) were predictive of depression, more so than for employed participants. They suggested that one potential explanation is that those who lost a full-time position were keenly aware of the loss. They reasoned that those who had not experienced a job loss would be less likely to look to the past as a salient reference point and would instead compare their current situation to an idealized self. More recently, in 2014, a study on the effects of job loss on Americans compared to Europeans found that both populations experienced an increase in depressive symptoms when faced with job loss, though wealth moderated the impact more among Americans (Riumallo-Herl, Basu, Stuckler, Courtin, & Avendano, 2014). While these studies included a wider range of ages, the lessons are applied and tested in the current study for the older adult sample. Changes in employment status, such as stopping being employed, were of particular interest to the present study's older age focus, as many older adults reach retirement age.

The exact reasons behind the connection between a downward shift in employment and depressive symptoms have not been thoroughly investigated. There is a paucity of research that

connects the potential comparisons people may make with their past selves and others with regards to employment changes. One study by Sheeran, Abrams, and Orbell (1995), pointed to the possible comparisons individuals make to their past selves as an explanation for the connection between a downturn in employment and depressive symptoms. Such assessments would fit the temporal component of interpersonal temporal self-other comparison within the temporal comparison theory. Another possible explanation could be that the loss of employment changes the individual's self-assessment in comparison to referent others who have not experienced a similar loss of employment or income. Such an assessment would hint at the self-other comparison component of the theory.

Comparison to Others and Depression

The idea that comparing oneself to others might lead to feelings of envy has been documented in early studies based on social comparison theory, and in more recent studies that explore envy based on social media use. An individual can feel envy when making comparisons to others and having feelings of resentment or inferiority when noticing others' advantage, good fortune, or superiority. Individuals may wish they also had the observed advantage, or they may wish that others did not have it (Parrott & Smith, 1993). In a study on hostile and depressive components of envy, Smith, Parrott, Ozer, and Moniz (1994) found that feelings of inferiority and injustice predicted depressive feelings.

A relatively new development in human's ability to see what others are doing and possibly spurring envy, is the advent of social media. In a study in 2013 by Wright et al., the number of hours spent on Facebook was positively correlated with depression. A subsequent study by Tandoc, Ferrucci, and Duffy (2015) directly examined the idea of envy, Facebook use, and depression, and found support that "Facebook envy" predicts depression. The authors found

that heavy Facebook use was related to higher Facebook envy. They noted that Facebook users tend to share only positive experiences, which can lead viewers to feel inferior or envious. The ability to see what others are doing via social media is on the rise in older age groups, with a 2018 poll showing over half of adults aged 50 to 64 have Facebook pages, as well as 32 percent of those age 65 and older (Kiger, 2018), making Facebook envy a possibility even among older age groups.

Combining Temporal Comparisons and Social Comparisons

With evidence in the literature of the importance of both temporal comparisons and of social comparisons, Suls and Mullen (1984) tested whether one of the two are more important in self-assessments in older adults. Their findings suggested that the elderly use temporal comparisons more than social comparisons, while younger individuals rely more on social comparisons. Instead of evaluating temporal financial changes alone, or social comparisons at only one point in time, the present study seeks to add to the literature by examining the combination of social (perceived relative income) and temporal (change in perceived relative income over time) comparisons. That is, the present study considers that such changes in perceived financial status occur in a world of comparisons, and that improvement or decline compared to relative others may be connected to psychological distress in the form of depressive symptoms.

Physical and Emotional Links to Depression

Depression is conceptualized as a psychological disorder that involves intense feelings of de-motivation, diminished interest or pleasure, sadness, guilt, and low self-worth (American Psychiatric Association, 2012; World Health Organization, n.d.). Many studies measure depression by summing various symptoms that are associated with depression (Tandoc, Ferrucci,

& Duffy, 2015). Depressive symptoms is conceptualized as the feelings that characterize depression, with the major components including negative affect, anhedonia, and somatic symptoms (Radloff, 1977; Ward, 2006). Symptoms also include feelings of worthlessness, feelings of helplessness and hopelessness, psychomotor slowing or agitation, loss of appetite, and sleep disturbance (Radloff, 1977).

Physical Health. Studies have consistently shown that certain variables are commonly associated with depressive symptoms in older adults, such as poor health, lack of companionship or social support, female gender, and financial constraints (Blazer, Burchett, Service, & George, 1991; Mohebbi et al., 2019). For example, Kennedy, Kelman, and Thomas (1990) found that poor health and disability explained 19 and 16% of the total variance in depressive symptoms, respectively. They found that poor health outranked demographic and psychosocial characteristics in their association with depressive symptoms.

Social Isolation. Feelings of social isolation can happen when one perceives a lack of either quantity or quality of social relationships or engagement (Peplau & Perlman, 1982; Perissinotto, Cenzer, & Covinsky, 2012). The concept of perceived social isolation is of particular interest in studies of older adults, who, due to health difficulties, death of spouses or partners, increased likelihood of living alone, and a smaller inner circle of friends, are at greater risk of experiencing loneliness or isolation (Victor & Bowling 2012). Numerous studies have documented an association between perceived social isolation and depression in older adults (Courtin & Knapp, 2017; Heikkinen, & Kauppinen, 2011; Taylor, Taylor, Nguyen, & Chatters, 2018).

Anxiety. Anxiety is defined in the Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition (DSM-5®) as an “apprehensive anticipation of future danger or

misfortune accompanied by a feeling of dysphoria or somatic symptoms of tension." (American Psychiatric Association, 2013, p. 818). Anxiety is a subjective feeling or emotional response to a perceived or real threat, and is characterized by apprehension, nervousness, worry, and fearfulness (Spielberger & Reheiser, 2009; van Rooij & Stenson, n.d.). A connection between objective financial means and anxiety has been identified in the literature. For example, maternal poverty has been associated with Generalized Anxiety Disorder (Baer, Kim, & Wilkenfeld, 2012). Other financial aspects such as debt have been found to account for some anxiety in adults. In a study on debt and anxiety, Drentea (2000) found that a higher ratio of credit card debt to income was connected to anxiety.

Anxiety has often been found to accompany depression or depressive symptomology (Beuke et al., 2003; Domschke & Dannlowski, 2010; Scott et al., 2007). While depression and anxiety are widely considered to be two distinct variables, they are also well-recognized as comorbid. (Beuke et al., 2003; Domschke & Dannlowski, 2010; Scott et al., 2007). Researchers who have studied the complexities of these concepts have offered guidance on the interaction and measurement of these variables. A common strategy that has been identified is to statistically control for the confounding variable (Beuke et al., 2003; Ingram & Hamilton, 1999). For the present study, this recommended strategy will be applied by controlling for anxiety.

Happiness. The conceptualization of happiness for the present study is the degree to which one experiences a positive state or affect over a stable time (Veenhoven, 1990). Researchers have pointed out that happiness is not the opposite of depression, yet happiness is inversely tied to depression in the literature. Higher happiness is typically associated with lower levels of depression, so the current study will control for happiness in the model.

Demographic Factors

Demographics, such as gender and age, have been associated with depressive characteristics with mixed results. Studies have consistently shown a higher rate of depression among women than among men, with some data supporting the prevalence of depression among women to be twice that of men (Bebbington, 1996; Lépine & Briley, 2011; Salk, Hyde, & Abramson, 2017). Research on the connection between age and depression has produced differing results. Some studies have shown that older age is connected to higher levels of depression (Brault, Meuleman, & Bracke, 2012; Schoevers, Beekman, Deeg, Jonker, & Tilburg, 2003) or that age-related symptoms, such as health problems and disability rather than age itself, are connected to higher levels of depression (Roberts, Kaplan, Shema, & Strawbridge, 1997). Yet, other studies have found that older age is connected to lower depression, particularly when controlling for confounding factors (Blazer et al., 1991). Furthermore, some research has reported no link between age and depression (Litwin, 2012; Rabbitt, Donlan, Watson, McInnes, & Bent, 1995; Verropoulou & Tsimbos, 2007), while other studies have found patterns of depression that increases and decreases and increases again over the life course (Mirowsky & Ross, 1992).

Low income and socioeconomic status have long been associated with symptoms of depression in older adults (Mossakowski, 2009). Yet, researchers have also found that depression associated with economic hardship decreases with age (Mirowsky & Ross, 2001). In a study which aimed to explain why low income predicts mental distress, researchers found that both income and income rank predicted mental distress (Wood, Boyce, Moore, & Brown, 2012). When a regression was conducted with both income and income rank in the model, only income rank was a significant predictor of mental distress – a result which suggested that the

psychosocial act of comparing one's income relative to others explains mental distress. Other studies have investigated whether wealth plays a role in depressive symptoms. Both a lack of wealth and wealth shocks have been linked to increased depression (McGiffin, Galatzer-Levy, & Bonanno, 2019; Pool, Needham, Burgard, Elliott, & de Leon, 2017), while having financial resources has been found to act as a protective factor against depression (McGiffin, Galatzer-Levy, & Bonanno, 2019; Smith, Langa, Kabeto, & Ubel, 2005; McGiffin, Galatzer-Levy, & Bonanno, 2019).

Methods

Data and Sample

To examine the relationship between change in perceived relative income and change in depressive symptoms in older adults, secondary data from Wave 2 collected in 2010-2011 and Wave 3 collected in 2015-16 of the National Social Life, Health, and Aging Project (NSHAP) were used (Waite et al., 2013; Waite et al., 2017). The NSHAP is a nationally representative sample of older adults, and is described in more detail in Chapters 2 and 3. The NHSAP data set was selected due to its focus on older adults as well as the question in both waves that directly asked participants to assess their perceived relative income. Respondents were asked, "Compared with American families in general, would you say that your household income is far below average, below average, average, above average, or far above average?"

The guiding lens of the interpersonal temporal self-other comparison category of temporal comparison theory indicates that changes in comparisons over time are important. Practitioners also aid their older clients as they navigate life changes or transitions. The older adult age group studied here is marked with major life transitions such as retirement and changes in income, in isolation, and in health. With these points in mind, the current study examined the

change in the various variables over time. Variables that were open to change were measured as change between the two wave's five-year timespan.

Using longitudinal secondary data from Wave 2 and Wave 3 of the NSHAP (Waite et al., 2013; Waite et al., 2017), this study used a multinomial logistic regression model to examine the trajectory of change of perceived relative financial income and the directional change in depressive symptomology in older adulthood.

Dependent Variable

The Center for Epidemiologic Studies Depression Scale (CES-D Scale) was developed to measure the components of depressive symptomology. The scale was not designed as a diagnostic tool, but rather to measure the affective (depressed mood) in respondents (Radloff, 1977). The CES-D has been found to be reliable and valid when used in various sample groups, including adults, young adults, teens, and depressed patients (Radloff, 1991). It has also been validated for use in studies involving older adults (Irwin, Artin, & Oxman, 1999; Vaughan et al., 2018). The scale has also been found to have internal consistency when used in studies of older adults (Lewinsohn, Seeley, Roberts, & Allen, 1997; Van Dam & Earleywine, 2011). Various abbreviated versions have also been tested with older adult samples, with findings of reliability and validity that are similar to the original CES-D measure (Irwin, Artin, & Oxman, 1999; Turvey, 1999; Steffick, 2000).

The present study utilized a 9-item subscale of the CES-D, which is comprised of the nine negative questions from the Iowa short form and follows the rationale and literature support as described in Chapter 2. Participants were asked how often in the past week they felt in line with nine different statements: (1) did not feel like eating, (2) felt depressed, (3) felt everything was an effort, (4) sleep was restless, (5) felt lonely, (6) people were unfriendly, (7) felt sad, (8)

felt people disliked me, and (9) could not get going. Responses were measured on a 4-point Likert scale (1 = *rarely or none of the time*; 2 = *some of the time*; 3 = *occasionally*; 4 = *most of the time*). The 4-point scale responses are summed, providing a possible range of 9 to 36, with a higher score indicating a higher level of depressive symptomology. Cronbach's alpha for the 11-item Iowa short form has been reported at .81 in a sample of older adults (Kohout, et al., 1993). For this study sample and 9-item shortened form, an assessment of the internal consistency also showed a Cronbach's alpha of .80.

To measure the trajectory of change in depressive symptomology, the CES-D subscale scores from Wave 2 were compared to Wave 3 scores for each individual. The potential range of depression symptomology scores from each wave was 9 – 36, thus the depression symptomology change score had the potential to range from -27 to +27, and for the current sample, the actual range of change in scores was from -19 to +19, with -19 indicating the largest decline in reported depressive symptoms, and +19 indicating the largest increase in reported depressive symptoms.

In order to group the change into the three categories of increase in depressive symptoms, decrease in depressive symptoms, and no change in depressive symptoms, it was necessary to first determine what amount of change constituted a meaningful difference from one wave to the next. A common threshold that has been used in the literature is for changes that exceed one half of a standard deviation to be deemed to represent meaningful change. This reflects a "medium change" as defined by Cohen (1988), and has been used in studies that examine the trajectory of changes in depression (Kim, Greenberg, Seltzer, & Krauss, 2003). A meta-analysis by Norman, Sloan, and Wyrwich (2003) of 38 studies with a variety of health-related quality of life scales found that this half of a standard deviation threshold held true in a vast majority of the studies they reviewed. Thus, for the current study, changes that are less than one half of a standard

deviation were categorized as "no change." An increase in depressive symptom score greater than the threshold were categorized as an increase in depressive symptoms, and a decrease of more than the threshold were categorized as a decrease in depressive symptoms.

For the present study, the average change in the depression symptom score was 0.58, and 68% of the sample changed by just over 4 points (*SD* = ±4.11). For the current sample, one half of a standard deviation of change in depressive symptomology was therefore 2.05. As a result, score differences of -2, -1, 0, 1, and 2 were categorized as "no change" in depressive symptomology between waves. Changes of three or more points were considered as showing reliable change. Score changes of -3 to -19 were categorized as a decrease in depressive symptomology between waves, and score changes of +3 to +19 were categorized as an increase in depressive symptomology between waves.

Independent Variables

Change in perceived relative income. Change in perceived relative income is the key independent variable for the current study. Perceived relative income was measured using a single question in the Waves 2 and 3 in the NSHAP. The survey asked, "Compared with American families in general, would you say that your household income is far below average, below average, average, above average, or far above average?" Responses were measured on a 5-point scale (1 = *far below average*; 2 = *below average*; 3 = *average*; 4 = *above average*; 5 = *far above average*). The five response categories from Wave 2 are compared to Wave 3 to determine the trajectory of change. If, for example in Wave 2, individuals assessed their relative income as above average compared to others, but in Wave 3, perceived their relative income as below average when compared to others, they would have experienced a decrease of two points in their perceived relative income. If individuals assessed their relative income as far below

average in Wave 2, but far above average in Wave 3, they would have experienced a +4 change in their perceived relative income. Original scale scores which ranged from 1 (*far below average*) to 5 (*far above average*) subtracted from the Wave 3 scores resulted in a range of possible change in perceived relative income of -4 to +4.

Change scores of +/-1 or larger were determined to meet the criteria for meaningful change (SD = +/-.8). For the present study, one half of a standard deviation was less than one (SD = +-.8), meaning that only those who responded the same perceived relative income in both waves are categorized as "no change", and those with +1 to +4 were categorized as having a positive change in perceived relative income, and those with -1 to -4 had a negative change in perceived relative income.

Demographic factors. A variety of variables that have the potential within individuals to increase or decrease between waves, and which have been shown to be influential in levels of depressive symptomology were included. Those of particular interest due to the focus on the older adult population include changes in self-rated physical health, in functional health, and in social isolation. Changes in happiness and anxiety were also included due to their links to depression. The financial changes incorporated in the model include change in household income and change in net worth. These variables included changes in self-rated physical health, functional health, social isolation, happiness, anxiety, household assets, and household earnings. Each variable was measured using data from Waves 2 and then using data from Wave 3 as described in Chapters 2 and 3, and then Wave 2 scores were subtracted from Wave 3 scores to provide a score that reflects the change in each variable.

Change in partnered status was of particular interest due to the recognition of such changes as major life events. The variable was assessed by first dividing respondents into two

distinct categories in each wave: (a) partnered, which includes married and cohabitating couples, and (b) unpartnered, which includes those who are separated, divorced, widowed and single. Responses were compared between the two waves, initially resulting in four mutually exclusive categories: (a) stayed partnered, which represented those who responded that they were either married or cohabitating in both waves, (b) became partnered, which represents those who reported being unpartnered in Wave 2 and then partnered in Wave 3, (c) stayed unpartnered, which represents those who reported being unpartnered in both Waves 2 and 3, and (d) became unpartnered, which represents those who reported being partnered in Wave 2 and unpartnered in Wave 3. Due to the small (1%) proportion of respondents that became partnered between the two time periods, that category was combined with those who had remained partnered over the timespan. The resulting three categories were: (a) stayed or became partnered, (b) stayed unpartnered, and (c) became unpartnered.

Change in employment status was also a variable of interest for this study of older adults, particularly considering that older ages is when retirement often occurs. The variable was assessed by first categorizing respondents into two distinct categories in each wave: (a) employed, and (b) not employed. Responses were compared between the two waves, initially resulting in four mutually exclusive categories: (a) stayed employed, which represented those who responded that they were employed in both waves, (b) became employed, which represented those who reported not being employed in Wave 2 and then reported being employed in Wave 3, (c) stayed not employed, which represented those who reported being not being employed in both Waves 2 and 3, and (d) stopped being employed, which represented those who reported being employed in Wave 2 and not being employed in Wave 3. Due to the small (5%) proportion of respondents that became employed between the two time periods, the category was combined

with those who had remained employed over the timespan. The resulting three categories were: (a) stayed or became employed, (b) stayed not employed, and (c) became not employed.

Demographic variables were also included in the model, and were measured as described in Chapters 2 and 3. These variables are education, gender, age, and ethnicity. Wave 3 data for these variables were used in the model.

Data Analysis

Multinomial logistic regression was used to assess the probability of having increased depressive symptoms, decreased depressive symptoms, or no change in depressive symptoms relative to experiencing changes in perceived relative income. Multinomial logistic regression was chosen for the analysis, which is appropriate for dependent variables that are categorical in nature and that have more than two categories (Starkweather & Moske, 2011). Other studies with trajectory of change in depressive symptoms as the dependent variable have also employed multinomial logistic regression (Cameron et al., 2019; Kuchibhatla, Fillenbaum, Hybels, & Blazer, 2012). Statistical analyses were carried out using STATA, version 14.2 (StataCorp, 2015) statistical software.

Results

Descriptive Statistics

Results from the descriptive statistics are presented in Table 4.1. The final sample included more women (55%) than men (45%), and a majority (83%) who identified themselves as White. Most of the respondents had remained partnered between the waves (71%) or remained unpartnered (20%). Only 1% of the respondents in the sample had become partnered during the five-year timespan, and thus the two categories of remained partnered and became partnered were combined (72%). The largest job status group was those who were not employed in both

waves (63%), followed by those who stopped being employed (16%). Those who stayed employed (16%), and those who became employed between the waves (5%) were combined to form one category of stayed or became employed (21%). A correlation analysis of the model variables was performed, and the correlation coefficients are found in Appendix C.

Table 4.1 Sample Characteristics of Categorical Variables (N = 1,257)

Variables	n	%
Gender		
Male	568	45%
Female	689	55%
Race		
White	1,038	83%
Black, Hispanic, and Other	219	17%
Education level		
Less than high school	115	9%
High school (or equivalent)	275	22%
Some college or vocational	444	35%
Bachelors or more	423	34%
Partnered status change		
Stayed or became partnered	908	72%
Stayed unpartnered	252	20%
Became unpartnered	97	8%
Job status change		
Stayed or became employed	259	21%
Stayed not employed	796	63%
Became not employed	202	16%
Change in depressive symptoms		
Decrease in depressive symptoms	190	15%
No change	748	50%
Increase in depressive symptoms	319	25%
Change in perceived relative income		
Decrease in perceived relative income	303	24%
No change	759	60%
Decrease in perceived relative income	195	16%

Table 4.2 Sample Characteristics of Scales and Continuous Variables (N = 1,257)

Variable	M	SD	Min	Max
Change in happiness	-.16	1.35	-6.00	5.00
Change in anxiety	-.07	3.67	-18.00	16.00
Change in perceived isolation (standardized)	.03	0.42	-1.57	1.57
Change in physical health (self-assessed)	-.14	0.84	-3.00	3.00
Change in functional health (ADLs)	-.30	1.25	-7.00	6.00
Change in net worth bracket	.24	1.01	-4.00	4.00
Change in income bracket	.02	0.87	-3.00	3.00
Age	74.00	6.67	51.00	95.00

Multinomial Logistic Regression Results

A summary of the multinomial logistic regression model results using trajectory of change in perceived relative income as the key predictor variable is provided in Table 4.3. The final analytic sample had 1,257 respondents, with 319 categorized as having an increase in depressive symptoms, 190 as having a decrease in depressive symptoms, and 748 as having no change in depressive symptoms. The chi-square was 200.36 which was significant at the .001 level. The model fit is reflected in the pseudo R-squared of .08, meaning that 8% of the variance was explained by the model.

Table 4.3 Multinomial Logistic Regression Results for Variables Associated with Change in Depressive Symptomology (N = 1,257)

Variable	RRR	Std. Err.	*95% CI Lower*	*95% CI Upper*
Decrease in Depressive Symptoms vs. No Change				
Intercept	0.52	0.54	0.07	4.04
Downturn in Perceived Relative Income	1.06	0.21	0.71	1.57
Upswing in Perceived Relative Income	1.10	0.26	0.69	1.76
Change in Happiness	1.39***	0.10	1.21	1.59
Change in Anxiety	0.95*	0.02	0.90	0.99
Change in Perceived Isolation(standardized)	0.57**	0.12	0.37	0.87
Change in Physical Health (self-assessed)	1.28*	0.14	1.04	1.59
Change in Functional Health (ADLs)	0.95	0.07	0.82	1.10

Table 4.3 (continued)

Variable	RRR	Std. Err.	*95% CI Lower*	*95% CI Upper*
Change in Net Worth Bracket	0.91	0.08	0.77	1.08
Change in Income Bracket	1.22[t]	0.13	0.99	1.49
Age	0.99	0.01	0.96	1.02
Gender (ref = Male)	1.07	0.19	0.75	1.53
Ethnic Group (ref = White)				
Black, Hispanic, or Other	1.51*	0.31	1.01	2.27
Education (ref = less than college degree)				
Bachelor's or more	0.76	0.14	0.53	1.10
Partnered Status Change (ref = stayed or became partnered)				
Stayed Unpartnered	1.15	0.26	0.74	1.78
Became Unpartnered	1.25	0.44	0.63	2.50
Employed Status Change (ref = stayed or became employed)				
Stayed not employed	0.74	0.16	0.49	1.12
Stopped being employed	0.37**	0.12	0.20	0.69
Increase in Depressive Symptoms vs. No Change				
Intercept	0.07	0.06	0.01	0.39
Downturn in Perceived Relative Income	1.04	0.18	0.74	1.45
Upswing in Perceived Relative Income	0.97	0.20	0.65	1.45
Change in Happiness	.73***	0.04	0.66	.82
Change in Anxiety	1.02	0.02	0.98	1.05
Change in Perceived Isolation (standardized)	1.53*	0.27	1.09	2.15
Change in Physical Health (self-assessed)	0.86[t]	0.07	0.73	1.01
Change in Functional Health (ADLs)	0.85**	0.05	0.76	0.95
Change in Net Worth Bracket	0.95	0.07	0.79	1.05
Change in Income Bracket	1.05	0.09	0.89	1.24
Age	1.02[t]	0.01	1.00	1.05
Gender (ref = Male)	1.18	0.18	0.88	1.59
Ethnic Group (ref = White)				
Black, Hispanic, or Other	0.96	0.19	0.66	1.40
Education (ref = less than college degree)				
Bachelor's or more	0.70*	0.11	0.51	0.95

Table 4.3 (continued)

Variable	RRR[a]	Std. Err.	*95% CI Lower*	*95% CI Upper*
Partnered Status Change (ref = stayed or became partnered)				
Stayed Unpartnered	0.99	0.19	0.68	1.45
Became Unpartnered	2.31**	0.59	1.40	3.81
Employed Status Change (ref = stayed or became employed)				
Stayed not employed	0.82	0.15	0.56	1.18
Stopped being employed	0.86	0.20	0.55	1.37

[a] RRR = relative risk ratio

[t] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

The multinomial logistic regression analysis performed determined the relative risk ratio (RRR) of being in the increase or decrease in depressive symptom trajectories compared to no change. Relative risk ratios have some similarities in interpretation to odds ratios from logistic regression. The RRR provides the risk of the outcome of being in one group versus the risk of the outcome being in the other (referent) group (UCLA Institute for Digital Research and Education, n.d.). Change in perceived relative income was not a significant predictor of change in depressive symptom trajectories in this model. First, looking at which factors were related to a decrease in depressive symptoms, the multinomial logistic regression analysis revealed that when a person's self-reported physical health increased between waves, the odds of having a decrease in depressive symptoms increased by 28%. Similarly, as happiness increased between waves, the odds of having a decrease in depressive symptoms increased by 39% ($p < .001$).

As perceived isolation increased between waves, the odds of a decrease in depressive symptoms went down to 57%, a decrease of 43% ($p < .05$). Similarly, as anxiety increased between waves, the odds of a decrease in depressive symptoms was lowered slightly to 95% ($p < .05$). There was only a marginally statistically significant relationship between change in income

category ($p < .10$) and decrease in depressive symptoms. The results suggest that as income increased, the odds of a negative change in depressive symptoms also increased by 22% ($p < .05$). Non-White respondents were 50% more likely to be in the decrease in depressive symptoms category than no change. No statistically significant relationship with a decrease in depressive symptoms was found with change in functional health (measured with ADLs), change in net worth, age, gender, education, or change in partnered status. For employment status, those who stopped being employed ($p < .05$) had a lower probability of experiencing a decrease in depressive symptoms.

While change in perceived relative income was also not a significant predictor of an increase in depressive symptoms in this model, a relationship was found among other variables. As happiness increased between waves, the odds of having an increase in depressive symptoms was lowered to 73% ($p < .001$). Change in self-reported physical health had a marginally statistically significant ($p < .10$) relationship, reducing the odds of having increased depressive symptoms by 14%. As functional health ($p < .01$) improved, the probability of an increase in depressive symptoms was similarly reduced by 16%. A unit increase in the change in perceived isolation ($p < .05$) increased the probability of experiencing an increase in depression by 53%.

Only three demographic variables showed a relationship with the dependent variable. Age was only marginally statistically significant ($p < .10$), and a unit increase in age showed only a small increase in probability (2%) of having an increase in depressive symptoms. Respondents with a bachelor's degree or more were less likely to be in the increased depressive symptoms category. For the change in partnered status categories, compared to the reference group of those who remained partnered across waves, those who became unpartnered were more than twice as likely to show an increase in depressive symptomology ($p < .05$) rather than no

change. No statistically significant relationship with an increase in depressive symptoms was found with change in anxiety, change in income or net worth bracket, gender, race/ethnicity, and change in employment status.

Post-hoc Analysis

In order to further test the potential relationship of change in perceived relative income on the trajectory of the change in depression, a second regression was run, this time with only very large changes in perceived relative income categorized as meaningful change. Sawilowsky (2009) advocated for more comprehensive rules of thumb regarding effect sizes and provided support for adding "very large" (d = 1.2) and "huge" (d = 2.0) categories. Using this definition of a very large change, a change of 1.2 standard deviations would be needed to be categorized as change. For the perceived relative income variable with a standard deviation of .80, a change of .96 (1.2 times the SD) in either direction meets this definition of a "very large" change, and a change of 1.61 would be classified as a "huge" change. Thus, for the second multinomial regression, change scores of 0, +1, and -1 were categorized as "no change", and only scores that changed by two or more steps in either direction (-2 to -4, or +2 to +4) were grouped as an increase or decrease in perceived relative income. Based on this categorization, of the 1,257 respondents, 34 (3%) were categorized as having a very large decrease in perceived relative income, 1,637 (96%) had no change in perceived relative income, and 22 (2%) had a very large increase in perceived relative income. A summary of the multinomial logistic regression model results using trajectory of very large change in perceived relative income as the key predictor variable is provided in Table 4.4. The chi-square was 209.01 which is significant at the .001 level. The model fit is reflected in the pseudo R-squared of .09, meaning that 9% of the variance was explained by the model.

First, the results for which variables in this second multinomial logistic regression predict a decrease in depressive symptoms indicated that a "very large" negative change in perceived relative income had a statistically significant relationship ($p < .01$) with a decrease in depressive symptoms. That is, those who had a large (2 steps or more) downturn in perceived relative income were 2.60 times more likely to have a decrease in depressive symptoms. There was no statistically significant relationship between a very large positive change in perceived relative income and a decrease in depression. Each of the other physical and emotional variables (i.e. happiness, anxiety, perceived isolation, and physical health and stopped being employed) that showed a significant relationship in the first regression using a "medium" (1 step or more) change in perceived relative income as the key independent variable also showed a similar relationship with a decrease in depressive symptoms in this model using "very large" change in perceived relative income as the key independent variable.

Looking at the results for predicting an increase in depressive symptoms, a very large negative change in perceived relative income had only a marginally significant ($p < .10$) relationship with an increase in depressive symptoms. Those results indicated that respondents who had a very large downturn in perceived relative income were 2.31 times more likely to have an increase in depressive symptoms compared to those who had no change in depressive symptoms. There was no statistically significant relationship between a very large negative change in perceived relative income and an increase in depression. Each of the other variables (i.e. change in happiness, change in anxiety, change in perceived isolation, change in physical health, change in functional health, becoming unpartnered, and education level) that showed a significant or marginally significant relationship in the first regression using a medium (1 step or more) change in perceived relative income as the key independent variable also showed a similar

relationship with a decrease in depressive symptoms in this second model using very large change (2 steps or more) in perceived relative income as the key independent variable.

Table 4.4 Multinomial Logistic Regression Results for Variables Associated with Change in Depressive Symptomology with Very Large Change in Perceived Relative Income as the Key Predictor Variable (N = 1,257)

Variable	RRR	Std. Err.	*95% CI Lower*	*95% CI Upper*
Decrease in Depressive Symptoms vs. No Change				
Intercept	0.68	0.77	0.07	6.22
Very Large Downturn in Perceived Relative Income	3.57**	1.63	1.46	8.75
Very Large Upswing in Perceived Relative Income	0.63	0.43	0.17	2.38
Change in Happiness	1.38***	0.10	1.20	1.58
Change in Anxiety	0.95*	0.02	0.90	1.00
Change in Perceived Isolation(standardized)	0.57*	0.13	0.37	0.88
Change in Physical Health (self-assessed)	1.24*	0.14	1.00	1.54
Change in Functional Health (ADLs)	0.96	0.07	0.83	1.11
Change in Net Worth Bracket	0.90	0.08	0.76	1.07
Change in Income Bracket	1.19^{t}	0.12	0.97	1.45
Age	0.99	0.01	0.96	1.02
Gender (ref = Male)	1.10	0.20	0.77	1.57
Ethnic Group (ref = White)				
Black, Hispanic, or Other	1.10	0.20	0.77	1.57
Education (ref = less than college degree)				
Bachelor's or more	0.76	0.14	0.53	1.10
Partnered Status Change (ref = stayed or became partnered)				
Stayed Unpartnered	1.15	0.26	0.74	1.78
Became Unpartnered	1.24	0.44	0.62	2.47
Employed Status Change (ref = stayed employed)				
Stayed not employed	0.75	0.16	0.50	1.14
Stopped being employed	0.38**	0.12	0.20	0.69

Table 4.4 (continued)

Variable	RRR	Std. Err.	*95% CI Lower*	*95% CI Upper*
Increase in Depressive Symptoms vs. No Change				
Intercept	0.07	0.06	0.01	0.39
Very Large Downturn in Perceived Relative Income	2.14[t]	0.98	0.88	5.24
Very Large Upswing in Perceived Relative Income	.89	0.52	0.29	2.78
Change in Happiness	.73***	0.04	0.66	.81
Change in Anxiety	1.01	0.02	0.97	1.05
Change in Perceived Isolation(standardized)	1.50*	0.26	1.06	2.12
Change in Physical Health (self-assessed)	0.86[t]	0.07	0.72	1.01
Change in Functional Health (ADLs)	0.85**	0.05	0.76	0.95
Change in Net Worth Bracket	0.90	0.07	0.78	1.04
Change in Income Bracket	1.04	0.09	0.89	1.23
Age	1.02[t]	0.01	1.00	1.05
Gender (ref = Male)	1.18	0.18	0.88	1.59
Ethnic Group (ref = White)				
Black, Hispanic, or Other	0.96	0.18	0.65	1.40
Education (ref = less than college degree)				
Bachelor's or more	0.70*	0.11	0.52	0.95
Partnered Status Change (ref = stayed or became partnered)				
Stayed Unpartnered	1.00	0.19	0.68	1.46
Became Unpartnered	2.28**	0.58	1.38	3.76
Employed Status Change (ref = stayed or became employed)				
Stayed not employed	0.82	0.16	0.30	1.19
Stopped being employed	0.86	0.20	0.53	1.37

[t] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The first multinomial regression showed no significance between either an upward or downward medium change in perceived relative income and an increase or decrease in depressive symptoms, indicating that someone who had an improvement over time in their

perceived income compared to other Americans were not more likely to experience any easing or worsening in depressive symptoms. Likewise, those who had a downturn in their perceived relative income over time did not show any significant increased odds of a positive or negative directional change in depressive symptomology. This first multinomial regression analysis did not produce results to support either of the study's hypotheses.

This first model did find support that was in alignment with the literature that links various physical and emotional factors with depressive symptomology. A unit improvement over time in self-reported physical health between the waves resulted in a 28% higher likelihood of experiencing a lessening of depressive symptoms over the same timeframe, and a 14% lower likelihood of experiencing an increase in depressive symptoms. These results are congruent with literature that has connected poor physical health with depression in a single time period and provides evidence that changes in physical health over time is also connected to changes in depressive symptomology. Improvements over time in functional health, which was measured using the ability to complete ADLs without difficulty, predicted a 16% lower likelihood of being in the category of having increased depressive symptoms, but showed no statistically significant relationship with the odds of being in the decreased depressive symptom category.

As anticipated based on previous literature, change in happiness was inversely related to change in depressive symptoms. Increased happiness was linked to both a higher likelihood of being in the decrease in depressive symptoms category, and a lower likelihood of being in the increase in depressive symptoms category. Though anxiety and depression often accompany each other in the literature, the results of this study showed less of a consistent connection. A unit increase in anxiety between waves was linked to a 5% less likelihood of being in the decreased depression category, and showed no significant relationship with being in the increase

in depressive symptoms category. One possible explanation for change in anxiety not consistently predicting the trajectory of depressive symptomology in this model could lie in the concept of threat cognitions and temporal orientations of the two concepts. Whereas depression is marked by loss cognitions, anxiety is marked by cognitions of danger or of the threat of a loss (Eysenck & Fajkowska, 2018). Depression has been described as starting with losses that have already occurred in the past, in contrast with anxiety which comes from the worry of potential future threats (Eysenck & Fajkowska, 2018). As this study centers on changes in perceived relative income, a downturn in this variable would represent an occurred loss, rather than the threat of an upcoming loss. Thus, these differences between the concepts of depression and anxiety in the context of the study's past orientation might account for the lack of support for anxiety as a strong or consistent predictor of depressive symptomology in the model.

Interestingly, almost no financial variable changes were connected to changes in depression. No connection was found between changes in net worth and changes in depressive symptoms, and only a marginal connection was found between an increase in income and an increased likelihood of being in the decreased depressive symptom category. The lack of statistical support found among financial variables might be attributed in part to the lack of detail used in the measurement of these items. The use of bracketed categories means that changes within each income or net worth bracket were not detected. The statistical support that was found shows that an increase in income brackets between the two waves predicted a higher likelihood of being in the decreased depressive symptom category, indicating that rising income may help assuage depressive symptomology. Similarly, many demographic variables, such as gender, age, and race/ethnicity categories showed little or no connection with change in depression. The literature has shown mixed results when it comes to the relationship between age and depression,

and the present study's results also did not offer clear direction. Only marginal significance was found between an increase in age and a 2% more likelihood of being in the increase in depressive symptoms category.

Regarding changes in partnership status, the results from this study support the literature that suggests there are drawbacks to becoming unpartnered. Compared to the reference group of those who stayed or became partnered between Waves 2 and 3, respondents who became unpartnered during the five-year span between waves were over twice as likely to be in the increase in depressive symptoms trajectory instead of no change. Thus, these results support that becoming unpartnered can worsen depressive symptoms. Those who were already unpartnered during Wave 2 and remained so in Wave 3 did not have a statistically significant link to depressive symptom trajectory. These results suggest that recency (within past five years) of becoming unpartnered through divorce, separation, or death of a spouse may play a role in depressive symptomology.

Changes in employment were generally not found to be a predictor of being in the increased depressive symptom category, but one group was the exception. Those who were employed during Wave 2 but stopped being employed by Wave 3 were less likely to be in the decrease in depressive symptoms group compared to those who stayed employed. With the mixed results in previous studies as to the emotional benefits or detriments of retirement, the present study provides one small piece of evidence that leaving employment does not put people on the path of alleviating depressive symptoms, but it provides no evidence of a connection between the other categories of job status change and trajectories of depressive symptoms.

Only when a very large change in perceived relative income was examined was a significant relationship found between the key independent variable, change in perceived relative

income, and the dependent variable, change in depressive symptoms. Compared to the reference group of those whose perceived relative income remained unchanged, those who experienced a very large decrease in perceived relative income were more likely (based on marginally significant results) to have an upward trajectory in depressive symptomology instead of no change. This provides marginal support for the second hypothesis, which predicted that a downward change in reported perceived relative income is related to an increase in depressive symptoms in older adults. Interestingly, those who experienced a large deterioration in perceived relative income were also more likely to be in the decrease in depression category instead of no change. Thus, going down by two or more steps in perceived relative income means depression is likely to go either up or down versus of no change.

Just as having an increase in perceived relative income between the waves was not statistically significantly related to an increase in depressive symptoms nor to having a decrease in depressive symptoms, a very large increase in perceived relative income also produced no significant results. Thus, support for the first hypothesis, that an upward change in reported perceived relative income is related to a corresponding decrease in depressive symptoms in older adults, was not found in either of the regression models.

Overall, these results indicate that only a very large decrease over time in individuals' perceptions of where they stand financially compared to others has a link to depressive symptom trajectories, while improvements to individuals' perceived relative income do not. While interpersonal self-other comparisons under the temporal comparison theory that guided this study can account for the increase in depressive symptoms for those who experience a very large decrease in perceived relative income, the theory does not account for two important trends found in this study: (a) that only a very large decrease but not a medium or large increase in

perceived relative income was connected to a change in depression and (b) that participants with the very large decline in perceived relative income were both more likely to be in the decrease in depressive symptoms and also more likely to be in the increase in depressive symptoms categories.

The first phenomena, that only a very large decrease but not an increase in perceived relative income was connected to a change in depression, could possibly be explained by lessons from prospect theory (Kahneman and Tversky, 1979), which postulates that people value losses and gains differently. That is, people feel the pain from losses more than they feel the pleasure of a similar gain. If improvements in perceived relative income is akin to a gain, and decreases are akin to a loss, then according to prospect theory, it follows that the decrease would be felt and in this case, be manifested in an increase in depressive symptoms. The absence of a connection between a large upswing in perceived relative income and having lower depressive symptoms might also be explained by the possible role of adaptation. Foundational literature on adaptation theory asserts that adaptation may play a role in why people who experience material gains will revert over time to previous levels of subjective well-being (Brickman, Coates, & Janoff-Bulman, 1978; Frederick & Loewenstein, 1999). Adaptation means that people may quickly adapt to their new, higher income, or applied to this study, perceived relative income, and over time will not exhibit changes in subjective well-being, which for this study was centered on depressive symptomology.

The second phenomena observed in these results but not fully explained by temporal comparison theory is that participants with the very large decline in perceived relative income were both more likely to be in the decrease in depressive symptoms category and also more likely to be in the increase in depressive symptoms category. At the surface, it seems surprising

to find support for two outcomes of opposite trajectories. Looking for an explanation, it is possible, that the very large decline in perceived relative income is experienced differently by different people. For some individuals, as predicted by temporal comparison theory, the downshift in perceived relative income has a negative outcome, increasing the chance of having an increase in depressive symptoms. For others, however, perhaps the downshift in comparative income is accompanied by other social benefits. For example, the downturn might have been accompanied by improved relationships, or perhaps the change alleviated work, social, or other pressures that might have accompanied their previous, higher relative perceived income standing. Such corresponding changes might explain the increased chance of having a decrease in depressive symptoms for those individuals.

Implications

Given the longitudinal data and analyses employed, this research provides insights into the importance of changes in perceived relative income and depressive symptomology trajectories over time. While studies often incorporate income into the mix, and some may examine subjective and even comparative measures, this study takes these ideas a step further by presenting the combination of a temporal and comparative aspects. This unique assessment goes beyond static comparisons or objective income changes, and may be a more realistic view into the importance of changes in perceived relative income and depressive symptomology trajectories.

For financial practitioners and therapists who aim to help clients avoid psychological distress, understanding the significance that very large changes in perceived income compared to relevant others has on changes in depressive symptoms, could be valuable. The aging of America

and the life changes and transitions notable to older adults make research that recognizes the potential role that change may play in successful aging relevant and valuable.

Connections that were not found can also be informative and point to implications. The lack of a connection between "medium" change in perceived relative income and depressive symptoms suggests that a shift in perceived relative income does not destine individuals to a negative psychological outcome, nor does it guarantee some psychological benefit. Only very large downturns in perceived relative income had any bearing on the trajectory of depression symptomology, indicating that people may manage small shifts well, or that small shifts simply have no bearing on depressive symptomology. The connections not found suggest that perhaps change in perceived relative income over time are not all that consequential, unless the change is both big and in a negative direction. Even then, the large shift could have different outcomes for different individuals.

Limitations

Using data from the two waves did not provide the study with details on when exactly during the time between Waves 2 and 3 the change in perceived relative income and the change in depression occurred, whether there was more than one change during that time span, or whether there were previous changes for each respondent, so the study is unable to assess if timing or previous experiences play a role. With financial variables such as household income and household assets grouped into categories, only changes that moved an individual's household income or assets from one category to the next could be detected. Having and using actual figures on a continuous scale would have better detected and assessed changes in these financial variables between waves along with their connection to depressive symptom trajectory.

The study did not evaluate whether there was any importance to respondents' baselines regarding their perceived relative income or their depression. It's possible that those who perceived their income as average compared to others in Wave 2, and by the next wave had dropped to assessing themselves as far below average, had a different outcome than someone who started far above average and dropped to average. However, the model would have not differentiated between the two.

As in the first paper, perceived relative income compared to American families in general may not be a salient comparison group for the respondents. Also, focusing on perceived relative income omits the possibility that perceived relative assets or an overall assessment of perceived relative financial standing may be connected to the outcome variable, depressive symptomology.

Future Research

Future research could expand upon this study by including a wider age range and gathering more detailed income and asset data. Expanding to a wider range of ages would provide more insights into the potential connections between changes in perceived relative income and changes in depressive symptomology. Comparing different groups' (i.e., pre-retirees to retirees, or younger to middle age to older adults) perceived relative incomes would provide further insights. Details on retirees, such as whether retirement was planned or unplanned, could be explored. More detailed data collection on income and assets would allow for a better assessment of changes over time for these variables and how they relate to the outcome variable. As one's financial standing is made up of more than just income, future studies could assess perceived changes in overall wealth or financial assets rather than just income as it pertains to depressive symptom trajectories. While depressive symptomology is an important measure,

future research could evaluate a wider range of outcome variables that relate to subjective well-being and ill-being, or that relate to financial behaviors.

Further details into the variable of ending employment also warrants further study. Details such as whether ending employment was due to a planned retirement or due to an unexpected departure from employment, for example, were not captured in the current study, yet could play a role in psychological outcomes.

Future studies might also consider whether the baseline of key variables is important. For example, those who first evaluate themselves at a higher income than others might feel change differently than those who initially evaluate themselves as average. Similarly, respondents could be divided into stratified groups based on their baseline of depressive symptoms. Those with a baseline of low depressive symptoms might experience different changes from those with a baseline of high depressive symptoms.

The results in which a very large decrease in perceived relative income was connected to both a higher likelihood of being in the decreased depressive symptoms trajectory and a higher likelihood of being in the increased depressive symptoms trajectory spurs the need for further exploration into what mechanisms account for this phenomenon. Differences in personality traits or in individual histories, for example, might be explored to better decipher what prompts one trajectory or the other.

References

Albert, S. (1977). Temporal comparison theory. *Psychological Review*, *84*(6), 485–503. https://psycnet.apa.org/doi/10.1037/0033-295X.84.6.485

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Baer, J. C., Kim, M., & Wilkenfeld, B. (2012). Is it generalized anxiety disorder or poverty? An examination of poor mothers and their children. *Child and Adolescent Social Work Journal*, *29*(4), 345–355. https://doi.org/10.1007/s10560-012-0263-3

Bebbington, P. (1996). The origins of sex differences in depressive disorder: Bridging the gap. *International Review of Psychiatry*, *8*(4), 295–332. https://doi.org/10.3109/09540269609051547

Blazer, D., Burchett, B., Service, C., & George, L. K. (1991). The association of age and depression among the elderly: An epidemiologic exploration. *Journal of Gerontology*, *46*(6), M210–M215. https://doi.org/10.1093/geronj/46.6.M210

Brault, M. C., Meuleman, B., & Bracke, P. (2012). Depressive symptoms in the Belgian population: Disentangling age and cohort effects. *Social Psychiatry and Psychiatric Epidemiology*, *47*(6), 903–915. https://doi.org/10.1007/s00127-011-0398-0

Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative?. *Journal of Personality and Social Psychology*, *36*(8), 917–927. https://doi.org/10.1037/0022-3514.36.8.917

Brown, S., Taylor, K., & Price, S. W. (2005). Debt and distress: Evaluating the psychological cost of credit. *Journal of Economic Psychology*, *26*(5), 642–663. https://doi.org/10.1016/j.joep.2005.01.002

Cameron, N., Godino, J. G., Skipper, T., Dillon, L., Waalen, J., Hill, L., & Patrick, K. (2019). Associations between reliable changes in depression and changes in BMI, total body fatness and visceral adiposity during a 12-month weight loss trial. *International Journal of Obesity, 43*(9), 1859–1862. https://doi.org/10.1038/s41366-018-0272-1

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohn, R. M. (1978). The effect of employment status change on self-attitudes. *Social Psychology*, *41*(2), 81–93. https://psycnet.apa.org/doi/10.2307/3033568

Dooley, D., Prause, J., & Ham-Rowbottom, K. A. (2000). Underemployment and depression: Longitudinal relationships. *Journal of Health and Social Behavior*, *41*(4), 421–436.

Drentea, P., & Reynolds, J. R. (2012). Neither a borrower nor a lender be: The relative importance of debt and SES for mental health among older adults. *Journal of Aging and Health*, *24*(4), 673–695. https://doi.org/10.1177%2F0898264311431304

Eysenck, M. W., & Fajkowska, M. (2018). Anxiety and depression: toward overlapping and distinctive features. *Cognition and Emotion, 32*(7), 1391-1400. https://doi.org/10.1080/02699931.2017.1330255

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117–140. https://doi.org/10.1177/001872675400700202

Frederick, S., & Loewenstein, G. (1999). Hedonic adaptation. In Kahneman D., Diener E., & Schwarz N. (Eds.), *Well-being: Foundations of hedonic psychology* (pp. 302–329). New York, NY: Russell Sage Foundation. Retrieved from www.jstor.org/stable/10.7758/9781610443258.20

Golden, J., Conroy, R. M., Bruce, I., Denihan, A., Greene, E., Kirby, M., & Lawlor, B. A. (2009). Loneliness, social support networks, mood and wellbeing in community-dwelling elderly. *International Journal of Geriatric Psychiatry: A Journal of the Psychiatry of Late Life and Allied Sciences*, *24*(7), 694–700. https://doi.org/10.1002/gps.2181

Greenberg, P. E., Fournier, A. A., Sisitsky, T., Pike, C. T., & Kessler, R. C. (2015). The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *The Journal of Clinical Psychiatry*, *76*(2), 155–162.

Hasin, D. S., Sarvet, A. L., Meyers, J. L., Saha, T. D., Ruan, W. J., Stohl, M., & Grant, B. F. (2018). Epidemiology of adult DSM-5 major depressive disorder and its specifiers in the United States. *Journal of the American Medical Association Psychiatry*, *75*(4), 336–346. https://doi.org/10.1001/jamapsychiatry.2017.4602

Hojman, D., Miranda, A., & Ruiz-Tagle, J. (2013). Over indebtedness and depression: Sad debt or sad debtors. *Serie de Documentos de Trabajo*, *384*, 1–45.

Holahan, C. J., & Moos, R. H. (1986). Personality, coping, and family resources in stress resistance: A longitudinal analysis. *Journal of Personality and Social Psychology*, *51*(2), 389–395. https://psycnet.apa.org/doi/10.1037/0022-3514.51.2.389

Irwin, M., Artin, K. H., & Oxman, M. N. (1999). Screening for depression in the older adult: Criterion validity of the 10-item Center for Epidemiological Studies Depression Scale (CES-D). *Archives of Internal Medicine*, *159*(15), 1701–1704. https://doi.org/10.1001/archinte.159.15.1701

Janszky, I., Ahnve, S., Lundberg, I., & Hemmingsson, T. (2010). Early-onset depression, anxiety, and risk of subsequent coronary heart disease: 37-year follow-up of 49,321

young Swedish men. *Journal of the American College of Cardiology*, *56*(1), 31–37. https://doi.org/10.1016/j.jacc.2010.03.033

Jonas, B. S., & Mussolino, M. E. (2000). Symptoms of depression as a prospective risk factor for stroke. *Psychosomatic Medicine*, *62*(4), 463–471.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*(2), 263–291. https://doi.org/10.2307/1914185

Kennedy, G. J., Kelman, H. R., & Thomas, C. (1990). The emergence of depressive symptoms in late life: The importance of declining health and increasing disability. *Journal of Community Health*, *15*(2), 93–104. https://doi.org/10.1007/BF01321314

Kiger, P. J. (2018, May 3). *Older Adults' Use of Facebook Continues to Grow.* AARP. https://www.aarp.org/home-family/personal-technology/info-2018/facebook-older-americans-privacy.html

Kim, H. W., Greenberg, J. S., Seltzer, M. M., & Krauss, M. W. (2003). The role of coping in maintaining the psychological well-being of mothers of adults with intellectual disability and mental illness. *Journal of Intellectual Disability Research*, *47*(4-5), 313–327. https://doi.org/10.1046/j.1365-2788.2003.00493.x

Kitces, M. (2015). 6 key value propositions a good financial planner can provide for clients seeking a better "return on life". Retrieved from https://www.kitces.com/blog/6-key-value-propositions-a-good-financial-planner-canprovide-for-clients-seeking-a-better-return-on-life/

Kohout, F. J., Berkman, L. F., Evans, D. A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D depression symptoms index. *Journal of Aging and Health*, *5*(2), 179–193. https://doi.org/10.1177%2F089826439300500202

Kuchibhatla, M. N., Fillenbaum, G. G., Hybels, C. F., & Blazer, D. G. (2012). Trajectory classes of depressive symptoms in a community sample of older adults. *Acta Psychiatrica Scandinavica*, *125*(6), 492–501. https://doi.org/10.1111/j.1600-0447.2011.01801.x

Lépine, J. P., & Briley, M. (2011). The increasing burden of depression. *Neuropsychiatric Disease and Treatment*, *7*(Suppl 1), 3–7. https://doi.org/10.2147/NDT.S19617

Lewinsohn, P. M., Seeley, J. R., Roberts, R. E., & Allen, N. B. (1997). Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychology and Aging*, *12*(2), 277–287. https://doi.org/10.1037/0882-7974.12.2.277

Litwin, H. (2012). Physical activity, social network type, and depressive symptoms in late life: An analysis of data from the National Social Life, Health and Aging Project. *Aging & Mental Health*, *16*(5), 608–616. https://doi.org/10.1080/13607863.2011.644264

Margerison-Zilko, C., Goldman-Mellor, S., Falconi, A., & Downing, J. (2016). Health impacts of the great recession: A critical review. *Current Epidemiology Reports*, *3*(1), 81–91. https://doi.org/10.1007/s40471-016-0068-6

McGiffin, J. N., Galatzer-Levy, I. R., & Bonanno, G. A. (2019). Socioeconomic resources predict trajectories of depression and resilience following disability. *Rehabilitation Psychology*, *64*(1), 98–103. https://doi.org/10.1037/rep0000254

Mirowsky, J., & Ross, C. E. (1992). Age and depression. *Journal of Health and Social Behavior*, *33*(3), 187–205. https://doi.org/10.2307/2137349

Mirowsky, J., & Ross, C. E. (2001). Age and the effect of economic hardship on depression. *Journal of Health and Social Behavior, 42*(2), 132–150. https://doi.org/10.2307/3090174

Mohebbi, M., Agustini, B., Woods, R. L., McNeil, J. J., Nelson, M. R., Shah, R. C., ... & Kirpach, B. (2019). Prevalence of depressive symptoms and its associated factors among healthy community-dwelling older adults living in Australia and the United States. *International Journal of Geriatric Psychiatry, 34*(8), 1208–1216. https://doi.org/10.1002/gps.5119

Mossakowski, K. N. (2009). The influence of past unemployment duration on symptoms of depression among young women and men in the United States. *American Journal of Public Health*, *99*(10), 1826–1832. https://doi.org/10.2105/AJPH.2008.152561

Musselman, D. L., Evans, D. L., & Nemeroff, C. B. (1998). The relationship of depression to cardiovascular disease: Epidemiology, biology, and treatment. *Archives of General Psychiatry*, *55*(7), 580–592. https://doi.org/10.1001/archpsyc.55.7.580

Norman, G. R., Sloan, J. A., & Wyrwich, K. W. (2003). Interpretation of changes in health-related quality of life: The remarkable universality of half a standard deviation. *Medical Care, 41*(5), 582–592.

Pan, A., Sun, Q., Okereke, O. I., Rexrode, K. M., & Hu, F. B. (2011). Depression and risk of stroke morbidity and mortality: A meta-analysis and systematic review. *Journal of the American Medical Association*, *306*(11), 1241–1249. https://doi.org/10.1001/jama.2011.1282

Parrott, W. G., & Smith, R. H. (1993). Distinguishing the experiences of envy and jealousy. *Journal of Personality and Social Psychology*, *64*(6), 906–920. https://psycnet.apa.org/doi/10.1037/0022-3514.64.6.906

Perissinotto, C. M., Cenzer, I. S., & Covinsky, K. E. (2012). Loneliness in older persons: A predictor of functional decline and death. *Archives of Internal Medicine*, *172*(14), 1078–1084. https://doi.org/10.1001/archinternmed.2012.1993

Pool, L. R., Needham, B. L., Burgard, S. A., Elliott, M. R., & de Leon, C. F. M. (2017). Negative wealth shock and short-term changes in depressive symptoms and medication adherence among late middle-aged adults. *Journal of Epidemiological Community Health*, *71*(8), 758–763. https://doi.org/10.1136/jech-2016-208347

Prause, J., Dooley, D., & Huh, J. (2009). Income volatility and psychological depression. *American Journal of Community Psychology*, *43*(1–2), 57–70. https://doi.org/10.1007/s10464-008-9219-3

Rabbitt, P., Donlan, C., Watson, P., McInnes, L., & Bent, N. (1995). Unique and interactive effects of depression, age, socioeconomic advantage, and gender on cognitive performance of normal healthy older people. *Psychology and Aging*, *10*(3), 307–313. https://psycnet.apa.org/doi/10.1037/0882-7974.10.3.307

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Redersdorff, S., & Guimond, S. (2006). Comparing oneself over time: The temporal dimension in social comparison. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations and culture* (pp. 76–96). New York, NY: Cambridge University Press.

Richardson, T., Elliott, P., & Roberts, R. (2013). The relationship between personal unsecured debt and mental and physical health: A systematic review and meta-analysis. *Clinical Psychology Review*, *33*(8), 1148–1162. https://doi.org/10.1016/j.cpr.2013.08.009

Riumallo-Herl, C., Basu, S., Stuckler, D., Courtin, E., & Avendano, M. (2014). Job loss, wealth and depression during the Great Recession in the USA and Europe. *International Journal of Epidemiology*, *43*(5), 1508–1517. https://doi.org/10.1093/ije/dyu048

Roberts, R. E., Kaplan, G. A., Shema, S. J., & Strawbridge, W. J. (1997). Prevalence and correlates of depression in an aging cohort: The Alameda County Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *52*(5), S252–S258. https://doi.org/10.1093/geronb/52B.5.S252

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, *39*(3), 472–480. https://psycnet.apa.org/doi/10.1037/0022-3514.39.3.472

Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. *Psychological Bulletin*, *143*(8), 783–822. https://psycnet.apa.org/doi/10.1037/bul0000102

Sawilowsky, S. S. (2009). New effect size rules of thumb. *Journal of Modern Applied Statistical Methods, 8*(2), 597–599. https://doi.org/10.22237/jmasm/1257035100

Schiavo, A. (2019, January 7). Advisors should change fee structures to attract next-gen clients. Retrieved from https://www.financial-planning.com/news/financial-advisors-should-change-their-price-module-to-attract-new-clients

Schwandt, H. (2018). Wealth shocks and health outcomes: Evidence from stock market fluctuations. *American Economic Journal: Applied Economics*, 10(4), 349–377. https://doi.org/10.1257/app.20140499

Schulaka, C. (2016). Mitch Anthony on why ROI is a dead end and how to explain your value proposition. *Journal of Financial Planning*, *29*(11), 17–21.

Sheeran, P., Abrams, D., & Orbell, S. (1995). Unemployment, self-esteem, and depression: A social comparison theory approach. *Basic and Applied Social Psychology*, *17*(1–2), 65–82. https://doi.org/10.1080/01973533.1995.9646132

Shiovitz-Ezra, S., Leitsch, S., Graber, J., & Karraker, A. (2009). Quality of life and psychological health indicators in the national social life, health, and aging project. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *64*(suppl_1), i30–i37. https://doi.org/10.1093/geronb/gbn020

Schoevers, R. A., Beekman, A. T. F., Deeg, D. J. H., Jonker, C., & Tilburg, W. V. (2003). Comorbidity and risk-patterns of depression, generalised anxiety disorder and mixed anxiety-depression in later life: Results from the AMSTEL study. *International Journal of Geriatric Psychiatry*, *18*(11), 994–1001. https://doi.org/10.1002/gps.1001

Smith, D. M., Langa, K. M., Kabeto, M. U., & Ubel, P. A. (2005). Health, wealth, and happiness: Financial resources buffer subjective well-being after the onset of a disability. *Psychological Science, 16*, 663–666. https://doi.org/10.1111/j.1467-9280.2005.01592.x

Smith, R. H., Parrott, W. G., Ozer, D., & Moniz, A. (1994). Subjective injustice and inferiority as predictors of hostile and depressive feelings in envy. *Personality and Social Psychology Bulletin*, *20*(6), 705–711. https://doi.org/10.1177%2F0146167294206008

Starkweather, J., & Moske, A. K. (2011). Multinomial Logistic Regression. Retrieved from https://it.unt.edu/sites/default/files/mlr_jds_aug2011.pdf

Steffick, D. E. (2000). *Documentation of affective functioning measures in the Health and Retirement Study*. Ann Arbor, MI: University of Michigan.

Strahan, E. J., & Wilson, A. E. (2006). Temporal comparisons, identity, and motivation: The relation between past, present, and possible future selves. In C. Dunkel & J. Kerpelman (Eds.), *Possible selves: Theory, research and applications* (pp. 1–15). New York, NY: Nova.

Suls, J., & Mullen, B. (1984). Social and temporal bases of self-evaluation in the elderly: Theory and evidence. *The International Journal of Aging and Human Development*, *18*(2), 111–120. https://doi.org/10.2190%2F33UX-54WU-AVMH-082T

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is facebooking depressing?. *Computers in Human Behavior*, *43*, 139–146. https://doi.org/10.1016/j.chb.2014.10.053

Taylor, H. O., Taylor, R. J., Nguyen, A. W., & Chatters, L. (2018). Social isolation, depression, and psychological distress among older adults. *Journal of Aging and Health, 30*(2), 229–246. https://doi.org/10.1177%2F0898264316673511

Turvey, C. L., Wallace, R. B., & Herzog, R. (1999). A revised CES-D measure of depressive symptoms and a DSM-based measure of major depressive episodes in the elderly. *International Psychogeriatrics*, *11*(2), 139–148. https://doi.org/10.1017/S1041610299005694

UCLA Institute for Digital Research and Education. (n.d.). Multinomial logistic regression | Stata Annotated Output. Retrieved from

https://stats.idre.ucla.edu/stata/output/multinomial-logistic-regression/

Van Dam, N. T., & Earleywine, M. (2011). Validation of the Center for Epidemiologic Studies Depression Scale—Revised (CESD-R): Pragmatic depression assessment in the general population. *Psychiatry Research*, *186*(1), 128–132. https://doi.org/10.1016/j.psychres.2010.08.018

Vaughan, M. W., LaValley, M. P., Felson, D. T., Orsmond, G. I., Niu, J., Lewis, C. E., Segal, N. A., Nevitt, M. C., & Keysor, J. J. (2018). Affect and incident participation restriction in adults with knee osteoarthritis. *Arthritis Care & Research*, *70*(4), 542–549. https://doi.org/10.1002/acr.23308

Verropoulou, G., & Tsimbos, C. (2007). Socio-demographic and health-related factors affecting depression of the Greek population in later life: An analysis using SHARE data. *European Journal of Ageing*, *4*(3), 171–181. https://doi.org/10.1007/s10433-007-0060-6

Waite, L. J., Cagney, K. A., Cornwell, B., Dale, W., Huang, E., Laumann, E. O., ... & Schumm, L. P. (2013). *National Social Life Health and Aging Project (NSHAP): Wave 2* [Data file and code book]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Waite, L. J., Cagney, K., Dale, W., Hawkley, L., Huang, E., Lauderdale, D., Laumann, E. O., McClintock, M., O'Muircheartaigh, C.A., and Schumm, L.P. (2017). *National Social Life, Health and Aging Project (NSHAP): Wave 3* [Data file and code book]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].

Ward, L. C. (2006). Comparison of factor structure models for the Beck Depression Inventory-II. *Psychological Assessment*, *18*(1), 81–88. https://doi.org/10.1037/1040-3590.18.1.81

Wood, A. M., Boyce, C. J., Moore, S. C., & Brown, G. D. (2012). An evolutionary based social rank explanation of why low income predicts mental distress: A 17 year cohort study of 30,000 people. *Journal of Affective Disorders*, *136*(3), 882–888. https://doi.org/10.1016/j.jad.2011.09.014

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, *106*(2), 231–248. https://doi.org/10.1037/0033-2909.106.2.231

World Health Organization. (n.d.). Depression. Retrieved from http://www.who.int/mental_health/management/depression/en/

Wright, K. B., Rosenberg, J., Egbert, N., Ploeger, N. A., Bernard, D. R., & King, S. (2013). Communication competence, social support, and depression among college students: A model of Facebook and face-to-face support network influence. *Journal of Health Communication*, *18*(1), 41–57. https://doi.org/10.1080/10810730.2012.688250

Yilmazer, T., Babiarz, P., & Liu, F. (2015). The impact of diminished housing wealth on health in the United States: Evidence from the Great Recession. *Social Science & Medicine*, *130*, 234–241. https://doi.org/10.1016/j.socscimed.2015.02.028

Chapter 5 - Conclusion

The overall purpose of this dissertation was to investigate the potential importance of financial perceptions and comparisons on various aspects of well-being for older adults. While objective financial measures have often been included in the literature, understanding the potential importance of subjective and comparative financial measures on well-being was the motivation of this dissertation. The results of the three studies conducted were not as expected. Using data from the NSHAP, a nationally representative sample of older adults, few statistically significant associations were found between perceived financial factors and psychological constructs. However, support was found for connections among psychological health factors, which was anticipated, and a post-hoc analysis provided potential insights into very large downturns in perceived relative income and changes in depressive symptom trajectory.

Chapter Summaries

Essay One: "Who Makes More? Investigating Perceived Relative Income and Happiness in Older Adults"

Essay One established a foundation for the overall paradigm that perceptions and comparisons matter. With the backdrop of symbolic interactionism, Essay One also employed the tenets of the subtheory reference group theory to investigate a connection between perceived relative income and happiness in older adults. The second purpose of the essay was to seek insights into whether comparisons to other Americans or comparisons to peers closer to home held higher influence on individual happiness in older adults. The lack of statistical support found for a connection between perceived relative income and happiness opens the door to future studies. It also upholds that identifying who individuals use as salient referent others may be a complex endeavor and continues to require further exploration.

Essay Two: "Are We Poor? The Enduring Nature of Recalled Childhood Perceived Financial Status"

Essay Two drew upon the life course perspective, which holds that childhood experiences, particularly those that occur during critical periods, are tied to adult outcomes (Elder, Johnson, & Crosnoe, 2003). Specifically, the study sought to assess the potential enduring impact of individuals' recalled perceptions of childhood relative financial status on individuals' current level of anxiety in older adulthood. No statistical support was found between the key independent variable (i.e., perceived childhood relative financial status) and the dependent variable (i.e., anxiety). The connection between the marital status categories of never married, divorced or separated, and anxiety was different than anticipated. These unpartnered groups showed lower instead of higher anxiety than the married or cohabitating participants, which could be explained by marital strain or spousal anxiety as a contagion. Other anticipated connections among psychological health variables (i.e., depressive symptoms, perceived stress, and perceived isolation) and anxiety were confirmed by the analysis results.

Essay Three: "Are Changes in Perceived Relative Income Related to Changes in Depressive Symptomology?"

The third essay sought to include both temporal and comparative components of perceived relative income, and sought to answer the research question, how are changes in individuals' perceptions of their relative income associated with changes in depressive symptomology in older adults? Temporal comparison theory (Albert, 1977) provided the conceptual framework to examine the association between changes over time in perceived relative income and depressive symptomology. Temporal comparison theory submits that people compare themselves in relation to themselves at different points in time (Redersdorff &

Guimond, 2006). Interpersonal – Temporal self-other comparison, in which individuals compare their position relative to others over a span of time, was the focus of the current study (Redersdorff & Guimond, 2006).

Initially, no statistically significant relationship was found between a medium change over time in perceived relative income and depressive symptomology. When looking at very large changes, however, a connection between the two emerged. Those who experience a very large decrease in perceived relative income were more likely (based on marginally significant results) to be in the increase in depression category compared to those whose perceived relative income remained relatively unchanged. Interestingly, those who experienced a large deterioration in perceived relative income were also more likely to be in the decrease in depression category compared to those who did not experience a very large change in perceived relative income. Thus, going down by two or more steps in perceived relative income means depression is also likely to shift, and that shift may be in either direction when compared to those whose perceived relative income did not largely change.

Implications

Without statistically significant support, many of the research questions of how perceived relative income is related to happiness in older adults, who individuals consider as referent others as they make financial comparisons, how recalled financial status is related to anxiety later in life, and how changes over time in perceived relative income is related to depressive symptomology, remain unanswered. Also, almost no connections were found between objective financial measures such as household income and assets and the outcome variables of happiness, anxiety, and depressive symptomology. These results cannot be interpreted as a contradiction to the guiding theoretical perspectives or to support any assertion that the null hypothesis—that

there is no relationship between these subjective and objective measures and components of well-being—is true. Rather, they simply fail to add support using this model and sample. Understanding the relationships between the variables may be complex and require further study.

Perhaps the lack of support for the main hypotheses of the three studies connecting perceived relative income to happiness, perceived family financial status in childhood to anxiety in older adulthood, and medium changes in perceived relative income to depressive symptoms is a hopeful sign. It allows for the opening that happiness may not be reliant on competing and comparing to others, that emotional quality of life in older adulthood does not necessarily have to be elusive to those who grew up perceiving themselves to be economically disadvantaged, and that advancing or regressing one's perceived income compared to others is not a prescription for changes in depressive symptoms.

Only very large downturns in perceived relative income had any bearing on the trajectory of depression symptomology. This may indicate that people may manage smaller shifts well, or that small shifts simply have little influence on depressive symptomology. Results showed that a very large decrease but not a very large increase in perceived relative income was connected to a change in depression, which may point to people feeling the pain of a loss more than the pleasure of a gain, or to adaptation to gains at play. The third study's results also revealed that participants with a very large decline in perceived relative income were both more likely to be in the decrease in depressive symptoms category and also more likely to be in the increase in depressive symptoms category. This might indicate that a very large decline in perceived relative income is experienced differently by different people. For some individuals, as predicted by temporal comparison theory, the downshift in perceived relative income has a negative outcome, increasing the chance of having an increase in depressive symptoms. For others, however,

perhaps the downshift in comparative income is accompanied by other social benefits. For example, the downturn might have been accompanied by improved relationships, or perhaps the change alleviated work, social, or other pressures that might have accompanied their previous, higher relative perceived income standing.

Beyond the key independent variables, results from the studies provide some insights to other pieces of well-being. As anticipated, the various mental health variables measured in each study did exhibit a connection to the outcome variable (happiness, anxiety, or depressive symptoms) measured in each study. These results add support to previous literature that links these variables.

Two topics that can be of interest in studies of older adults are employment status (retirement) and marital status. The third study shed some light on a link between those who had stopped being employed in the past five years. Results showed that these individuals were less likely than those who remained employed to be in the lower depressive symptom group, an outcome which suggests that ending employment due to retirement or other reason does not point to an easing of depressive symptoms. It is possible that those who stop being employed lose some of their social connections while those who remain employed continue or expand their social connections (Eismann, Henkens, & Kalmijn, 2019), which could account for the differences in changes in depressive symptoms between the two groups.

Variables related to partnered status were significant in all three studies. In the first study, those who were partnered were linked to higher levels of happiness. In the second, those who were separated, divorced, or never married were linked to lower levels of anxiety. The third study revealed that those who became unpartnered in the preceding five years were more likely to be in the increased depressive symptom group, and those who had become partnered were

more likely to be in the decreased depressive symptom group. Together, these studies indicate that partnered status bodes well for older adult happiness and for lower depressive symptoms, but does not improve anxiety.

Limitations

There are some important overall limitations identified that span the three studies. All three relied on several self-report measures, which presents a potential limitation in the form of response bias. As many questions were asked in a computer-assisted personal interview setting, social desirability could bias the responses toward answers that respondents felt would be viewed as acceptable by others. Other variables, namely the perceived relative income questions, were asked in the leave-behind survey, opening the door to the possibility of missing data issues from respondents who failed to return this piece of the survey. Another potential limitation is in the use of the various subjective measures, as variation in individual affect at the time of data collection may influence responses.

The models would benefit from additional details for some variables. For example, household income and household assets were measured in bracketed groups, losing details of marginal differences in these measures. Using actual dollar amounts on a continuous scale would have been better for detecting and assessing differences in these financial variables and their connection to happiness, anxiety, and depressive symptom trajectory. Finally, while the data set is a nationally representative sample, it targets a specific age group, thus a limitation of the study is that findings are not be generalizable to the population as a whole.

Future Directions

Various theoretical perspectives include the concepts of relativity—relative positions, reference points, or referent others; and concepts of comparisons—comparisons to others,

comparisons to expectations, and comparisons across time. Yet, much research relies solely on objective measures. Future research might benefit from including subjective and relative measures in their investigations. The paucity of these measures in research could be due in part to the lack of such measures in many secondary data sets. Developers of future surveys might consider adding these elements to their questionnaires.

The difficulty in determining who individuals use in as referent others remains. Is well-being influenced by comparisons to friends, family members, neighbors, co-workers, classmates, and social media connections? Qualitative research would be valuable in finding answers to the question of who people use as salient referent others.

Future surveys and studies could consider that financial perceptions and comparisons may be based on an individual's overall perception of their relative financial position, which may go beyond income to include assets, observed experiences, cost-of-living differences, and other difficult-to-quantify items such as earning potential of referent others. Future studies might also turn their attention to younger age groups. For example, perhaps comparisons and perceptions among young earners matters to well-being measures even if such a connection is not found among older adults. If future connections are found between perceived relative financial standing and well-being outcomes, then the ensuing question becomes whether it is possible to change one's perception or reference point or referent others, and if doing so provides well-being benefits. Experimental research would be needed to uncover such answers.

Further research is needed to better understand the mechanisms behind the relationships that were found between a very large negative change in perceived relative income and the likelihood of being in the increase in depressive symptoms category and the decrease in depressive symptoms group. An exploration of possible contributors to this outcome, i.e.

personality traits, individual histories, or other possible factors is needed. Future qualitative research might also be instrumental in uncovering such answers.

Conclusion

While most associations between perceived financial factors and the psychological constructs were not significant across the three essays, a number of takeaways can be considered. First, this study employed three different theories to look at financial perceptions, comparisons, and well-being outcomes, underscoring the potential importance of subjective measures in research. The theme of comparisons throughout highlighted the difficulty and lack of uniform way of determining who individuals consider as referent others. Some anticipated connections among psychological health variables (i.e., depressive symptoms, perceived stress, and perceived isolation) and anxiety were confirmed by the analysis results.

Given previous research and theories used, the lack of statistically significance across all three essays is surprising. However, the results do add to the literature, with very large negative relative changes predicting changes in depression. The results may also provide insights, at least for older adults. It is possible that older adults perceive their relative income differently than their younger counterparts. Perhaps with maturity comes a sense of self rather than looking to others for how one feels about their own situation.

References

Albert, S. (1977). Temporal comparison theory. Psychological Review, 84(6), 485–503. https://psycnet.apa.org/doi/10.1037/0033–295X.84.6.485

Eismann, M., Henkens, K., & Kalmijn, M. (2019). Why singles prefer to retire later. *Research on Aging*, *41*(10), 936–960. https://doi.org/10.1177/0164027519873537

Elder, G. H., Jr., Johnson, M. K., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. Mortimer & M. Shanahan (Ed.), *Handbook of the life course* (pp. 3–19). New York, NY: Springer.

Redersdorff, S., & Guimond, S. (2006). Comparing oneself over time: The temporal dimension in social comparison. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations and culture* (pp. 76–96). New York, NY: Cambridge University Press.

Appendix A - Correlation Table (Ch. 2)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Happiness	-										
2. Perceived relative income (national)	0.13***	-									
3. Perceived relative income (peer)	0.10***	0.77***	-								
4. Loneliness	-0.29***	-0.11***	-.11***	-							
5. Depressive symptoms	-0.44***	-0.16***	-.13***	.38***	-						
6. Physical Health	0.22***	0.22***	.21***	-.16***	-.34***	-					
7. Education	0.11***	0.41***	.35***	-.01	-.13***	0.28***	-				
8. Gender	0.03	-0.09***	-.08***	.05*	.11***	0.01	-0.05**	-			
9. Partnered status	0.08***	0.24***	.23***	-.19***	-.13***	0.07***	0.15***	-0.21***	-		
10. Age	-0.03	-0.07***	-.07**	.03	.08***	-0.10***	-0.14***	-0.01	-0.24***	-	
11. Household income	0.14***	0.60***	.56***	-.11***	-.18***	0.28***	0.52***	-0.11***	0.38***	-0.23***	-
12. Net worth	0.15***	0.50***	.46***	-.09***	-.18***	0.29***	0.43***	-0.08***	0.28***	-0.05*	.57***

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix B - Correlation Table (Ch. 3)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Anxiety	-										
2. Perceived relative family financial status	-0.01	-									
3. Perceived isolation	0.30***	-0.11***	-								
4. Functional health (ADL)	-0.13***	0.03	-0.15***	-							
5. Physical health	-0.20***	0.06*	-0.17***	0.45***	-						
6. Depressive symptoms	0.45***	-0.03	0.33***	-0.36***	-0.36***	-					
7. Perceived stress	0.53***	-0.02	0.32***	-0.19***	-0.25***	0.41***					
8. Age	-0.06**	-0.12***	0.07***	-0.17***	-0.03*	-0.06***	0.02	-			
9. Education	-0.10***	0.14***	-0.08***	0.15***	0.27***	-0.14***	-0.17***	-0.10***	-		
10. Net worth	-0.09***	0.06*	0.13***	0.14***	0.23***	-0.19***	-0.14***	0.13***	0.28***	-	
11. Household income	0.10***	0.05*	-0.18***	0.22***	0.27***	-0.22***	-0.19***	-0.11***	0.41***	0.48***	-
12. Gender	0.08***	0.01	-0.01	-0.03*	0.01	0.12***	0.07***	-0.01	-0.03*	0.01	-0.08***

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix C - Correlation Table (Ch. 4)

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Change in depressive symptoms	-										
2. Change in perceived relative income	0.006	-									
3. Change in physical health	-0.118**	-0.02	-								
4. Change in functional health (ADL)	-0.088**	-0.03	0.20***	-							
5. Change in perceived isolation	0.114***	-0.02	-0.01	0.011	-						
6. Change in anxiety	0.101**	0.02	-0.04	-0.002	0.10**	-					
7. Change in happiness	-0.260***	0.01	-0.07*	0.070**	-0.09***	-0.11***					
8. Change in household income	-0.019	-0.13***	-0.05*	-0.026	-0.04	0.03	0.005	-			
9. Change in net worth	-0.028	-0.03	0.04	-0.074*	-0.03	0.01	0.002	0.17***	-		
10. Age	0.048*	-0.06**	-0.07**	-0.156***	0.02	0.01	-0.055**	0.12***	0.05*	-	
11. Gender	0.008	0.04	0.04*	0.008	0.09***	0.01	-0.005	-0.02	0.10***	-0.01	-
12. Education	-0.003	0.05*	-0.02	0.027	.02	-0.02	-0.046*	-0.11***	-0.18***	-0.10***	-0.03*

* $p < .05$, ** $p < .01$, *** $p < .001$