THE USE OF SOCIAL AND TEMPORAL COMPARISON TO EXPLORE THE

PROCESS OF QUALITY OF LIFE EVALUATION IN OLDER ADULTS

by

JOSEPH FRANCIS CHANDLER

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Psychology
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2009

ABSTRACT

QOL measurement is an enormous field that spans multiple disciplines (Felce & Perry, 1995;

Phillips, 2006). Calls for its unification, clarification, or abandonment have been common for

nearly four decades (Abeles, Gift, & Ory, 1994; Rapley, 2003). Improving QOL

conceptualization and measurement is an important endeavor because of the many ways in

which QOL measures are used, and the significant effects of these QOL applications,

including influencing decisions about drug efficacy and cost effectiveness, and subsequent

health policy decisions. Amidst the hundreds of definitions and scales and thousands of

published papers, QOL scientists agree that an individual's personal evaluative process is of

utmost importance in the formulation of QOL. Yet, there have been few attempts to measure

this process, and no attempts to manipulate it. This dissertation sought to examine, quantify,

and manipulate a portion of the personal evaluative process in self-reporting an individual's

QOL by examining it through the lens of social and temporal comparisons within the bounds

of the WHOQOL-BREF. Using a mixed-methods approach, the results of this dissertation

demonstrated that social and temporal comparisons play a significant role in the personal

evaluative process of self-reporting QOL, and that manipulating what type of comparison an

individual uses can significantly impact the numerical outcome of the WHOQOL-BREF.

Results are discussed in terms of impact on the use of QOL as an outcome measure in

research, policy, and practice.

DEDICATION

   This endeavor is dedicated to Rev. Mr. William F. Taffee, Jr. and Mrs. Lois Elizabeth

Taffee, my grandparents, for showing me the simple strength and enduring wisdom of

choosing to be happy.

ACKNOWLEDGMENTS

To Dr. Jamie DeCoster: thanks for sticking with me from start to finish. You've been a friend and mentor in equal measure, which is not an easy combination to achieve.

To Dr. Lynn Snow: thanks for taking on the wandering cognitive-social-gero-stats kid and managing to keep him on task for the last 3 years. Among other things, I'm thankful for your ability to happily challenge my weaknesses and simultaneously praise my strengths. As any basketball coach I've ever had can tell you, motivation can be a tricky task with me, and you nailed it. I'm lucky to count you as a mentor and friend as well.

To my esteemed committee: thanks for the guidance, the challenge, and the patience needed to sit on the committee of a person whose ideas are often bigger than his capacity to execute them. To Dr. Sheila Black, for modeling what it is to be a gerontologist, professionally and personally. To Dr. Jim Hamilton, for your motivation to *really think* and your ability to see everything from a slightly, and sometimes not-so-slightly, different angle. To Dr. Karl Hamner, for showing me the elegance of qualitative inquiry, and for sharing a true love of the research process. To Dr. Steve Prentice-Dunn, for convincing me that a person can be a successful scientist, an amazing teacher, a family man, and a true outdoorsman all at the same time. These are all things I aspire to, and because of your example I no longer think of their coexistence as impossible.

To the good people at the Naval Aerospace Medical Research Laboratory aboard NAS Pensacola, Fl, for giving me a chance. To Dr. Jeffrey Phillips, for being an example, to

Dr. Rita Simmons, CDR, MSC, USN, for the clear-eyed motivation, and to Dr. Ed Trautman, for showing me the merit of acting the part.

As anyone who knows me knows, *I get by with a little help from my friends*. You know who you are, and you know I couldn't have done this without you. Thank you.

To my family: my life is driven by your individual examples of strength, hard work and success, and built upon your collective love and unfailing support. Thank you for freedom to pursue an education for 23 straight years. I'm done this time. I promise.

Finally, to the love of my life: my partner, counselor, coach, editor, best friend and beautiful wife, Tonya, for being there through every step. I do what I do because of you. Thank you.

LIST OF ABBREVIATIONS AND SYMBOLS

df   Degrees of freedom

F   Fisher's F ratio

M   Mean: the sum of a set of measurements divided by the number of measurements
in the set

N   Sample size

p   Probability associated with the occurrence under a null hypothesis of a value
as extreme as or more extreme than the observed value

r   Pearson product moment correlation coefficient or Point bi-serial correlation

SD   Standard deviation: the variability in a given set of values

t   Computed value of a *t* test

η_p^2 Eta squared: a measure of the magnitude of a relation between two variables

$<$ Less than

$=$ Equal to

CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

The Importance of Quality of Life as a Concept

Quality of life (QOL) measurement has developed into a significant gerontology research area in the last 20 years. The latent construct of QOL refers to an individual's overall state of well-being, including their psychological, social, physical, and functional well-being. QOL is measured through an individual's subjective perception (i.e., self-ratings) of their condition in psychological, social, physical, and functional well-being domains as well as objective ratings (i.e., measurements based on information gathered through another's perception) of the individual in each of these domains (World Health Organization, 1995). QOL has been used as a tool to compare the burden of different diseases, as an end-point in clinical trials for pharmacologic and non-pharmacologic therapies, as a tool to monitor outcomes in clinical practice, as a tool in the calculation of quality-adjusted life-years (QALYs), as a determinant of public policy, and as a source of information for patients making health care choices (Khanna & Tsevat, 2007). The broad use of QOL, from individual health care choices (Tsevat et al., 1994) to cost-effectiveness analysis of entire healthcare interventions and their potential subsequent influence on health policy, merits the dedication of resources to further understand and improve QOL measurement.

The Individual Self-Rating Process: A Gap in the QOL Measurement Literature

Cummins (1997) identified over 100 different definitions of QOL that had been proposed prior to the new millennium, and Armstrong and Caldwell (2004) estimate that 5,000 plus

papers dealing with QOL are being published each year. These staggering numbers are indicative not only of the enormous popularity and importance of QOL as a tool in research and practice, but also of the diversity in how it is considered. Despite the proliferation of QOL definitions and measures, the core idea of QOL as a multi-dimensional construct with both common content areas and personal evaluative process influences remains. QOL researchers tend to agree that the core QOL content areas are psychological, social, physical, and functional well-being (Muldoon, Barger, Flory, & Manuck, 1998). In contrast to the amount of effort that has been dedicated to the examination of the content that should be included in QOL measurement, the process of how an individual evaluates this content has received relatively little attention. This process is recognized as key to QOL conceptualization and measurement, yet far less is known about it; Hendry and McVittie (2004) present a review of the difficulties in accounting for the personal evaluative process in QOL, concluding that actual QOL is such a phenomenologically personal concept that it can only be viewed from an individual, experiential standpoint. In a review of QOL measurement across disciplines, Walker (2005) suggests that the personal process of evaluating QOL content exerts such a strong influence on resulting scale scores that QOL should be studied only from an individually contextualized perspective. Leplege and Hunt (1997) go as far as calling QOL an "idiosyncratic mystery," its measurement too variable from person to person to be responsibly used in medical decision-making, due to the personal evaluative process. Still, it remains that QOL is used extensively in important clinical and research applications (Khanna & Tsevat, 2007), and that the pursuit of its standardized measurement is growing rather than diminishing (Armstrong & Caldwell, 2004). We must

2

therefore increase our understanding of the process an individual goes through when assigning QOL self-ratings. This represents an important gap in the literature that, if filled, could lead to improvements in QOL measurement. I propose that application of a social and temporal comparison framework to the study of the personal evaluative QOL self-rating process could help identify systematic inter-individual variability in the ratings, providing direction in how to better standardize the QOL self-rating process.

Social Comparison Theory (SCT) (Festinger, 1954) is a theoretical framework for studying the process by which individuals make self-evaluative judgments. SCT holds that we look to individuals similar to ourselves when we are unsure of the proper action in a situation. In other words, people use information from and about other people to gain knowledge about themselves (Cooley, 1902; Mead, 1934; Festinger, 1954). This concept has been expanded to include the idea of social directional (e.g., Latane, 1966; Wills, 1981; Wood, 1989; Suls, Martin, & Wheeler, 2002) and temporal comparisons (Markus & Nurius, 1986; Cross & Markus, 1991; Markus & Herzog, 1991; Herzog & Markus, 1999; Frazier, Hooker, Johnson, & Kaus, 2000). Social directional comparisons are used to gain knowledge about our current state relative to a good-bad continuum. For example, upward social comparisons involve looking to people better than you, and downward social comparisons involve looking to people worse than you to evaluate and understand your own status. Temporal comparisons are used to gain knowledge about our current state relative to how we are personally changing over time. We may look at ourselves in the past or what we think we'll be like in the future to inform current judgments. Self-ratings of QOL are likely affected by these comparisons, so it follows that social and

temporal comparison theories may offer a framework through which to interpret the personal evaluative process of QOL self-report, and therefore, QOL measurement.

Statement of the Problem

QOL is an important construct with broad application. Its popularity as a research topic and practice tool is well documented, to the point that keeping up with its continued development is difficult, and its proper application is therefore hampered. Researchers and practitioners were making calls to streamline the QOL field as long as 40 years ago, saying, "The present state of the [QOL] trade seems to be one in which each investigator or practitioner feels an inner compulsion to make his own scale and to cry that other existent scales cannot possibly fit his own setting" (Lawton & Brody, 1969). While our knowledge of the content areas of QOL is strong, our understanding of the process of an individual's evaluation of these content areas is lacking. In short, we are using admittedly subjective measures without a full understanding of the subjective process by which individuals make their judgments. The social psychological framework of gathering and evaluating self-knowledge through social and temporal comparison offers a logical guide to exploring the personal evaluative process of an individual's QOL judgment. Application of this framework to the current problem will allow us to improve current measurement of QOL, add to our conceptual knowledge of the construct, and ultimately use those gains to better apply QOL as a research tool and clinical outcome measure.

Statement of Purpose

The current study seeks to understand the personal evaluative process in QOL measurement. Application of social and temporal comparison frameworks to this problem makes

it possible to better measure and further define QOL, tie it to other types of self-knowledge, and better understand the role of QOL as an outcome measure in research, policy, and practice.

Specific Aims and Hypotheses

This mixed methods investigation consisted of two studies. In Study 1 I used qualitative interviews to investigate the following research question:

What is the nature of an individual's internal experience when estimating his or her own QOL? That is, when researchers ask the question, "What is your quality of life?" what sources of information are being drawn upon in the subjective evaluation used to answer it?

The results of Study 1 informed the construction of primes to manipulate participants' use of comparisons in Study 2.

In Study 2 I used a priming manipulation to investigate the following research question:

Will an individual's QOL responses vary depending on the social and temporal comparisons suggested in an assessment?

I hypothesized that QOL scores would vary significantly by primed comparison type. Directional hypotheses were developed at the end of Study 1, informed by the patterns observed in the Study 1 data, and are discussed in detail under the Study 2 section of this document.

CHAPTER 2

LITERATURE REVIEW

Overview

This section has three major parts. First, I present a brief history of QOL measurement, highlighting its application to older adults, the reasons for its proliferation, and the personal evaluative process gap in its current measurement. Second, I present a review of the social and temporal comparison theoretical framework as a means to quantify the personal evaluative process in QOL self-report and begin to fill the corresponding knowledge gap in QOL measurement. Finally, I summarize these points in an integrated statement of purpose for the dissertation.

A Brief History of QOL Measure Development and Implementation

Multiple QOL measurement reviews have been published in the last three decades. To orient myself to the history of QOL measure development and implementation, I read a representative sample of 14 reviews (Najman & Levine, 1981; Sander, Egger, Donocan, Tallon, & Frankel, 1988; Greenfield & Nelson, 1992; Abeles, Gift, & Ory, 1994; Gill & Feinstein, 1994; Bowling, 1995; Felce & Perry, 1995; McDowell & Newall, 1996; Alison, Locker, & Feine, 1997; Bowling, 1997; Haas, 1999; Prutkin & Feinstein, 2002; Rapley, 2003; Phillips, 2006) for this project. The majority of these are bibliographic in nature and have four main sections framed by four main observations. First, there are numerous definitions of QOL that have led to numerous QOL measures (e.g., Haas, 1999). Second, QOL is a complex concept, made up of common content areas (such as physical health) as well as some subjective component from the

6

individual evaluating those content areas (e.g., Felce & Perry, 1995). Third, most authors

suggest that the myriad concepts should be integrated in some way, and then offer an example of

integration (e.g., Phillips, 2006). Finally, there is usually a discussion of how important the

personal evaluative process is to making a QOL self-rating, though no resolution to this

discussion is offered (e.g., Rapley, 2003).

Among the articles I reviewed, Prutkin and Feinstein (2002) stands out. The authors

uniquely document the earliest attempts at QOL measurement and use this early review as an

exposition of the reasons for the field's proliferation and subsequent shortcomings, whereas

most reviews simply state that QOL is a fragmented field and offer no historical context as to

why. Prutkin and Feinstein (2002) posit that scientists keep creating different QOL scales

because the scales that have given rise to modern QOL measurement were never intended to

capture the varied and personal ways individuals think about their own QOL, even when

combined with more recently measured subjective factors, such as subjective well-being (SWB).

That is, the roots of QOL measurement were not designed to take into account an individual's

personal evaluative process.

To understand why the personal evaluative process is not accounted for in current QOL

measures, we must first understand the underlying ideas dominant in their formulation. A review

of Prutkin and Feinstein (2002) allows us to follow the early development of three major

categories of QOL measures (functional status scales, social indicators, and measures of

subjective well-being), providing us with an understanding of how these three concepts became

integrated into what we currently think of as Quality of Life. I then review core measurement

challenges in QOL, modern QOL measurement in older adults, and briefly present the World

Health Organization Quality of Life assessment (WHOQOL) as an example of a QOL

instrument well-suited for use in exploring the personal evaluative process in QOL

measurement.

A Review of Prutkin and Feinstein (2002)

  Overview. Prutkin and Feinstein (2002) offer a bibliographic review of early QOL scale

roots, starting with functional status scales of the early twentieth century and ending with the

subjective well-being movement into the 1980's. The following is a synopsis of their review

including illustrations from other recent reviews where relevant.

  Functional Status Scales. Early attempts in the 1930's and 40's at QOL quantification

were focused on objective measurements of functional health and functional ability. This broad

definition included many aspects of what we now label Activities of Daily Living (ADLs) and

Instrumental (or Independent) Activities of Daily Living (IADLs), such as the ability to perform

routine self-care, complete basic physical activities, and live independently. These utilitarian

scales were employed as indicators of care resource distribution.

  Soon, researchers and practitioners began considering a finer grade of detail in classifying

individuals by QOL-related factors. Prutkin and Feinstein (2002) cite that in 1947, Zeman

published a classification containing categories for functional capacity *as well as* occupational

skill in older adults in an assisted living facility, furthering the formalization of ADLs and

IADLs as a precursor to QOL measurement.

  Prutkin and Feinstein (2002) stress that even in these early stages, scientists realized that

measuring physical functional status was often not enough to capture an individual's overall impairment, fitness, happiness, or *quality* of life – mental and emotional aspects were important as well.

Social, Psychological, and Environmental Factors: Social Indicators. In 1948, the World Health Organization defined health as "not only the absence of infirmity and disease but also a state of complete physical, mental, and social well being," solidifying the idea that an individual's health and well-being is not just physical, but includes psychological, environmental and social factors (World Health Organization, 1948). This definition sparked many governments, including in the United States, to begin quantifying public well-being as an outcome measure for the success of social programs, as well as a general metric for the state of its people. Scales now put the spotlight not only on the objective indicators emblematic of the previous 20 years, but also people's satisfaction with them, including positive aspects of emotional and mental health. Though social indicators are more focused on populations than individuals, this critical period in the historical development of QOL measurement illustrates the shift from an early utilitarian approach to the more subtle, complex conceptualization of QOL we know today. A large part of that shift can be seen in measures of subjective well-being (SWB).

Measures of Subjective Well-Being. In the 1970's, social and medical science researchers began considering the cognitive processes underlying QOL perception, not just the content categories included in its varied definition. This placed a high degree of importance on the individual's subjective evaluation of their situation, independent of the constituent content of

that situation.

Prutkin and Feinstein (2002) point to a prototypical example of SWB scales of this era in the work *The Quality of American Life* (Campbell, Converse, & Rogers, 1976), in which researchers asked a global life satisfaction question, questions aimed at satisfaction in individual domains such as employment, and ten questions about the respondent's life on a scale from enjoyable to miserable and rewarding to disappointing. The resulting answers were scored into several sub-domains, from satisfaction with functional status to affective balance.

The underlying ideas from this and other similar instruments that focused on the respondent's personal evaluation of some set criteria gave rise to the first attempts to capture overall "life quality." All of these early scales were essentially combinations of functional status (mostly, due to their medical application, ADLs and IADLS), objective factors such as socio-economic status from social indicators research, and SWB or life satisfaction. In this way, early QOL scales attempted to capture the totality of an individual's experience, at least that part of their experience relevant to the outcome of the study in which the scale was being used (for example, in a drug therapy study).

The Legacy of Early QOL Measurement Attempts

The concept of QOL was not born of itself; rather, it is a legacy of early utilitarian and subjective perception focused scales, the former being too rigid to capture an individual's unique experience, and the latter being too vague to be widely applicable. As a result, researchers often create a new QOL scale feeling that the condition or population they are studying warrants slight changes in the content of how each of component is measured, based on the idea that different

questions seem applicable based on what abilities or disabilities are present in a population of people with a certain disease, disorder, or other defining characteristic. As an illustration of this point, as of September 20th, 2009, the Patient Reported Outcome and Quality of Life Instruments Database (PROQOLID) contained 663 QOL instruments with the count growing monthly (Mapi Research Trust, 2009).

Modern Challenges in QOL Measurement

QOL Definition. A small sample of current QOL definitions reflects the inability to completely capture QOL as a concept, an inability that I posit is due in part to the lack of understanding of the individual evaluative process and in part to the largeness of the concept. The definitions offered below emphasize both the amorphous nature of the modern QOL definition as well as a few common themes in its measurement taken from the functional status, social indicators, and SWB precursor literatures. The majority of definitions admit that QOL is a broad construct and that an individual's personal evaluation of their own experience plays a large role in its measurement. Haas (1999) writes,

> *QOL is a multidimensional evaluation of an individual's current life circumstances in the context of the culture in which they live and the values they hold. QOL is primarily a subjective sense of well-being encompassing physical, psychological, social and spiritual dimensions. In some circumstances, objective indicators may supplement or, in the case of individuals unable to subjectively perceive, serve as proxy assessment of QOL.*

Janse (2004) embodies brevity without losing the sense that QOL is a broad term, saying, "Quality of life is multidimensional in construct including physical, emotional, mental, social,

11

and behavioural components." Felce and Perry (1995) review several authors' definitions. For instance, they offer Emerson's (1985) conceptualization that QOL is "the satisfaction of an individual's values, goals and needs through the actualisation of their abilities or lifestyle." Lehman shuns specificity altogether, stating that QOL is "a subjective matter, reflected in a sense of global well-being" (1983).

The reasons for debate in the QOL literature concerning the specific content that should be included in the QOL definition are clearer given this historical context. In review, QOL has been used to describe societal and economic well-being as well as individual welfare (Felce & Perry, 1995). It has been conceptualized as an individual's sense of well-being, life satisfaction, functional status, and health status (Haas, 1999). Other definitions focus on social indicators on a personal level, such as financial stability and interpersonal relationship status and satisfaction (Vellone, Piras, Talucci, & Cohen, 2008).

Defining QOL in the modern context becomes especially difficult when one considers the many analogous terms that exist around it, and are at times included in it. We have already discussed functional status, social indicators, and subjective well-being as precursor concepts. The continued use of these concepts means that they are often used in interchangeable or closely related ways to the QOL term in the modern literature. Health related quality of life (HRQOL) is another closely related, often substituted, term: HRQOL is a subcategory of QOL intended to focus on illness and treatment as aspects of QOL and is very closely related to functional status (e.g., Hyland, 1992). QOL and HRQOL naturally share many conceptual components (such as self-rated health [SRH]) and existing literature supports the idea that they are difficult to

differentiate (Farquar, 1995; Frytak, 2000). However, QOL reviews that include HRQOL generally agree that QOL is a broader term, again encompassing something subjective beyond HRQOL (Patrick and Chiang, 2000). HRQOL is directly tied to the early concepts in QOL measurement, such as SWB, SRH, happiness, and life satisfaction (Campbell et al., 1976). However, Sirgey and colleagues (2006) posit that even when these related concepts are considered together, QOL is still not properly captured, as the evaluative process remains unquantified.

An Example of QOL Item Construction

To emphasize the importance of the personal evaluative process, Stewart and King (1994) suggest that at its most basic level the term *quality* connotes perception or subjective evaluation of something by the individual (in this case, life). Taking QOL in older adults as an example, and as a lead in to the target population of the dissertation, we can deconstruct the possible variables that follow from this starting point. For instance, as already established, domains of QOL can range from subjective ratings of life satisfaction to seemingly objective ratings of physical functioning. Within these domains lie content areas, where specific instances of what the domains encompass must be identified. For example, one must decide what constitutes physical functioning; when quantifying an individual's ability to walk, some definitions of QOL might include distance and speed while others do not take those aspects into account. Stewart and King (1994) stress that it is critical to identify what is of interest in each domain and content area by setting the response dimensions for them. Is the content area of an individual's ability to walk measured as a simple presence or absence of the ability? Or is it

13

measured as the individual's perception of their ability? Or, is it further quantified as distance, speed, and frequency of walking? We must also take into account social norms of functioning in this case: perhaps the respondent does not perform the task in question out of habit, and not as an indicator of QOL. For instance, someone with access to an elevator at all times may walk less than someone who must climb several flights of stairs to get to work. Further, measuring QOL in an older adult population presents its own unique set of challenges on the conceptual, methodological, and measurement levels.

Stewart and King (1994) describe instances of the wide variability in quality of life in older adults, concerns about the time frame when reporting quality of life, whether the investigator is concerned with states or traits, the order in which questions are asked and potential priming effects therein, method of administration of the instrument, and many other issues. Clearly, even the most solid aspect of QOL measurement, agreed upon common content areas, presents a complex challenge in their formulation. While that challenge is addressed in a near constant fashion (some 5,000 new QOL papers are being published in medical journals each year [Armstrong & Caldwell, 2004]), this dissertation seeks to explore the personal evaluative process so often mentioned, but thus far empirically ignored, by QOL researchers.

QOL in Older Adults

Stewart and King's (1994) broad considerations shed light on the larger issue that many QOL instruments applied to older adult populations were normed on much younger groups, and that the theoretical conceptualization of QOL may be quite different for older adults compared to younger adults (Bowling & Gabriel, 2004; Walker, 2005). There is a paucity of older adult-

specific instruments in the QOL literature, even though QOL measurement is most broadly

applied to this population (Hendry & McVittie, 2004; Power, Bullinger, & Harper, 1999). In

light of multiple reviews pointing out this fact in the early 2000s (Frytak, 2000; Hendry &

McVittie, 2004; Power et al., 1999), efforts to capture older adult-specific QOL have increased

(Power, Quinn, & Schmidt, 2005). These efforts have yielded consistent patterns, such as the

inclusion of constructs capturing family and cohort relationships, independence, spirituality, and

fixed-income finances in weights that may be different than those for younger adults (Brown,

Bowling, & Flynn, 2004).

An excellent example of this new focus on older adults specifically can be seen in the

World Health Organization's (WHO) development of an older adult specific companion module

to their seminal QOL scale, the WHOQOL scale. The companion module, the WHOQOL-OLD,

is still in psychometric testing, and distribution is limited. The module represents further

definition of domains important to older adults, including sensory abilities, autonomy, past,

present and future activities, social participation, death and dying, and intimacy. Total scores are

calculated for each domain and examined in addition to scores from the WHOQOL-100, or its

briefer version, the WHOQOL-BREF (WHO Group, 1995). The module shows promise for use

with older adults (Peel & Bartlett, 2007), displaying good internal consistency (average

Cronbach's alpha = .84 across domains) and construct validity in relation to the SF-12 (Ware,

Kosinski, Turner-Bowker, & Gandek, 2002).

Not all attempts at QOL measurement in older adults have produced such promising

results. Halvorsrud and Kalfoss (2007) recently reviewed 47 publications dealing directly with

15

quantitative measurement of QOL in older adults. The authors focused on the applicability of

standard QOL assessments to an older adult population as well as the psychometric properties of

the measures, and reviewed the conceptual framework upon which the studies / measures were

based, if any. The article conclusion captures the wide variability in study / measure rigor:

> *…a great majority (87%) lacked a conceptual framework, and a third lacked any*
>
> *formal definition of QOL. Almost two-thirds of the studies focused on QOL, where*
>
> *HRQOL was used as an overlapping term. Although construct validity was*
>
> *reported in the majority of the studies, minimal empirical evidence was provided*
>
> *for other psychometric properties of the instruments applied... More than half of the*
>
> *studies did not report any methodological considerations given to older adults (2007).*

The "other psychometric properties" mentioned by the authors included: reliability (both internal

consistency and test re-test reproducibility), responsiveness to change (sensitivity), content

validity, interpretability in comparison with normative data, and instrument acceptability

(willingness of an individual to complete an instrument). Each of these were at least lacking, and

many times absent, from the reviewed studies.

Of largest concern is the fact that 87% of the studies were not based on some sort of

conceptual framework. This is clearly reflected in the breadth of definitions cited thus far in the

current document. Halvorsrud and Kalfoss (2007) conclude their review with a call for "the

development of common QOL assessment models that are person-centered, causal, and multi-

dimensional…" They suggest, along with other recent relevant reviews, that more work is

needed in clearly identifying the content areas that best discriminate and display responsiveness

to change. Short of massive interdisciplinary agreement, we may begin to outline common

factors in QOL measurement by isolating common factors affecting the *subjective evaluation*

process, as proposed in this dissertation.

QOL Definition Summary

While disagreement over the detail of a QOL definition is widespread, we are left with

common bases upon which to build, especially in the content areas that are important to

measuring QOL such as psychological, social, physical, and functional well-being (Muldoon,

Barger, Flory, & Manuck, 1998). The definitions reviewed here also reflect the near consensus

that an individual's personal evaluation of these content areas is key in measuring QOL. Haas

(1999) calls it "subjective sense," Emerson (1985) refers to "an individual's values…" and

Lehman (1983) calls QOL a "subjective matter."

Choice of QOL Instrument for the Dissertation and An Example of QOL Validation

In light of the issues raised by Halvorsrud and Kalfoss (2007), Stewart and King (1994),

Hendry and McVittie (2004), and many others, it is important for this project to base its

proceeding on an appropriately broad and representative definition of QOL. This can be

achieved by looking to a gold-standard measure rooted in the historical development of the QOL

field reviewed above. In addition to the growing recognition of the importance of respondent

perception or evaluation of QOL in a subjective manner, most modern definitions of QOL, such

as those heretofore cited, are predicated on the World Health Organization's idea that health is

not only the *absence of disease*, but also the *presence of positive aspects of being* (World Health

Organization, 1948). These two basic tenets are reflected in the QOL definition offered by the

World Health Organization (WHO). The WHO states that QOL is an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (World Health Organization, 1995). For its firm historical roots, broad definition, strong psychometric properties, cross-cultural validation, and ease of administration and scoring, I used the WHO definition and measure of QOL as the basis for my dissertation. Its extensive testing also affords an example of how QOL measures are validated.

The WHOQOL-100, WHOQOL-BREF, and WHOQOL-OLD

The WHOQOL-100 (World Health Organization, 1995) is a generic self-report measure of QOL consisting of 100 items on a five-point Likert scale. The WHOQOL-100 was developed at 15 sites worldwide to account for cultural differences, and its structure reflects the issues that scientists and individuals from the general population in each of the field trial centers felt were important to quality of life. The result is six broad domains and twenty-four subscales of quality of life. Four items are included for each facet, as well as four general items covering subjective overall QOL and health, producing a total of 100 items in the assessment. The six domains (physical health, psychological health, level of independence, social relationships, environment and spirituality/religion/personal beliefs) are indicative of the WHO's definition of QOL. The instrument has excellent psychometric properties and has been widely used since its inception. A brief review of the development and psychometric validation of the WHOQOL instrument is offered next.

Development and Psychometrics. The World Health Organization Quality of Life (WHOQOL) Assessment was developed using a standard method employed by the WHO that is unique in its cross-cultural, simultaneous multi-site development. The WHOQOL development method (WHOQOL Group, 1995) consists of three features. First, it uses a "simultaneous development" approach by deriving, pre-testing, and then iteratively testing the measure at 15 sites internationally at the same time. These "field centers" were picked to represent a broad cross-section of different levels of industrialization, health care technology and availability, and other socio-cultural factors. This internationally collaborative approach has practical advantages, such as replicating results in 15 different samples at once, as well as conceptual advantages, such as the ability to identify truly universal aspects of QOL by observing how the concept is defined in different sample groups (from general healthy populations to those suffering from arthritis or headaches). Second, the WHOQOL was developed from the ground-up in a "grassroots" fashion, drawing on input from theoretical and practical experts in QOL from universities to hospitals, as well as from lay people in community and health care settings. At every stage of development, from initial conceptualization to finalization of item wording, the WHO returned to these original groups as well as additional groups with each pass, re-evaluating, revising, and consolidating items. Third, the WHO drew upon its extensive experience in translation to ensure that the scale items were as comparable as possible across versions. They did so through an iterative process of forward and backward translation with bilingual and monolingual groups at each stage of development.

These three features were integrated into a specific four-step process of scale development: concept clarification, qualitative pilot, development pilot, and field test. In the concept clarification phase, an international panel of QOL experts was assembled to produce a common QOL definition and the standard study protocol outlined briefly here. After the expert panel reached relative consensus, the WHO conducted a qualitative pilot including expert review and focus groups to help delineate domains and sub-domains from the expert panel definition. These domains and sub-domains were then given to additional expert and lay groups for initial question writing in order to develop a global pool of questions for the development pilot. In the development pilot, a 300-question standardized form of the WHOQOL was given to 250 patients suffering from various ailments as well as 50 healthy participants at the 15 field centers. The results were used to further refine the structure of the scale by discarding under-performing and inconsistent items. The final phase, the field test, involved traditional psychometric testing of the common 100-question pool, including the instrument's sensitivity to change, test-retest reliability, and criterion validity, focusing on convergent, discriminant, and predictive validity. For the United States version, this was accomplished at The University of Washington field center.

The WHOQOL-100 US version displayed excellent psychometric properties in its field test. Bonomi, Patrick, Bushnell, and Martin (2000) tested the instrument in a sample of 443 adults (251 chronically ill, 128 healthy, and 64 childbearing), for reliability (internal consistency, test-retest), construct validity (convergent, discriminant), and responsiveness to change. Internal consistency alpha scores ranged from .82 to .95. Inter-class correlations ranged

from .83 to .96 across a two-week test-retest interval. The instrument converged well with the

Short Form-36 and the Subjective Quality of Life Profile, providing evidence of validity on both

functional and more subjective aspects of QOL, consistent with the WHO's QOL definition. The

instrument was able to successfully discriminate among the diverse samples in the study. The

authors predicted that healthy individuals would have higher physical and independence domain

scores than the childbearing women and chronically ill participants, since physical capability

and independence are often compromised by pregnancy and age. Additionally, the authors

hypothesized that childbearing women would have higher psychological and social domain

scores due to the social support and positive anticipation of having a baby. These hypotheses

were confirmed, except for the expected difference in social domain score. Finally, the authors

predicted that physical and independence domain scores as well as the overall QOL and self-

rated health questions would improve following childbirth in childbearing women. These

hypotheses were also confirmed, demonstrating responsiveness to change.

To date over 265 studies have been published in which the WHOQOL was used in some

form. Construct and predictive validity similar to that established by Bonomi and colleagues

(2000) with women and childbirth has been established for individuals with sarcoidosis

(DeVries, Drent, Van Heck, & Wouters, 1998), mental illness (Orley, Saxena, & Herrman,

1998), diabetes (Pibernik-Okanovic, Szabo, & Metelko, 1998), pain (Skevington, 1998), cancer

(Struttmann et al., 1999), epilepsy (Amir, Roziner, Knoll, & Neufeld, 1999), dementia

(Struttmann et al., 1999), rheumatoid arthritis (Wirnsberger et al., 1999), neuromuscular disease

(Leplege, Reveillere, Ecosse, Caria, & Riviere, 2000), liver transplant (O'Carroll, Smith, Couston, Cossar, & Hayes, 2000), and many other disease states.

The WHOQOL-100 satisfies several criteria for use in this dissertation. 1. It is based on the WHO's widely accepted definition of health that is used by a majority of modern QOL scales. 2. It focuses on the importance of the individual's personal evaluation of objective content areas, the focus of my dissertation. 3. Its cross-cultural validation is extensive and rare across QOL instruments. 4. Publicly available scoring algorithms exist for practical ease of administration and scoring.

The one drawback to using the WHOQOL-100 is its length. Recognizing this drawback, the WHO developed a short form of the WHOQOL-100, the WHOQOL-BREF, containing only 26 items. Domain scores produced by the WHOQOL-BREF have been shown to correlate at around $r = 0.9$ with the WHOQOL-100 domain scores (The WHOQOL Group, 2009). The WHOQOL-BREF contains one item from each of the 24 subscales included in the WHOQOL-100, plus two items from the Overall Quality of Life and General Health sections. Domains 1 and 3 (Physical and Independence), and domains 2 and 6 (Psychological and Spiritual) from the WHOQOL-100 are merged in the WHOQOL-BREF creating four domains (physical, psychological, social relationships, and environment).

As previously mentioned, the WHO has recently developed an older adult specific QOL module to accompany the WHOQOL-BREF. At the time of this dissertation I could not acquire a legal copy of the WHOQOL-OLD, and therefore could not use it in my studies.

Summary

QOL is an important construct despite the difficulties in trying to define and measure it. One piece of evidence for this importance is that the subjective ratings of QOL indicators are often more predictive of relevant outcomes, such as survival rates among cancer patients, than traditional markers of prognosis such as functional status (Coates et al., 1992; Coates et al., 1993). This is a position reflected in the WHO definition ("…individual's *perception* of their position," emphasis added), and agreed upon by the majority of researchers in the QOL measurement field (see WHOQOL Group, 1998). It is not so much the objective indicators on which the ratings are based, but the subjective evaluative process used to perceive and interpret those indicators that is important (i.e. the difference between being told you are disabled due to loss of limb and *perceiving* yourself as disabled due to that loss, perhaps compared to yourself before the loss of limb or to another person whose limbs are intact). Thus, understanding the subjective evaluative process is of utmost importance in understanding QOL as a concept, achieving quality QOL assessment, and applying QOL measures as outcomes in research, policy and practice – yet very little is known about this process. As a powerful illustration of this point, in a table-based summary of QOL definition issues and the domains, content areas, and response dimensions of QOL measures, Stewart and King (1994) purposefully omit the comparative aspect of response because it is invariant across domains and issues. Comparison processes appear to be the single identifiable constant when measuring QOL, yet our understanding of those processes is limited to correlational evidence, and then only in components of QOL, such

as subjective health. This evidence, along with a framework for examining the subjective evaluative process of QOL judgment, is reviewed next.

Theoretical Bases for Prediction of the QOL Response Process

Social psychological theory offers us an avenue for beginning to answer the questions posed in this dissertation. Specifically, social and temporal comparison theories can inform the self-report process where any relative judgment based on personal experience must be made. Self-reporting QOL is an ideal example of such a process.

Social Comparison

Following Festinger's original conception of SCT (1954), researchers began expanding and further defining the situations in which social comparison applied. Three broad categories have resulted from this expansion. First, concerning the social comparison of abilities, Wheeler, Martin, and Suls (1997) posited the Proxy Model. The Proxy Model pertains to an individual evaluating the likelihood of their success at an unfamiliar task. In sum, the Proxy Model states that one can determine one's likelihood of success at a particular task by looking at the performance of a similar individual with a similar history on that task. In a related line of inquiry, Suls, Martin, and Wheeler (2000) applied the concept of social comparison to the formation of opinions, specifically current preferences, beliefs, and future preferences. This approach is broadly termed the Triadic Model. Whereas the Proxy Model allows an individual to ask and answer the question "can I do X?," the opinion formation, or Triadic Model, allows an individual to ask and answer questions such as, "do I like X?," "is X correct?," and "will I like X?" The importance of social comparison in the process of answering these questions depends

on many factors such as the target's expertise, similarity with the individual making the comparison, and previous patterns of agreement or disagreement with the individual making the comparison (Suls, Martin, & Wheeler, 2002).

The Proxy and Triadic Models are built upon the premise that individuals are driven by an information-gathering motivation; that is, we use others to fill gaps in our own knowledge when making relative judgments. Wills's (1981) Downward Comparison Theory (DCT) assumes a self-enhancement or self-improvement motivation, which is of particular interest to this dissertation. DCT states that individuals compare themselves to less fortunate others in order to boost subjective well-being, a facet of QOL. In contrast, an upward comparison, or comparing oneself to a more fortunate other, is supposed to lower subjective well-being. The basic points of Wills's theory have received a great deal of support (e.g., Wood, Taylor, & Lichtman, 1985); however, more recent research suggests that there are important nuances to upward and downward comparisons that determine their result.

Upward comparisons can sometimes produce positive results (Wood, 1989), such as when an individual sees the upward target as a type of achievable role model. Downward comparisons can sometimes produce negative results when an individual sees a high probability of becoming like the downward target. Thus, the affective result of a social comparison relies not only on its direction but also upon how similar the comparison target is to the individual making the comparison (Buunk, Collins, Taylor, Van Ypern, & Dakof, 1990), or the perceived likelihood of the comparator becoming like the target. If you make a downward comparison with high contrast (low similarity) to the target, the result should be positive. If you make a

downward comparison with high similarity, or the potential for high similarity, to the target, the result should be negative.

For example, imagine someone trying to decide how healthy they are. First, imagine they make a downward comparison to someone with the flu. If they contrast with that person, thinking they will never catch the flu, then the downward comparison results in a positive boost to their health perception. If, however, they see themselves as highly similar to that person thinking that they are likely to catch the flu as well, the downward comparison yields a negative result to perceived health.

Upward comparisons with high contrast to the target have negative results, and upward comparisons with high similarity to the target have positive results. Imagine again an individual trying to decide how healthy they are. This time they make an upward comparison to an individual who has never called in sick to work. If they contrast with that person, thinking that they will never be like them, the upward comparison yields a negative result. If they perceive high similarity to that person, thinking they have the ability to never call in sick as well, the result is positive.

The self-enhancement and self-improvement motives of social comparison, including upward and downward modes with varying degrees of similarity to the target, have been shown in applied social cognitive research many times over the last three decades. Most commonly the positive coping aspect of making downward contrast comparisons has been highlighted, but the benefits of upward similarity comparisons have also been documented. Specifically, the power of social comparison as a quality judgment tool and coping mechanism has been shown in

individuals with rheumatoid arthritis (Blalock, DeVellis, & DeVellis, 1989; Blalock, Afifi, DeVellis, Holy, & DeVellis, 1990), infertility (Affleck & Tennen, 1991; Stanton, 1992), cancer (Buunk, Collins, Taylor, Van Ypern, & Dakof, 1990; Llewellyn-Thomas, Thiel, & McGreal, 1992; Ybema & Buunk, 1995), chronic pain (Jensen & Karoly, 1992; Wilson, Chaplain, & Thorn, 1995), sickle cell disease (Wilson, Gil, & Raezer, 1997), cardiac rehabilitation (Helgeson & Taylor, 1993), multiple sclerosis (Hemphill & Lehman, 1991) and in the general population (Van der Zee, Buunk, & Sanderman, 1995).

Assuming that an individual's choice of comparison can be coached or changed, we can use the information provided by self-enhancement and self-improvement motives to better an individual's outlook on their current situation. To date this has most commonly been demonstrated in disease states and with social comparison. However, there is evidence of similar effects in non-disease states and with temporal comparisons; that is, comparison to past and future conceptions of an individual's self.

Relating this to the measurement of QOL, consider the question, "How are you?" SCT dictates that this can provoke the internal response, "How am I compared to whom?" Application of SCT would dictate that a downward social comparison with high target contrast (low similarity) should lead to a more positive answer ("I am doing well!") while upward social comparison with high target contrast should lead to a more negative answer ("I'm not too good.") Conversely, a downward social comparison with high target similarity should lead to a more negative answer while an upward social comparison with high target similarity should lead to a more positive answer.

27

For example, Frieswijk, Buunk, Steverink, and Slaets (2004) found that upward contrast and downward similarity comparisons related negatively to overall life satisfaction in a sample of community-dwelling older adults. Cheng, Fung, and Chan (2007) demonstrated that older adults use a downward social comparison with high target contrast to keep self-rated health high, consistent with Wills's (1981) DCT. This pattern is repeated in investigations of the positive impact of downward contrast comparisons in cancer patients (Taylor et al., 2007) and in individuals adjusting to chronic illness (Dibb & Yardley, 2006).

Temporal Comparison

Where social comparisons involve the use of others to evaluate our current situation, temporal comparisons involve the use of past conceptions of self and possible future selves to make decisions about our current situation. There is a key difference to consider between social and temporal comparisons. Temporal comparisons deal directly with self-knowledge, and are therefore advantageously malleable compared to conceptions of others. That is, being the expert on our own histories and determinant of our own futures gives us some liberties with the information therein.

In this malleability we can see the positive use of past and future selves in comparison: a past self may be remembered less favorably than actual circumstances would warrant, thereby giving a positive boost to the current self (e.g., past self derogation in Temporal Self Appraisal, Ross & Wilson, 2003). For example, I can boost my current self-image by first derogating a past self (I used to be so lazy) and then pointing out how much I've improved since then (I'm not as lazy as I used to be!). Indeed, Greenwald (1980) states that people construct their past selves to

their own advantage – using them to bolster the current self, to provide meaning for current and past lives, and to maintain well-being.

Opposite in action but similar in outcome, a positive future self may be constructed out of the best possible outcomes of the near future, regardless of their relative attainability, thus giving the current self something to strive for. In this way, representations of the self in future states can be an incentive; that is, we can imagine ourselves attaining something positive, such as a goal state, and use comparison to that possible self as motivation. For instance, I might imagine myself having successfully defended this dissertation. Possible selves then provide focus and organization for the pursuit of goals because they enable the person to use appropriate self-knowledge and to develop images that allow rehearsal of the actions needed to attain the goals (Markus & Nurius, 1986).

When considered together, it becomes apparent that past temporal comparisons to a more negative self are similar to downward social comparisons with high target contrast, and future temporal comparisons to a positive possible self are like upward social comparisons with high target similarity. Though comparison to possible selves is often discussed in terms of its self-enhancement and self-improvement uses, as above, it can also have negative results. Past selves can be used as standards to see if we are declining (Greenwald, 1980; Herzog & Markus, 1999). For instance, my 16-year-old self may have been lazy, but he could dunk a basketball and run long distances in track, skills my current self does not have. When I make that comparison, my current self concept takes a negative hit, similar to making an upward social comparison with high target contrast. Just as we can have hoped-for possible selves, we can also have feared

possible selves (Markus & Nurius, 1986). I may conceive of a future self who fails his dissertation defense and feel bad about my current self as a result. Here we have a similar process to making a downward social comparison with high target similarity.

Suls, Marco, and Tobin (1991) offer an excellent example of combining social and temporal comparison in the non-disease specific population of older adults. The authors interviewed community-dwelling older adults and asked about their overall health, as well as their health concerns and specific health problems. They also asked whether participants compared their present health to another individual (social comparison) or to their own health in the past or future (temporal comparison). Overall, individuals reported being in good health. Participants with more positive ratings reported making downward contrast comparisons and upward similarity comparisons, whereas participants with less positive ratings reported making upward contrast comparisons. Individuals who rated their health as less positive made more past and future temporal comparisons, and individuals who reported greater concern with their health tended to make temporal comparisons as well. These results implicate the comparison process, both social and temporal aspects, as a significant factor in self-rated health, though there is considerable room for improvement in defining what types of comparisons were made, including degree of similarity or contrast. In addition, Suls, Marco, and Tobin (1991) did not manipulate an individual's comparison type, relying solely on self-report of the process. The combined examination *and* manipulation of social and temporal comparison in older adults' QOL judgment is a logical next step, considering the close conceptual connection between self-rated health and overall quality of life.

Integrated Statement of Purpose

The overarching objective of this dissertation project is to identify systematic factors that affect the personal evaluative process involved in self-reporting responses to QOL assessments. Specifically, I will investigate the personal evaluative process using social and temporal comparisons during completion of the WHOQOL-BREF. My research questions are:

1. *What is the nature of an individual's internal experience when estimating his or her own QOL? That is, when researchers ask the question, "What is your quality of life?" what sources of information are being drawn upon in the subjective evaluation used to answer it?*

2. *Will an individual's QOL responses vary depending on the social and temporal comparisons suggested in an assessment?*

CHAPTER 3

STUDY 1: QUALITATIVE EXPLORATION OF QOL SELF-DEFINITIONS AND QOL

SELF-RATING PROCESS

In this chapter I present the methodology, results, and discussion for Study 1 (I should note for readers less familiar with qualitative studies that because Study 1 is a qualitative study, the results and interpretation/discussion for Study 1 are presented in an integrated, rather than sequential fashion). In the next chapter I present the methodology, results, and discussion for Study 2. In the final chapter I present an integrative discussion of the project as a whole, reflecting upon the results of both studies.

The overarching objective of this dissertation project is to identify systematic factors that affect the personal evaluative process involved in self-reporting responses to QOL assessments. A mixed methods approach is used for this dissertation for two main reasons. First, because examining the personal evaluative process involved in self-reporting QOL requires qualitative methods to explore individuals' reports of their experiences. Second, because examining how individual experiences translate into responses on a standardized assessment and how individual experiences with a standardized assessment can be manipulated requires quantitative methods.

Overview of Study 1.

Study 1 was a Grounded Theory (GT) exploration of the self-reported process of answering a QOL scale from the older adult point-of-view. It was designed to reveal the comparisons individuals naturally use in answering a QOL scale when not explicitly prompted,

and how individuals arrive at those comparisons. Most importantly, the results were used to inform the quantitative method used in Study 2.

<div align="center">SPECIFIC AIMS AND RESEARCH QUESTIONS</div>

Objective

To explore the comparison processes older adults use when making self-reports of QOL, and to use those results in the construction of a quantitative manipulation of comparison type on QOL scores in Study 2, as well as directional hypotheses for Study 2.

Research Question

What is the nature of an individual's internal experience when estimating his or her own QOL? That is, when researchers ask the question, "What is your quality of life?" what sources of information are being drawn upon in the subjective evaluation used to answer it?

<div align="center">METHODS</div>

Qualitative Analysis Approach and Methods

An Overview of the Grounded Theory Process. In a GT study, data are collected in a natural setting through an iterative interview process about the situation being described with the individuals experiencing it. Through the Constant Comparison Method (CCM), the researcher moves back and forth between data collection and data analysis, continuously refining interviewing techniques according to emerging themes from the analysis of previous interviews.

This process begins with the researcher's generative question. For the current Study, that question is an expansion of the synopsis research question, and is fourfold: *When healthy older adults complete a QOL scale and are not prompted to make a specific social comparison (either*

<div align="center">33</div>

through specific directions or the presence of cohort members), what comparisons are they naturally using? How are they arriving at those comparisons? Do comparisons change with different QOL questions? What is the internal experience of an OA individual when self-reporting on their QOL? These generative questions leads to the researcher's first group of people who should be talked to about the question. Data from the initial sample are analyzed, and initial hypotheses are developed. Based on these hypotheses, the researcher moves back into data collection with a modified plan for what information needs to be collected and from whom. This process of allowing the data collection and analysis to inform sampling plan is called *theoretical sampling.* If the initial sample is broad enough, the theoretical sample is often already at hand. Due to the contextually bound nature of the current results, my theoretical samples and initial sample were quite close, both taken from older adults in an assisted living context, but I did make adjustments along the way, as I describe below. The constant comparative process is repeated until the researcher reaches saturation, or the point at which no new ideas or themes emerge from the data.

A second feature of the constant comparative method is that the research moves back and forth between different levels of data analysis. The researcher is searching for patterns in the data that indicate the larger meanings of the data by first breaking the data down into its most basic component parts, then building those parts into lower-order and higher-order categories (sometimes called themes), then building networks between categories by looking for relationships between them. These three levels of analysis are referred to as: open, axial and selective coding; open coding groups together initial commonalities in the data, axial coding

groups these commonalities into themes, and selective coding organizes the themes into a coherent theory (Corbin & Strauss, 1990). Although described here as three distinct processes for explanatory purposes, in fact these processes are highly inter-related and the researcher is constantly moving back and forth between them rather than moving through them in a hierarchical fashion.

Coding Procedure. I undertook two individual rounds of coding, followed by a round of convergent coding with my dissertation chair, Dr. Snow. We then came to a consensus list of codes, definitions, and memos about the interrelationships among them. Thus, we looked for all patterns related to QOL, not just patterns related to our primary interest of how individuals use social and temporal comparisons to evaluate QOL. Given my primary research questions and hypotheses, however, I did attend carefully to indications of patterns related to social and temporal comparisons in addition to other QOL-related patterns that I might not have expected.

Treatment of Data

Data analysis followed a three-component process of analysis within the context of multiple iterations (Creswell, 1998; Strauss & Corbin, 1998): memoing, sorting and writing. The researcher moves back and forth through these components as necessary until a full understanding and theory of the data is developed.

Memoing: Memoing involves the analytic product of written records from data collection. For the current Study this is the transcription of the interviews along with interim notes and observations about the interview process. All interviews and memos are provided on the Raw Data CD accompanying the dissertation under the *Qualitative* folder.

Sorting: Sorting is the process of examining the written records from data collection in an iterative manner so that the researcher can begin to put together a coherent theory by grouping categories and themes in a particular order. As themes emerge from memoing and sorting, the researcher is constantly re-evaluating the data in an attempt to strengthen the ties of the emerging themes to the core theme or theory. For the current Study, I accomplished this by keeping and constantly revising a codes / themes list in spreadsheet format. The iterative versions of this spreadsheet are also provided on the Raw Data CD under the *Qualitative* folder

Writing: Writing is the final step of data analysis in this qualitative method. For the current Study, I have presented the results from memoing and sorting framed in three ways. First, I present a general description of the qualitative data. I then present the data according to the goals of the generative question. Finally, I present how these results informed the construction of the quantitative method in Study 2.

Participants

Cresswell (1998) suggests that 20 – 30 interviews will likely lead a generative question to saturation. For Study 1, I interviewed 23 older adults (age 65 and older) from an assisted living community in Birmingham, Alabama. Demographics are provided in Table 1. 20 of the 23 interviews were used in the final qualitative analysis (the first 3 were counted as a necessary site pre-test). The sample of 20 interviews proved to be sufficient to reach saturation, as evidenced by theoretical sampling trends. It became clear early on that the easiest individuals to recruit were also the happiest in the assisted living context. Soon this trend revealed itself in the data, and repetitive themes of happiness and adjustment emerged. I then made the decision to target

less social, and therefore more difficult to recruit, individuals. This produced the more negative categories and themes as discussed below. Once these themes began to repeat, I determined in consultation with Dr. Snow that saturation had occurred.

Exclusion criteria: Individuals with a Mini Mental State Examination (MMSE) score below 26 (mild impairment or greater) were excluded from Study 1 (see Crum, Anthony, Bassett, & Folstein, 1993). This resulted in a total of four individuals being excluded after MMSE screening.

Measures

World Health Organization Quality of Life Instrument Short Form (WHOQOL-BREF). As described under the previous section, *Choice of QOL Instrument for the Dissertation* (p. 17) I used the WHOQOL-BREF as the quantitative measure of QOL in Study 1.

Semi-Structured Interview. A semi-structured interview was conducted with each participant. Interview questions, and details regarding how interview questions were modified over the course of data collection are listed in Appendix A. Each interview session, including MMSE and WHOQOL-BREF administration, lasted between 1 and 2 hours.

Mini-Mental State Examination. The Mini Mental State Examination (MMSE) was administered to participants as a brief measure of general cognitive status (Folstein et al., 1975). The MMSE is a 30-point measure that is commonly used to assess cognitive functioning in the elderly. For the purposes of this study, exclusion criterion was set at a cutoff score of 26.

Procedure

        Participants were recruited from an assisted living facility in Birmingham, Alabama. Once an individual signed up to participate, we met either in their residence or at a research room provided for our research lab at the facility. Participants were first given the MMSE. If they met inclusion criteria (MMSE > 26), they were consented using the form provided in Appendix B. After consent, I began audio recording and conducted the interview. Each interview consisted of four sections: 1. Introduction / rapport building, 2. QOL definition, 3. Facilitated WHOQOL-BREF, and 4. Exploration of the introspective process in answering the WHOQOL-BREF. Section 1 was kept short, focusing on building a bond with the individual without needlessly extending the interview time. Section 2 consisted of an offered QOL definition, paraphrased from the WHO definition of QOL, and a free response definition from the participants. Section 3 was the facilitated WHOQOL-BREF, including demographics, the administration of which did not change across interview forms. I created large-type response cards for each question and set of responses and used those to facilitate the scale completion. Section 4 consisted of (a) the general "process" question and (b) differing comparison prompts (i.e., if social downward is offered, I prompted on temporal upward, etc.).

        Once the interview was complete I stopped audio recording and debriefed the participant (see Appendix B for debriefing materials).

RESULTS

Data Themes

Fifteen categories emerged from the data, with 103 themes. A complete table of the categories and themes is presented in Appendix C. Categories represented general factors in QOL (e.g., social support), QOL factors specific to older adults (e.g., cognitive impairment), comparison types and process (social and temporal), and coping mechanisms (e.g., "negative, but…" and explicit decision). The following is a summary of the 15 categories with examples from the interviews.

Friends / Social Support. Participants talked about their friends and general social support structure as a factor in forming their identity and sense of self, as a barrier to loneliness, and in terms of the importance of keeping socially engaged with others. Having friends or a strong social support structure was often cited as a personal definition of QOL:

> FHAPT002: *I have been married for 51 years. I have had friends for just as long and made a lot of friends here. You have to have good relationships with people, that is what life is all about.*

Loss of friends and social support was also common. Many individuals indicated that simply having friends, regardless of who they were, was the important part:

> FHAL006: *A person has to have friends. You don't ever want to be lonely, and so having a good life means having good friends, and you know, when I was talking about filling up my day... I fill up my day with things that I do with my friends, and it can be hard sometimes, because and excuse me, but people die here all the time. And so your friends might change, but the important part is to have friends.*

Spouse. Individuals spoke of their spouses in similar terms as friends and social support, but with greater depth of meaning. Loss of a spouse, being cared for by a spouse and caring for a

39

spouse as meaningful work were all mentioned, especially in terms of individuals' personal

definition of QOL:

> FHAL004: *And one of the things about the quality of life and contentment, and for about 80 years I have been content because I've had someone that I've loved that long. I mean, I'm content to live with her... she went with me and moved where they appointed me and she had no questions about it. She moved, she kept house where they sent me and she has me ready to go preach. She supported me in my work. And now that I've been retired for some 24, 25, 26 years, I'm living to do for her what I can. And I'm content to do it*

> *Money.* Individuals talked about money according to their environmental context (a

relatively high cost assisted living facility), citing cost of care as a barrier to QOL as well as

having enough money as an assurance of comfort and high QOL.

> JC: *Now that we've talked about what makes for a good quality of life, what do you personally think makes for a poor, or bad quality of life?*
> FHAL007: *Not being able to afford this type of care!*

 Other individuals downplayed money's importance as part of an interpersonal relationship-

centered conception of QOL:

> *FHAPT001: My wife and I traveled all over, had a good times, and, well. We never had too much, but we had enough, you know what I mean? Enough. And we were happy, we were happy.*

> *Religion.* A heavy religious theme, focused on Southern Protestant Christianity, ran

through a majority of the interviews. It provided a coping mechanism for some individuals, a

social support structure for others, and for some it provided a sense of identity and life meaning:

> FHAL007: *And when it comes down to it, the Lord is not ready for me. This is God's plan for me. That's what life is all about.*

> FHAPT001: *You know, its about your faith in the Lord to be with you when everybody else isn't, like, well, like a Father. Hmm. I tell you what, too... The Lord has to be my best friend!... no offense, X (X is a deidentified reference to the participant's best friend who recently died).*

Cognitive Impairment. As should be expected in an assisted living setting, many individuals spoke about cognitive impairment (CI). They did so across a wide variety of contexts, suggesting that CI is an important theme in QOL for older adults. Participants spoke about CI as a loss of control, as being embarrassed by the stereotype associated with it, and the losses of day-to-day functioning associated with it:

> FHAL004: *The things that bother me the most, and, as far as a bad quality of life is, in talking with folks, the way my mind is, and after the difficulties I've had and the health problems and what I've been through in terms of passing out and having difficulty thinking sometimes, um, is to give out wrong infor... to say the wrong things. And people take it the way I say it. And I shouldn't have said it.*

Death. The death of spouses and friends presented individuals the opportunity to express personal coping strategies, the challenge of letting go of loss, and the stark reality of death in an assisted living setting. An interesting example of this has already appeared under the friends / social support theme:

> FHAL006: *and it can be hard sometimes, because and excuse me, but people die here all the time. And so your friends might change, but the important part is to have friends.*

Many participants simply mentioned the death of a spouse or friend, but did not elaborate on it.

> JC: *What, uh, what did you do for a living before retirement?*
> FHAPT001: *Well, I was married for 59 years.*
> JC: *59 years!*
> FHAPT001: *Mm-hmm. 59 years. And now I'm a, a widower.*
> JC: *I'm sorry to hear that.*
> FHAPT001: *Mm-hmm. But, you know, you keep on, meet new people, keep on going. I like it here, so.*

"Negative, But..." One of the most pervasive and resilient coping mechanisms across participants was a type of weight / counterweight statement we coded as the "Negative, But…"

theme. Participants using this coping strategy would make a statement about something negative in their lives, and then effectively negate it by stating something positive directly afterward. For example, the "negative" part of the statement often referred to other loss-related themes, such as death, while the "but" part of the statement referred to religious belief as the coping mechanism for that loss.

> FHAPT001: *I never thought I'd lose Y [indicating his wife]. You, you just don't think about that, really. You wear out! X [referring to a friend] weared out. I'm wearing out. And, huh! Just went you start figuring some stuff out! But the Lord knows what He's doing. He knows what He's doing. So I don't complain. I got my friends, I mean, you're here talking to me now! I hadn't gone nowhere yet!*

This is also an excellent example of the *Being "Old"* theme.

> FHAPT001: *You wear out! X weared out. I'm wearing out… wearing out. Then you, then you die, yep.*

The *Being "Old"* theme is distinct from the *Death* theme in the quality with which participants delivered examples of it. In the former quote, the final line, "Then you die, yep" was delivered with a matter-of-factness that initially shook me. It was clear that only someone who had lived to watch friends and family pass away after the physical deterioration of age could express the inextricable link between age and death with little to no distress.

> *Self-perception / Self-reference.* A substantial part of participants' reports concerning their unprompted perceptions of Self involved perceived control of their own lives. FHAL011 indicated that the WHO definition of QOL was missing an important factor: choice.

> JC: *What is the definition missing, FHAL011?*
> FHAL011: *Choice.*
> JC: *Choice. Could you explain to me what you mean by that?*

FHAL011: *Choice… choosing all of this. What matters about how happy you are is whether or not its your own choice. Choosing where you live, choosing what you do. All of that. You see, choice. You know.*

Emotions. This was a broad theme encompassing everything from happiness to loneliness, humor to depression. The emotion category was helpful in identifying individuals who characteristically gravitated to a few types of emotional responses to a wide variety of stimuli and situations, such as the propensity to use humor, to respond with depression. The entire interview with FHAL015 was a case study in a depressed subset of individuals that was particularly difficult to recruit, as they were socially withdrawn and not immediately willing to participate in the study. Individuals such as FHAL015 talked about many of the other 15 themes, but in a distinctively negative way, such as experiencing a *lack* of happiness, a *lack* of control, a *lack* of friends / social support, and so on. FHAL015 in particular did not display any of the coping mechanisms that emerged from the data, such as the "negative, but…" reframing strategy, or the explicit decision to focus on positive aspects of their life. In the context of a negative Past Temporal Comparison, FHAL015 sums up her interview:

FHAL015: *That's all I remember I can remember a time, just barely when I wasn't sick, and I could do things for myself. Now I have to rely on her (indicates her caretaker) for everything. Have you ever had to have someone change your diaper? Its humiliating. I'm not depressed, so don't write that down, but sometimes I'd rather die then wake up to another day like this.*

It is important to note that I stressed the availability of follow-up services to FHAL015 as outlined in Appendix B. Whether due to actual low incidence or difficulty recruiting them, individuals such as FHAL015 were in the minority. Most participants expressed something similar to the following during their interview:

43

FHAL006: *Well, I believe I have a good life... I'm satisfied with my life, I think it's a good life.*

Humor was also common as a type of emotion based coping mechanism:

FHAL019: *Alright, well, I've answered your question, now I want to get to know you. Lets do that what do you do for a living?*
JC: *Well, like it says on the handout – I'm a graduate student at the University of Alabama.*
FHAL019: *That's okay, I'll forgive you. War Eagle.*

The same participant, in response to WHOQOL-BREF question 11, "Are you able to accept your bodily appearance?" commented:

FHAL019: *some wrinkles I just can't stand, but I'm okay looking, don't you think?*

The participant then laughed to herself.

Utility / Effort. The idea that participants constructed a partially functional identity, such as the need to be needed, the need to help others with their talents, pride in past or current work ability, and simply staying busy during the day drove a substantial section of participants' descriptions of themselves. When individuals felt that they had a purpose or utility in day-to-day lives they were more apt to be happy, well-adjusted, and participate in the early stages of recruitment.

FHAL005: *And my husband, when the people found out he was a minister, uh, some of us said, well why can't we have blessing at all the meals instead of just once in awhile. And the asked him would he be willing to say the blessing. So he said he would. So he asked other people would they be willing to share that time beside the minister that's in charge on Sunday.*
FHAL004: *We have a chaplain here and I work very close with him... when there comes an opportunity to help somebody, I'll do it.*

Decision (Explicit). In combination with the "negative, but…" theme outlined above, participants used the coping strategy of deciding, in an explicit manner, to focus on positive aspects of their lives, and to maintain control by making decisions for themselves as much as possible:

> FHAPT002, on keeping control over her own move: *It was hard enough to leave our home, but we decided to come here. We decided that some people get put in here and some people wait until they just can't take care of themselves. And we figured we might as well come here when it was still our decision.*

> FHAL019, on deciding in an explicit way to be happy: *You have to enjoy each thing as its happening, each thing as it is. You have to find whatever things that are good in whatever is happening. Then that is your reason for living.*

This theme is the key facet in answering the generative question and will be discussed in greater detail in the section *Qualitative Data viewed through the Generative Question,* below.

Basic Needs. In evaluating their QOL, participants talked about fulfilling basic needs as a highlight of being in an assisted living facility, especially when viewed through the lens of "help me when I need it, and leave me alone when I don't." For instance, FHAL007 summed up many aspects of this theme at once while making a combination Downward Temporal and fearful Future Temporal Comparison:

> FHAL007, in response to the question "what do you personally think makes for a good quality of life? *Knowing about things and having the freedom to get around like you want. Having my mind is the most important part. Its important to be confident with your finances. Its important to be able to read the newspaper and watch the TV and comprehend those things. When I first came here I was up there with people who may not be physically sick, but don't have their own mind. I still have my wits about me. That is what makes my life good. Also having access to good food and good care. It is important to be able to pay for this kind of care to be able to take care of your basic needs and then have the freedom to go and do what you want after that. That is why having my car is so important. And I think I have a pretty good life.*

Health / Physical Self. Individuals consistently reported that health was an important part of their QOL. Responses related to health and the physical self dealt with disability from poor health, dependence on others due to poor health, resilience and good health, and, as an opposite to cognitive impairment, good mental health and ability tied to good overall physical health. FHAL010 captured much of the frustration / dependence aspect of a negative health state:

> FHAL010: *After my first stroke, that was X years ago, I tried to work again after that, but I had a hard time. When my wife passed away, I couldn't stay by myself anymore, so they put me here. Had to retire early, I don't call it retirement, I say they made me leave. I could've still done the work, it just took me longer. Does that seem fair to you?*

Comparison. In evaluating their QOL, individuals often demonstrated use of social and temporal comparisons, both in unprompted situations and when prompted during an interviewer follow up to a previous response. These will be discussed in detail under the section "Qualitative Data viewed in Terms of Quantitative Method Construction."

Qualitative Data viewed through the Generative Question

The generative question for Study 1 can be broken down into four parts. I address each in turn using quotes from the qualitative interviews.

1. *When healthy older adults complete a QOL scale and are not prompted to make a specific social comparison (either through specific directions or the presence of cohort members), what comparisons are they naturally using?*

The most common unprompted comparison type, by far, was downward social comparison (DSC), appearing at least 10 separate times across interviews (prompted DSCs were also common). Interestingly, unprompted DSCs often appeared in combination with a fearful

future temporal comparison (FTC). In the DSC + FTC combination, participants would describe a downward comparison target and then express fear of becoming a member of it in the future.

> FHAL006: *And you know, I think he's just wasting away! He's depressed, you know. I don't ever want to get like that. I don't want to be like that and to be honest it makes me a little mad to see people like that. I just want to tell them to get up and be happy. Give it a shot! But they don't and that's why you hear nursing homes homes like this are such sad places because of people like him.*

> FHAL007 *Well, I don't want to become like those people upstairs. I don't really care if my body goes, but I always want to have my mind. Those people up there are just so sad and I am afraid of becoming like that. My mother, right before she died, became like that.*

The frequency of DSCs is in line with Wills's (1981) self-enhancement motive as expressed in his downward comparison theory. Individuals in an assisted living setting theoretically have many relevant downward comparison targets available for self-enhancement. The DSC + FTC combination does not seem to serve a self-enhancement motivation, however, and deserves further scrutiny.

2. How are they arriving at those comparisons?

The target of comparison seems to be tied to situational salience as well as how it serves the individual making the comparison. Participants who were more socially active had a greater opportunity for social comparisons, and reported using them in adaptive ways, while those who were more socially isolated made more temporal comparisons and reported using them in fearful or detrimental ways.

> FHAPT002: *Of course, we are not satisfied with having dementia, but I know its not nearly as bad as it could be. And its not nearly as bad as it has been for other people we've known.*

47

FHAL015: *I was thinking about how things used to be… and I don't really want to talk about it, I'm very tired. Lets finish.*

3. Do comparisons change with different QOL questions?

It does not appear so. Rather, comparisons seem to change according to the general valance of an individual's affect at the time of interview. Participants with more negative feelings about QOL content areas and those who do not employ the two coping strategy themes make more unprompted temporal comparisons, especially past temporal comparisons (PTC). For example, FHAL015, cited as an archetype for the depressed participant in the general data description, made frequent PTCs, followed closely by fearful FTCs. In contrast, individuals who exhibited good coping strategies and better overall QOL employed more social comparisons, especially DSCs with high target contrast. FHAL006 exemplified this approach:

> *But some people when they get here, they just give up. They stop taking care of themselves. They stopped going out and being social, and I don't want to be like that. I think that's exactly what a bad life is.*

4. What is the internal experience of an OA individual when self-reporting on their QOL?

Again, this seemed to differ according to the general affect of the individual. The majority of participants reported a good QOL, and intimated a process similar to what FHAPT001 stated explicitly when questioned about his internal experience:

> JC: *Some people report that when they decide how to answer these survey questions, they are comparing themselves to others they know. Some people report that they think about the way they used to be, or the way they think they'll be in the future. Were you comparing yourself to anyone, or to any groups of people, when you were trying to decide how to answer these questions?*
>
> FHAPT001: *I think I used them all, now we talk about, now we talk about it. But you don't have to think just one way, uh, you, don't have to, do you? Everybody has bad*

days. Even the Lord had some doosies! But its about how you decide, not what you might think the first time, uh, you know? I might see somebody who has that old fancy car, and maybe I want that car and I think about it that way. So then, then, I, uh, then I decide, see, not to look at it that way anymore. I stop, and I'm thankful.

In the end, I saw evidence of social and temporal comparisons, combinations of the two, and was given self-report of using several in one decision, eventually explicitly switching to a thankful self-enhancement strategy. These themes in the qualitative data confirm the fact that comparisons are part of an individual's subjective evaluative process in answering QOL questions. Using this as a base, I next constructed the quantitative methods for Study 2.

Qualitative Data viewed in Terms of Quantitative Method Construction

After two individual coding passes on all interviews and one convergent coding pass on approximately half of all interviews with Dr. Snow, I sat down to construct the qualitative data derived comparison primes for the quantitative section of the dissertation, Study 2. At this point there was a stable code list that included examples of all four comparison types (social up and down, temporal past and future). Many specific types of comparisons were present in the data, including:

1. <u>Prompted</u>: A particular comparison was part of a question I raised with the participant.
2. <u>Unprompted</u>: The comparison was spontaneous.
3. <u>PTC UPSET</u> Essentially a comparison to a better former self with high contrast, causing upset.
4. <u>FTC PESSIMISTIC</u> Comparison to a future possible self assumed to be worse off than current self.
5. <u>Refusal of comparison / I don't Compare</u> A sometimes vehement denial of comparison after a comparison prompt, often followed by a proclamation of individuality.
6. <u>Past = still present = regret</u> A PTC to mistakes of a former self, with high similarity.
7. <u>Multiple comparisons / process of comparisons</u>: Usually a comparison with a negative outcome, followed by some explicit decision to make a comparison with a positive outcome. Discussed in more detail above as part of the answer to the generative question.

8. Changing your expectations: After an USC or PTC, the participant would indicate that the comparison didn't have any bearing on their current self, since they'd adapted by changing their expectations.
9. FTC Upset: Comparison to a future possible self worse than the current self with high similarity that produced upset.
10. Specific: A comparison with a specific example given, usually DSC and unprompted.

I took a simple count of comparison types across all interviews and broke down each comparison into themes based on the current code list. DSC was most common by far, followed by the other three categories in fairly equal measure. Examples:

DSC
-FHAPT002, LN 132 – 134, *"Of course, we are not satisfied with having dementia, but I know its not nearly as bad as it could be. And its not nearly as bad as it has been for other people we've known."*

-FHAL006, LN 80 – 82, *"I see some people around here and they just sit. That's all they do is sit around. Well I'll tell you I couldn't stand that I couldn't stand to be like that. I couldn't be like that. I have to move to have to go I have to do!"*

-FHAL006, LN 114 – 116, *"But some people when they get here, they just give up. They stop taking care of themselves. They stopped going out and being social, and I don't want to be like that. I think that's exactly what a bad life is."*

-FHAL019, LN 89 – 90, *"I shared a room with a man who just slept and when he was awake he was cranky as a crab! He was blind [in the context of the interview she meant metaphorically blind]. And he was miserable."*

-FHAL019, LN 124 – 125, [in reference to her health] *"for my age its fine. Some people have it much worse, I know for my age I'm pretty healthy."*

FTC
-FHAPT002, LN 171 – 174, *"I do wonder what the future will be like. Now that we have dementia. And that did influence some of my answers, I think. I'm scared of losing well. I am. I am scared of losing my mind, and this sounds selfish, but I bet he'd [reference to her husband] tell you the same thing. I'm scared of having to well, being a burden on my husband."*

-FHAL006, LN 242 – 246, *"That last one thinking about what the future might be like… it does cross my mind. And it is not pleasant. I know there's a chance I could have a stroke. I know*

there's a chance I could lose my mind lose my sharpness. I try not to think about it, honest. But sometimes it does creep then sometimes it affects how you think, and I did think about that a couple of times during that survey."

USC
-FHAPT002, LN 208 – 210, *"Well, I know there are people better off than me on some things anyway. Like I have friends who have gone to keep their house and still drive, and I have some friends who even still work but my life is fine."*

-FHAL006, LN 213 – 215, *"You come to mind. You are young, you look healthy, and you're right here in front of me. So I think someone who's better off than me, healthwise, probably you. But that's because you're young, so it don't bother me. I was healthy, when I was young, and I'm healthy now for my age"* (this is also a DSC, last line).

FHAPT001, LN 199 [in reference to an individual he had earlier identified as a specific DSC. I asked, "You said Z has a tougher time than you, right?"] *"Mm-hmm. But I tell you what, he sure doesn't act like it!"*

FHAL004, LN 402, *"Well, I appreciate people that's around me that more fortunate than I am."*

FHAL020, LN 224, *"you can't help but have heroes."*

PTC
-FHAL006, LN 50 – 51, *"My health, well, my health has been better it could be better. But I still get around fine."*

-FHAL007, LN 39 – 41 [The participant's mother had recently died, right before she moved into the nursing home.] *"I was not doing so well then, but eventually I got better and moved down here to assisted living. There was no sense in me going back to my home. I had had my mother there, and it was better for me to get to move away from that."*

-FHAL015, LN 70 – 71, *"That's all I remember I can remember a time, just barely when I wasn't sick. And I could do things for myself. Now I have to rely on her (indicates her caretaker) for everything."*

-FHAL015, LN 138 – 139, *"I was thinking about how things used to be… and I don't really want to talk about it, I'm very tired. Lets finish."*

-FHAL019, LN 217 – 220, *"The past is the past. I had a house in the past. That's because I needed a house in the past. This is all I need when you get older. You learn, just to get what you*

need and be happy with it. What I had back then, I had some great houses. What I have right now, I have a great room. That's all I need, be happy with what you need."

This list guided my decisions on the raw content of each comparison prime, focusing on physical, functional, and environmental themes. All of these seemed to be tied to explicit decision, and fit well in the WHOQOL-BREF domain scores. However, a conceptual problem jumped out early during this process. First, should the primes be general instructions or specific vignettes? This has been an issue since the beginning of the project, and was a major point of discussion in the prelim. I reasoned that the point of this project is to eventually better current QOL scales; this means I needed to identify a previously unmeasured subset of variance, and measure it. The qualitative interviews were conducted, in part, to see what common structures, examples, or content emerged from a group of individuals concerning comparisons. The idea is then to take the common structure and apply it to a larger group of people to see if it has a replicable and predictable effect (taking heretofore assumed error variance and showing it to be systematic variance.) So the manipulation has to be the same across all participants, or else it is not a controlled manipulation, and the results can't be extrapolated to be systematic.

If I were to have given general instructions to allow personal experience to play a bigger role (i.e., "Imagine someone worse off than you") the individual differences would be so large that cross individual comparisons would be moot.

This thought process led to the vignettes:

<u>DSC</u>

Robert / Roberta is 70 and in poor health. He / she doesn't socialize much, has a hard time getting around on her own, and recently had to move out of his / her house. Some people say that she's just "given up" on life.

USC

Robert / Roberta is 70 and in great health. He / she is socially active, loves to take long walks and hikes, and still lives in the house she bought 30 years ago. Most people say that she is "very lucky" in life.

PTC

Robert / Roberta is a lot like you, though 10 years younger. He / she is socially active, loves to take long walks, and lives in a wonderful house. Most people say that he / she is in the prime of his / her life.

FTC

Robert / Roberta is a lot like you, though 10 years older. He / she has dementia, has a hard time getting around on her own, and recently had to move out of his / her house. Most people feel sorry for him / her, since she doesn't have much control over his / her life.

At this point it was striking how the comparison categories ended up pairing with each other: DSC with FTC and USC with PTC, as a simultaneous look at the social and temporal comparison literatures suggests. Also, I was concerned that the FTC manipulation was too harsh; that having people imagine that they're possibly going to have dementia was too traumatic, or that it may have detracted from the overall point of the primes.

At this point I discussed the prime drafts with Dr. Snow and our qualitative expert, Dr. Hamner. Dr. Snow and Dr. Hamner expressed similar concerns and ideas about improving the primes. In general, the social primes needed to be more flexible, more relative; the temporal primes needed to be about the participant specifically. In concrete terms this meant that for social primes, I needed to add in a general first sentence and add "relative" elements (i.e., "Robert / Roberta is your age) instead of fixed values (such as "70"). For temporal primes, this

meant that I needed to center them on participants themselves (i.e., Imagine yourself 10 years ago) rather than the current exemplars.

The discussion resulted in the following revised primes:

DSC

Robert / Roberta is your age and has little control of his / her life. He / she is in poorer health than you and most people your age. He / she doesn't get to socialize as much as he / she would like. He / she doesn't have the freedom he / she wants, since he / she has a really hard time getting around on his / her own. Partly because of all this, he / she recently had to move out of his / her beloved home.

USC

Robert / Roberta is your age and has total control of his / her life. He / she is in better health than you and most people your age. He / she socializes as much as he / she likes. He / she has the freedom he / she wants, since he / she can get around as he / she pleases. Partly because of all this, he / she still lives in his / her beloved home.

PTC

Imagine yourself 10 years ago. Do you have the same control of your life now as you did then? How healthy are you now compared to then? How socially active are you now compared to then? How much freedom do you have now compared to then? How well can you get around now compared to then? Compare your home now to your home from back then; which do you prefer?

FTC

Imagine yourself 10 years from now. Do you have the same control over your life now as you think you'll have then? How healthy are you now compared to how you think you'll be then? How socially active are you now compared to then? How much freedom do you have now compared to then? How well can you get around now compared to then? Compare your home now to the home you think you'll have then; which do you prefer?

Dr. Snow and I then reviewed these primes. Her immediate concern wasn't for the primes themselves but for the directions to go with them. It was clear that my original take was

too complicated, and that participants could easily get lost or confused, especially in the assisted living population. Yet, I wanted to stay as faithful as possible to the original WHOQOL-BREF directions. They read:

*The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.*
*Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.***

These are the directions I used during Study 1, the qualitative section of the dissertation, but we reached consensus that they were too long. In light of this, Dr. Snow and I came up with an alternate form that was much shorter and much less complex than the original WHOQOL-BREF directions and pilot tested them in the assisted living context.

Pilot Testing of Comparison Prime Vignettes

I implemented these directions in a small pre-test. I spoke with four participants from the same assisted living facility in Birmingham used for the qualitative interviews. I spoke with each individual about two of the primes. The instructions and primes used were:

VIGNETTE #1: DSC

Instructions: Please carefully read the following story about Robert/Roberta:

Robert / Roberta is your age and has little control of his / her life.
He / she is in poorer health than you and most people your age.

He / she doesn't get to socialize as much as he / she would like.
He / she doesn't have the freedom he / she wants, since he / she has a really hard time getting around on his / her own.
Partly because of all this, he / she recently had to move out of his / her beloved home.

The following questions ask how you feel about your quality of life, health, or other areas of your life. Please read each question along with the response options carefully.

Please choose the answer that best describes you; when answering the questions, please [keep in mind the story of]/[compare yourself to] Robert/Roberta.

VIGNETTE #2: USC

Instructions: Please carefully read the following story about Robert/Roberta:

Robert / Roberta is your age and has total control of his / her life.
He / she is in better health than you and most people your age.
He / she socializes as much as he / she likes.
He / she has the freedom he / she wants, since he / she can get around as he / she pleases.
Partly because of all this, he / she still lives in his / her beloved home.

The following questions ask how you feel about your quality of life, health, or other areas of your life. Please read each question along with the response options carefully.

Please choose the answer that best describes you; when answering the questions, please [keep in mind the story of]/[compare yourself to] Robert/Roberta.

VIGNETTE #3: PTC

Instructions: Please carefully read the following story:

We'd like you to tell yourself a story now…a story about yourself.
Imagine yourself 10 years ago.
Do you have the same control of your life now as you did then?
How healthy are you now compared to then?
How socially active are you now compared to then?
How much freedom do you have now compared to then?
How well can you get around now compared to then?
Compare your home now to your home from back then; which do you prefer?

The following questions ask how you feel about your quality of life, health, or other areas of your life. Please read each question along with the response options carefully.

Please choose the answer that best describes you; when answering the questions, please [keep in mind]/[compare yourself to] the story of yourself 10 years ago.

VIGNETTE #4: FTC

Instructions: Please carefully read the following story:

> We'd like you to tell yourself a story now…a story about yourself.
> Imagine yourself 10 years from now.
> Do you have the same control over your life now as you think you'll have then?
> How healthy are you now compared to how you think you'll be then?
> How socially active are you now compared to then?
> How much freedom do you have now compared to then?
> How well can you get around now compared to then?
> Compare your home now to the home you think you'll have then; which do you prefer?

The following questions ask how you feel about your quality of life, health, or other areas of your life. Please read each question along with the response options carefully.

Please choose the answer that best describes you; when answering the questions, please [keep in mind the story of]/[compare yourself to] the story of yourself 10 years from now.

I administered each participant one set of instructions and then a limited sample of the

WHOQOL-BREF, followed by four brief questions about the instructions and primes.

Participant 1 spoke with me about DSC and PTC, participant 2 about PTC and DSC, participant

3 about USC and FTC, and participant 4 about FTC and USC, respectively. After being exposed

to the vignettes, being read the instructions, and being taken through the first ten questions of the

WHOQOL-BREF, the participants answered the following questions (the conversations were

recorded to make sure I didn't miss any comments):

1. Were the instructions at the beginning of the exercise clear?
2. Was it easy to remember the story we read at the beginning of the exercise?
3. How would you change the story?
4. How would you change the instructions?

Results indicated that very few changes were necessary before administering the full prime and

WHOQOL-BREF combination to a wider group of participants. Two participants expressed

confusion about the differences between the temporal and social vignettes; however, this could

be addressed using careful counterbalancing and explicit directions.

> FHQPT001: *The instruction, the instructions were fine. I'm a little confused about taking the same, we already did it once and then did it again, but with the different story. Why did we do that?*
>
> FHQPT003: *I wouldn't change it, its, that's pretty good if you're getting us to think about another person, another time, yes.*

I took these results and completed the pre-test with eight participants at the assisted living

facility. After running these eight individuals, it became clear that the primes were highly

efficacious; there were differences by comparison type when simply "eye-balling" the data.

Final Decisions Regarding Study 2 Design and Comparison Prime Vignette Materials

Because of these promising results, I decided to run a within-subjects manipulation of the

Study 2 protocol with this sample in addition to the originally proposed between-subjects

manipulation with a general population sample from the preliminary document. A within-

subjects study using individuals from the same population as Study 1 has several advantages.

First, it is important to understand this effect in a homogenous population that was the same as

the one upon which the primes were developed as a methodologically conservative first step.

After establishing an effect in the same group from which the primes were derived, the next

logical step would be to examine the generalizability of the effect with a broader group. Second,

within-subjects designs are inherently more powerful then between-subjects designs, and would

therefore require a smaller sample, giving this extra run a high probable return on its time

investment.

CHAPTER 4

STUDY 2: QUANTITATIVE MANIPULATION OF COMPARISON PRIME VIGNETTES

ON THE WHOQOL-BREF

In this chapter I present the methodology, results, and discussion for Study 2.

Overview

Study 1 yielded themes that informed the construction of the primes upon which Study 2 was based, and the patterns upon which the directional hypotheses for Study 2 were based. In examining the themes and codes that emerged from Study 1, there are several categories that correspond to portions of the WHOQOL-BREF. These include physical health, social functioning, functional ability, and environmental concerns. This result was expected; primes derived from a sample of older adults in an assisted living context should reflect the QOL priorities of that sample, and are therefore contextually bound to that sample to some extent.

As mentioned earlier, the originally proposed sample for Study 2 was to be taken from the general population. After completing Study 1, however, the degree to which the primes were contextually bound became a potential conceptual restraint, raising the question: are these primes so specific to an assisted living population that they will not generalize to other populations?

In order to answer this question, a contextual sample was added to the dissertation as the initial section of Study 2. This sample came from the same assisted living facility that provided the sample for Study 1. By including a contextually bound sample in Study 2a and a general population sample in Study 2b, the overall design allows drawing conclusions about the degree

of specificity and generalizability of any significant effect related to the comparison primes derived from Study 1. The naturally occurring comparison process emerged from the Study 1 data and was used to produce the primes for Study 2. In Study 2a, the effect of the primes was examined on the sample population from which they were derived. In Study 2b, the generalizability of the primes was tested on a broader sample.

<div align="center">SPECIFIC AIMS AND RESEARCH QUESTIONS</div>

In Study 2 I used the prime manipulation to investigate the following research question:

1. Will an individual's QOL responses vary dependent upon how social and temporal comparisons are framed?

 I hypothesized that QOL scores would vary significantly by primed comparison type. Further directional hypotheses are discussed below under Study 2a and Study 2b.

<div align="center">Study 2a</div>

Hypotheses

The non-directional hypothesis for Study 2a:

H1: WHOQOL-BREF scores will significantly vary from baseline according to comparison vignette prime condition.

For the purpose of constructing directional hypotheses for Study 2a, I examined the narrative affective result of each comparison type from Study 1. Consistent with Wills (1981), DSC served a self-enhancement purpose, with individuals using DSC to improve their own view of their current situation:

> -FHAL019, LN 124 – 125, [in reference to her health] *"for my age its fine. Some people have it much worse, I know for my age I'm pretty healthy."*

<div align="center">61</div>

Therefore, I hypothesized that:

H1a: **The DSC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.**

The effects of FTC in Study 1 data were more difficult to interpret. FTCs most consistently produced a feared possible self (Markus & Nurius, 1986), often in combination with a DSC as described in the previous section on answering the generative question of Study 1. The combined effect of the DTC + FTC process suggests that guiding individuals to use a FTC, especially when DSC targets with high potential similarity are readily available, might have a negative effect on their view of their current situation:

> -FHAL006, LN 242 – 246, *"That last one thinking about what the future might be like… it does cross my mind. And it is not pleasant. I know there's a chance I could have a stroke. I know there's a chance I could lose my mind lose my sharpness. I try not to think about it, honest. But sometimes it does creep then sometimes it affects how you think, and I did think about that a couple of times during that survey."*

However, a FTC contrast effect could be imagined in this case as well, in which an individual imagines a feared possible self and is subsequently thankful for the gifts of the present moment (i.e., I may not be able to walk someday, so I am thankful for the mobility I have now). Of the two possibilities, the feared possible self with a negative result appeared most often. Therefore I hypothesized that:

H1b: **The FTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.**

The results of USCs were also mixed. Some individuals expressed USCs with high target contrast, producing a more negative result for the current self.

-FHAPT002, LN 208 – 210, *"Well, I know there are people better off than me on some things anyway. Like I have friends who have gone to keep their house and still drive, and I have some friends who even still work but my life is fine."*

Others expressed USCs with high target similarity, producing a hopeful result.

FHAL004, LN 402, *"Well, I appreciate people that's around me that more fortunate than I am."*

The USCs with high contrast were more frequent, however; therefore, I hypothesized that:

H1c: The USC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

PTCs provided the clearest result, with individuals experiencing a blow to the current self due to a perceived inability to recapture many of the positive aspects of their younger selves (such as living independently, or having better health).

-FHAL015, LN 70 – 71, *"That's all I remember I can remember a time, just barely when I wasn't sick. And I could do things for myself. Now I have to rely on her (indicates her caretaker) for everything."*

In light of this, I hypothesized that:

H1d: The PTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Method

Participants

Twenty-five older adults from an assisted living facility in Birmingham, AL, participated on a voluntary basis. Demographic information for the sample is presented in Table 2.

Materials

        Comparison Prime Vignettes: Each of the four vignettes derived from the results of Study 1 were printed on individual pieces of paper in Times New Roman font, size 28. The vignettes are listed on pages 56 - 57 of this document.

        The WHOQOL-BREF: The WHOQOL-BREF was used as described in Study 1, but with the vignette instructions replacing standard instructions in the comparison manipulation conditions. Instructions for the baseline condition read, "The following questions ask how you feel about your quality of life, health, or other areas of your life. Please read each question along with the response options carefully. Please choose the answer that best describes you as you are today."

        Mini mental state examination: see description on page 37.

Design and Procedure

        Study 2a used a within-subjects repeated measures design with five conditions (QOL baseline, QOL Downward Social Comparison, QOL Upward Social Comparison, QOL Past Temporal Comparison, and QOL Future Temporal Comparison). Since a five condition repeated measures design produces 120 possible administration orders, and the assisted living context warrants a convenience sample far less than 120, a partially counterbalanced Latin Square design was used in which a condition appears only once in each row and column of the square. This design limits, though does not rule out, the possibility of order effects. Participants were then randomly assigned to one of the five possible orders.

After recruitment the participant and I would meet either in their residence or at a research room provided to the University of Alabama by the facility. Participants were first given the MMSE. If they met inclusion criteria (MMSE > 26), they were consented using the form provided in Appendix B. All recruited participants met inclusion criteria for Study 2a. After consent, I administered the facilitated WHOQOL-BREF five times, once for each condition with order determined by random assignment to one of the five possible Latin Square orders. Each administration was preceded by the presentation of the appropriate prime vignette, in which I read the instructions and prime to the participant while the participant read along on a printed card. Participants were given as much time as needed in between conditions to prevent fatigue effects. After all five conditions were completed, I thanked and debriefed the participant according to Appendix B.

RESULTS

Preparation of Dependent Variables: Participant responses were recorded in a spreadsheet set up to calculate the four domain scores of the WHOQOL-BREF: physical, psychological, social, and environmental. The physical domain score is made up of seven questions on a 5-point Likert scale, resulting in possible scores from 7 to 35. The psychological domain score is made up of 6 questions on the same scale, resulting in possible scores from 6 to 30. The social domain score is made up of three questions, resulting in possible scores from 3 to 15. The environmental domain score is made up of eight questions, resulting in possible scores from 8 to 40. The first two questions of the WHOQOL-BREF, concerning overall Quality of Life and Self-rated Health, are considered individually and are not calculated as a part of any

domain score. Their possible scores therefore range from 1 to 5. This resulted in 6 dependent variables for Study 2a: the physical, psychological, social, and environmental domain scores, as well as overall QOL and self-rated health scores.

Consideration of Secondary Variables: Demographic data were collected as part of the WHOQOL-BREF (see Table 2). Age, gender, and ethnicity were correlated with each of the six dependent variables to determine the need for including any of them as covariates in the main analyses. The three demographic variables did not correlate significantly with any of the six dependent variables (all $p > .05$), and were therefore excluded from the main analyses. There were also no significant relations between randomly assigned Latin Square order and any of the dependent variables.

Main Analyses: A series of six one-way repeated measures Analyses of Variance (ANOVAs) with five conditions (QOL baseline, QOL Downward Social Comparison, QOL Upward Social Comparison, QOL Past Temporal Comparison, and QOL Future Temporal Comparison) were conducted in order to determine the effect of comparison vignette prime condition on physical, psychological, social, and environmental domain scores, as well as overall QOL and Self-rated Health scores on the WHOQOL-BREF. All six ANOVAs were significant (all $p < .001$). Omnibus test results are listed in Table 3. Significant main effects were followed by post-hoc comparisons using Fisher's Least Significant Difference method. These results are presented by hypothesis and dependent variable next.

H1: WHOQOL-BREF scores will significantly vary from baseline according to comparison vignette prime condition.

Hypothesis 1 was confirmed for all six dependent variables, all *p* < .001 (See Table 3).

H1a: The DSC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.

Hypothesis 1a was confirmed for Physical Domain Score (DSC [M = 25.84, SD = 4.21], Baseline [M = 22.52, SD = 3.45]), Environmental Domain Score (DSC [M = 31.56, SD = 3.80], Baseline [M = 30.08, SD = 3.14]), and Self-rated Health Single Question Score (DSC [M = 4.20, SD = .71], Baseline [M = 3.64, SD = .70]). Though the differences did not reach significance, Psychological Domain Score (M = 23.88, SD = 4.05), Social Domain Score (M = 10.32, SD = 1.87), and QOL Single Question Score (M = 4.36, SD = .76) all showed a trend of the DSC condition producing higher scores than Baseline.

H1b: The FTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Hypothesis 1b was not confirmed. In fact, results indicate a pattern opposite of what was predicted, with FTC producing significantly higher scores than Baseline. This pattern is indicative of a FTC contrast effect, the possibility of which was discussed, but not predicted, under the hypothesis construction section above. FTC resulted in significantly higher scores compared to Baseline in Physical Domain Score (FTC [M = 27.00, SD = 3.01], Baseline [M = 22.52, SD = 3.45]), Psychological Domain Score (FTC [M = 23.96, SD = 3.48], Baseline [M = 23.08, SD = 2.97]), Social Domain Score (FTC [M = 10.76, SD = 1.95], Baseline [M = 10.20,

SD = 1.73]), QOL Single Question Score (FTC [M = 4.40, SD = .65], Baseline [M = 4.12, SD = .73]), and Self-rated Health Single Question Score (FTC [M = 4.24, SD = .72], Baseline [M = 3.64, SD = .70]). Though FTC (M = 30.88, SD = 3.75) was numerically higher than Baseline (M = 30.08, SD = 3.14) in Environmental Domain Score, this difference did not reach significance.

H1c: The USC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Hypothesis 1c was confirmed for QOL Single Question Score (USC [M = 3.56, SD = .77], Baseline [M = 4.12, SD = .73]) only. Results for Physical Domain Score (USC [M = 22.04, SD = 4.50], Baseline [M = 22.52, SD = 3.45]), Psychological Domain Score (USC [M = 22.12, SD = 4.11], Baseline [M = 23.08, SD = 2.97]), Environmental Domain Score (USC [M = 29.48, SD = 4.06], Baseline [M = 30.08, SD = 3.14]), and Self-rated Health Single Question Score (USC [M = 3.40, SD = .76], Baseline [M = 3.64, SD = .70]) displayed trends in the predicted direction for USC compared to Baseline, but the differences did not reach significance. For the Social Domain Score, USC (M = 10.20, SD = 1.94) was nearly identical to baseline (M = 10.20, SD = 1.73).

H1d: The PTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Hypothesis 1d was confirmed for all six dependent variables: Physical Domain Score (PTC [M = 19.40, SD = 3.89], Baseline [M = 22.52, SD = 3.45]), Psychological Domain Score (PTC [M = 20.44, SD = 3.50], Baseline [M = 23.08, SD = 2.97]), Social Domain Score (PTC [M = 9.40, SD = 1.47], Baseline [M = 10.20, SD = 1.73]), Environmental Domain Score (PTC [M =

27.52, SD = 3.93], Baseline [M = 30.08, SD = 3.14]), QOL Single Question Score (PTC [M = 3.24, SD = .72], Baseline [M = 4.12, SD = .73]), and Self-rated Health Single Question Score (PTC [M = 2.40, SD = .76], Baseline (M = 3.64, SD = .70].

Non-hypothesized Post-Hoc Comparisons

Physical Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC, and significantly lower than FTC. USC was significantly higher than PTC and significantly lower than FTC. PTC was significantly lower than FTC. A graph of the marginal means is presented in Figure 1.

Psychological Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC. USC was significantly higher than PTC and significantly lower than FTC. PTC was significantly lower than FTC. A graph of the marginal means is presented in Figure 2.

Social Domain Score Pairwise Comparisons: DSC was significantly higher than PTC and significantly lower than FTC. USC was also significantly higher than PTC and significantly lower than FTC. PTC was significantly lower than FTC. A graph of the marginal means is presented in Figure 3.

Environmental Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC. USC was significantly higher than PTC and significantly lower than FTC. PTC was significantly lower than FTC. A graph of the marginal means is presented in Figure 4.

QOL Single Question Pairwise Comparisons: DSC was significantly higher than USC and PTC. USC was significantly higher than PTC, and significantly lower than FTC. Finally, PTC was significantly lower than FTC. A graph of the marginal means is presented in Figure 5.

Self-rated Health Single Question Pairwise Comparisons: DSC was significantly higher than USC and PTC. USC was significantly higher than PTC and significantly lower than FTC. PTC was also significantly lower than FTC. A graph of the marginal means is presented in Figure 6.

Study 2a Discussion

Overview

These results lend support to the idea that simply requesting an individual to use a particular comparison during self-report of a QOL scale significantly changes the numerical outcome of that scale. The repeated measures design demonstrates the systematic effect of manipulating comparison use within one individual in a relatively short period of time; that is, leading an individual to change their answers to the same questions repeated five times over the course of less than an hour. Figures 1 – 6 present the overall pattern of this effect: from Baseline, at least one aspect of the WHOQOL-BREF increases significantly with a DSC, decreases significantly with an USC, decreases dramatically with a PTC, and then recovers to, or significantly surpasses Baseline with a FTC.

From a research standpoint, this suggests that it is possible and necessary to understand an individual's natural comparison usage when quantifying QOL. By adding a simple question such as "When answering this question, to whom were you comparing yourself?" with DSC, USC, PTC, and FTC options, we can capture part of the personal evaluative process in a systematic way. This information can then be used to track an individual's progress across several research situations, such as pharmacologic and non-pharmacologic interventions, as

explicated by Khanna and Tsevat (2007). While current QOL scales are used for this purpose already, adding the comparison question captures a dimension often spoken of but seldom measured in the QOL literature, and it does so in a zero-cost, time efficient, non-invasive manner. Alternatively, these results also suggest that it would be possible to direct all individuals to use the same comparison process for their QOL self-ratings; this would be another approach to ensuring that data collected during a clinical trial, for example, was consistent in QOL measurement approach.

Application

Salient to the Study 2a population, one can imagine using the comparison question to track an individual's adaptation progress after being admitted to an assisted living facility. Limited results from Study 1 suggest that individuals from the assisted living population who were newer admits, and qualitatively unhappy, displayed heavy usage of recent PTC, thinking about the time before they were admitted to assisted living. For example, FHAL015 was an extremely difficult recruit, and had been at the facility only three months when I spoke with her. The example quote used to drive the PTC directional hypothesis is an excellent illustration of this point:

> -FHAL015, LN 70 – 71, *"That's all I remember I can remember a time, just barely when I wasn't sick. And I could do things for myself. Now I have to rely on her (indicates her caretaker) for everything."*

Now let us assume that a staff member tracking FHAL015 knew that she was using PTC as part of her baseline personal evaluative process, and that use of PTC has been demonstrated to lower an individual's self-reported QOL in an assisted living population. FHAL015 could then be

identified as needing follow-up services for adapting to her new setting, in part perhaps by receiving training on how to change her comparison usage. This training could come in the form of directed cognitive behavioral therapy (CBT) when PTC is conceptualized as a maladaptive thought process. Study 1 offers us examples of how an individual can change the impact of PTC on their own by adapting their expectations for their current situation:

> -FHAL019, LN 217 – 220, *"The past is the past. I had a house in the past. That's because I needed a house in the past. This is all I need when you get older. You learn, just to get what you need and be happy with it. What I had back then, I had some great houses. What I have right now, I have a great room. That's all I need, be happy with what you need."*

An individual using PTC in a maladaptive way could be shown how to alter their expectations, like FHAL019, so that PTC no longer has the toxic effect demonstrated in Studies 1 and 2a. An individual's progress throughout the CBT process could then be tracked using the comparison question.

Limitations

Though the within-subjects design using an assisted living population is both statistically powerful and contextually relevant, it has two main limitations. First, though a Latin Square design was implemented to control for order effects and there was no significant relation between any of the dependent variables and randomly assigned Latin Square order, expectancy effects, practice effects, and fatigue effects remain concerns in a repeated measures design. Second, generalizability to older adults outside of an assisted living context cannot be extrapolated from the Study 2a sample.

To address these two issues, Study 2b employed a fully randomized between-subjects design using a sample of community dwelling older adults.

<div align="center">Study 2b</div>

Hypotheses

The hypotheses for Study 2b were identical to Study 2a with the exception of hypothesis 1b concerning Future Temporal Comparisons. FTC produced the opposite of the predicted effect in Study 2a. I therefore changed my expectation for hypothesis 1b in Study 2b. The resulting hypotheses are as follows:

H1: WHOQOL-BREF scores will significantly vary from baseline according to comparison vignette prime condition.

H1a: The DSC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.

H1b: The FTC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.

H1c: The USC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

H1d: The PTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Method

Participants

A convenience sample of 76 older adult volunteers affiliated with the Retirement Systems of Alabama participated on a voluntary basis. Demographic information for the sample is presented in Table 4.

Materials

The materials for Study 2b, including the Comparison Prime Vignettes and the WHOQOL-BREF, were identical to Study 2a, but adapted for administration online using SurveyMonkey.com (see Appendix D for a link to the survey). The MMSE was not included in Study 2b, as the incidence of cognitive impairment in a community dwelling population capable of completing an online survey was not expected to be high and online administration of the MMSE has significant operational drawbacks.

Design and Procedure

Study 2b employed a fully randomized between-subjects design with one independent variable, Comparison Vignette Prime Condition, consisting of five levels (QOL baseline, QOL Downward Social Comparison, QOL Upward Social Comparison, QOL Past Temporal Comparison, and QOL Future Temporal Comparison).

Participants were recruited via email request through affiliation with the Retirement Systems of Alabama. Potential participants received an email with a hyperlink to the survey hosted by SurveyMonkey.com. Upon following the link, participants were taken to an introductory page briefly explaining the Study. If the participants chose to continue, they were

taken to an informed consent page worded according to the approved protocol listed in Appendix B. If the participant read the informed consent and decided not to continue, they were immediately directed to the debriefing page. If the participant read the informed consent and did choose to participate, they continued to a page where they were randomly assigned to one of the five Comparison Vignette Prime Conditions. Participants then completed the WHOQOL-BREF and were debriefed and thanked according to Appendix B.

Results

Preparation of Dependent Variables: Raw participant responses were downloaded from SurveyMonkey.com in spreadsheet format. They were then cleaned and transferred to a spreadsheet set up to calculate the four domain scores of the WHOQOL-BREF: physical, psychological, social, and environmental, as well as the Single Question QOL and Self-rated Health scores. This resulted in six dependent variables identical to those used in Study 2a: Physical, Psychological, Social, and Environmental domain score, as well as overall QOL and Self-rated Health.

Consideration of Secondary Variables: As in Study 2a, demographic data were collected as part of the WHOQOL-BREF (see Table 4). Since no specific hypotheses were made regarding demographic factors, age, gender, and ethnicity were correlated with each of the six dependent variables in order to determine the suitability of including any of them in the main analyses. There were no significant relations between the dependent variables and ethnicity. There was a significant relation between age and Physical Domain Score (r [67] = -.42, $p < .05$), such that as age increased average Physical Domain Score decreased. There was a significant

relation between gender and Psychological Domain Score (r [76] = -.29, $p < .05$). A follow-up t-test revealed that males (n = 43) reported a higher average Psychological Domain Score (M = 25.12, SD = 2.74) than females (n = 33, M = 23.39, SD = 2.96), t (74) = 2.62, $p < .05$. Due to these significant relations, age was included in an initial Physical Domain Score analysis, and gender was included in an initial Psychological Domain Score analysis. In each case, Condition had a significant effect above and beyond the secondary variable, and the interaction between Condition and secondary variable was not significant. Considering this, and for the results of Study 2a and Study 2b to be easily comparable, main analyses were conducted using six one-way between-subjects ANOVAs.

Main analyses: As the dependent variables were demonstrated to be conceptually related in Study 2a, I first conducted a Multivariate Analysis of Variance (MANOVA) to determine the omnibus effect of Comparison Vignette Prime Condition on the WHOQOL outcome variables. The omnibus effect was significant, F (24, 276) = 3.13, $p < .001$ using Wilks' Lambda. A series of six follow-up one-way between-subjects ANOVAs with one independent variable, Comparison Vignette Prime Condition, consisting of five levels (Baseline, DSC, USC, PTC, and FTC) was then conducted in order to determine the effect of Comparison Vignette Prime Condition on Physical, Psychological, Social, and Environmental domain scores, as well as overall QOL and Self-rated Health scores on the WHOQOL-BREF. All six ANOVAs were significant (all $p < .001$). Omnibus test results are listed in Table 5. Significant results were followed by post-hoc comparisons using Fisher's Least Significant Difference method. These results are broken down by hypothesis and dependent variable next.

H1: WHOQOL-BREF scores will significantly vary from baseline according to comparison vignette prime condition.

Hypothesis 1 was confirmed for all six dependent variables, all *p* < .001 (See Table X).

H1a: The DSC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.

Hypothesis 1a was confirmed for Psychological Domain Score (DSC [M = 26.81, SD = 1.94], Baseline [M = 25.00, SD = 1.81]), Social Domain Score (DSC [M = 12.88, SD = 1.26], Baseline [M = 11.60, SD = 1.55]), Environmental Domain Score (DSC [M = 34.81, SD = 2.79], Baseline [M = 32.67, SD = 1.50]), QOL Single Question Score (DSC [M = 4.94, SD = .25], Baseline [M = 4.20, SD = .41]), and Self-rated Health Single Question Score (DSC [M = 4.38, SD = .50], Baseline [M = 3.93, SD = .46]). Though DSC (M = 30.13, SD = 2.75) was numerically higher than Baseline (M = 29.87, 2,23) for Physical Domain Score, this difference did not reach significance.

H1b: The FTC vignette prime condition will result in significantly higher WHOQOL-BREF scores compared to baseline.

Hypothesis 1b was not confirmed, though differences were in the predicted direction for all six dependent variables: Physical Domain Score (FTC [M = 30.44, SD = 2.58], Baseline [M = 29.87, SD = 2.23]), Psychological Domain Score (FTC [M = 25.63, SD = 2.78], Baseline [M = 25.00, SD = 1.81]), Social Domain Score (FTC [M = 11.63, SD = 1.96], Baseline [M = 11.60, SD = 1.55]), Environmental Domain Score (FTC [M = 33.63, SD = 3.72], Baseline [M = 32.67, SD = 1.50]), QOL Single Question Score (FTC [M = 4.50, SD = .63], Baseline [M = 4.20, SD =

.41]), and Self-rated Health Single Question Score (FTC [M = 4.19, SD = .54], Baseline [M = 3.93, SD = .46]).

H1c: The USC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Hypothesis 1c was confirmed for all six dependent variables: Physical Domain Score (USC [M = 24.07, SD = 3.36], Baseline [M = 29.87, SD = 2.23]), Psychological Domain Score (USC [M = 21.78, SD = 2.30], Baseline [M = 25.00, SD = 1.81]), Social Domain Score (USC [M = 9.57, SD = 1.40], Baseline [M = 11.60, SD = 1.55]), Environmental Domain Score (USC [M = 30.36, SD = 1.98], Baseline [M = 32.67, SD = 1.50]), QOL Single Question Score (USC [M = 3.79, SD = .43], Baseline [M = 4.20, SD = .41]), and Self-rated Health Single Question Score (USC [M = 3.14, SD = .66], Baseline (M = 3.93, SD = .46]).

H1d: The PTC vignette prime condition will result in significantly lower WHOQOL-BREF scores compared to baseline.

Hypothesis 1d was confirmed for all six dependent variables: Physical Domain Score (PTC [M = 25.00, SD = 4.42], Baseline [M = 29.87, SD = 2.23]), Psychological Domain Score (PTC [M = 22.27, SD = 2.28], Baseline [M = 25.00, SD = 1.81]), Social Domain Score (PTC [M = 9.27, SD = 2.28], Baseline [M = 11.60, SD = 1.55]), Environmental Domain Score (PTC [M = 30.40, SD = 3.42], Baseline [M = 32.67, SD = 1.50]), QOL Single Question Score (PTC [M = 3.67, SD = .72], Baseline [M = 4.20, SD = .41]), and Self-rated Health Single Question Score (PTC [M = 3.00, SD = .85], Baseline (M = 3.93, SD = .46].

Non-hypothesized Post-Hoc Comparisons

  Physical Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC, which were both significantly lower than FTC. A graph of the marginal means is presented in Figure 7.

  Psychological Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC, which were both significantly lower than FTC. A graph of the marginal means is presented in Figure 8.

  Social Domain Score Pairwise Comparisons: DSC was significantly higher than USC, PTC, and FTC. USC and PTC were significantly lower than FTC. A graph of the marginal means is presented in Figure 9.

  Environmental Domain Score Pairwise Comparisons: DSC was significantly higher than USC and PTC, which were both significantly lower than FTC. A graph of the marginal means is presented in Figure 10.

  QOL Single Question Pairwise Comparisons: DSC was significantly higher than USC, PTC, and FTC. USC and PTC were significantly lower than FTC. A graph of the marginal means is presented in Figure 11.

  Self-rated Health Single Question Pairwise Comparisons: DSC was significantly higher than USC and PTC, which were both significantly lower than FTC. A graph of the marginal means is presented in Figure 12.

Study 2b Discussion

Overview

Study 2b replicated and extended the results of Study 2a in a general population of older

adults using a design in which order, practice, and fatigue effects are not concerns. Though

Baseline scores for this sample were higher than those from Study 2a, the same pattern of results

emerged from this sample as in Study 2a. Examination of Figures 7 – 12 confirms this:

compared to Baseline, at least one aspect of the WHOQOL-BREF is significantly higher with a

DSC, significantly lower with an USC, significantly lower with a PTC, and nearly equal to FTC.

What is notable about the extension of this pattern to a general population is the fact that the

primes driving the effect were derived from a population with a narrower set of QOL concerns

compared to the assisted living population.

Application

With the knowledge that comparison use significantly affects self-reported QOL in a

general population of older adults, we can imagine multiple scenarios in which capturing that

personal evaluative process over time would be useful. Let us consider the use of an arthritis

drug to combat pain, and in turn increase functional ability, and in turn increase QOL in a

community dwelling population of older adults, such as the sample from Study 2b. We want to

know if the drug is increasing users' QOL; however, it is difficult and costly, in terms of time

and licensing, to administer a QOL instrument enough times over the course of treatment to

procure adequate data to inform that judgment. We can consider that question 1 of the

WHOQOL-BREF, the overall QOL question, correlated highly with each of the domain scores

in both study samples presented here (see Tables 6 and 7). We can consider further that the value of this question changed significantly according to what type of comparison an individual used when answering it. In lieu of administering an entire scale, the results of Studies 1, 2a, and 2b suggest that an individual's progress could be tracked by just two questions: Question 1 of the WHOQOL-BREF, or similar, and the question presented in the discussion section for Study 2a: "When answering this question, to whom were you comparing yourself?" with DSC, USC, PTC and FTC as answer options. Using the latter question on its own could be used to identify individuals for whom CBT might improve their personal evaluative process, and therefore the outcome of such pharmacologic interventions.

These examples are, admittedly, several steps down the line from the current results. But the current results do represent a significant step forward in our understanding of the personal evaluative process in self-reported QOL, and can be used to construct studies that will explicitly test the scenarios I have outlined in the discussion sections for Studies 2a and 2b. These next steps, along with the broader implications of this dissertation, are discussed next.

CHAPTER 5

INTEGRATION AND CONCLUSION

Improving QOL conceptualization and measurement is an important endeavor because of the many ways in which QOL measures are used, and the significant effects of these QOL applications, including influencing decisions about drug efficacy and cost effectiveness, and subsequent health policy decisions. QOL measurement is an enormous field that spans multiple disciplines (Felce & Perry, 1995; Phillips, 2006). Calls for its unification, clarification, or abandonment have been common for nearly four decades (Abeles, Gift, & Ory, 1994; Rapley, 2003). Amidst the hundreds of definitions and scales and thousands of published papers, QOL scientists agree that an individual's personal evaluative process is of utmost importance in the formulation of QOL. Yet, there have been few attempts to measure this process, and no attempts to manipulate it. This dissertation sought to examine, quantify, and manipulate a portion of the personal evaluative process in self-reporting an individual's QOL by examining it through the lens of social and temporal comparisons within the bounds of the WHOQOL-BREF.

Taken together, the results of Studies 1, 2a, and 2b demonstrate that social and temporal comparisons play a significant role in the personal evaluative process of self-reporting QOL, and that manipulating what type of comparison an individual uses can significantly impact the numerical outcome of the WHOQOL-BREF. This information has value at the conceptual level in that it demonstrates that a process heretofore suspected of being idiosyncratic is in fact systematic. This finding offers important alternatives for QOL scientists, because once detected and quantified, it is possible to compensate for a systematic bias. The results of this dissertation

thus lay the groundwork for using knowledge of the comparison process in clinical application

for older adults. Next I consider the overall outcome of each type of comparison, and expand

upon possible positive applications for older adults. I then place these within the context of the

existing QOL literature.

Downward Social Comparisons

The qualitative result that well-adjusted individuals use DSC is not surprising

considering the work of Wills (1981) and other in Downward Comparison Theory. It is striking

that individuals overwhelmingly used DSC in as a contrast strategy. However, Studies 2a and 2b

demonstrated that simply priming a DSC can significantly increase an individual's self-reported

QOL, as quickly as 10 minutes after reporting a lower QOL baseline. To date, DSC has been

observed as the outcome of a strategy for self-enhancement. The results of using it as a

manipulation suggest that it can be also be *taught* as a coping strategy and an adaptive

comparison process.

Upward Social Comparisons

Unprompted USC did not appear often in the qualitative results of Study 1, suggesting

the individuals either do not use or are unlikely to report using it as part of the comparison

process. When individuals were primed to use USC in Studies 2a and 2b, their QOL scores

dropped significantly from baseline. This suggests, at least in an older adult population, that

USC is a maladaptive comparison process. More work is needed to clarify this point. However,

we can assume that USCs are used with target contrast by these older adult samples, and this

tells us something about identifying individuals for CBT follow-up if an individual commonly

uses USC in self-reporting QOL. Along with PTC, USC with target contrast represents a negative and untenable position for the person making the comparison, and so should be corrected in order to improve the individual's current outlook.

Past Temporal Comparisons

The qualitative results for PTC were clear. Two participants, anecdotally the most difficult to recruit and most difficult to interview, reported using PTC almost exclusively. These two participants also displayed many hallmarks of depression, social isolation, and maladaptive, self-attacking thinking. Literature on temporal comparisons often speaks of using PTC as a sort of "secret weapon" in making oneself feel better about how they are in the present by selectively (and sometimes untruthfully) disparaging a past self (Ross & Wilson, 2003). This was not the case in Study 1, and not the case in Studies 2a and 2b. The PTC prime produced the most consistent, and most negative result of any comparison type. It was reported exclusively with contrast to a more positive target, one that individuals did not believe they could achieve again. However, it is important to note that the wording of the prime may have restricted the possibility of using PTC in an adaptive manner. In cases where PTC was reported but did not have such negative results, the individuals making that report also described adjusting their expectations to fit their current situation. This is the application that can come from observing an individual using PTC, to guide that individual to adjust their expectations, or to use an adaptive DSC.

Future Temporal Comparisons

Individuals using FTC in the qualitative data reported it as a negative experience often coupled with a DSC with target similarity. I therefore hypothesized that FTCs would produce

84

significantly lower than baseline QOL scores in Study 2a. This was not the case, and the reason only becomes clear when the FTC + DTC combination is properly considered. When unprompted, individuals in the assisted living population had plenty of readily available DSC targets that provided a template for feared possible selves. But when that FTC was specifically primed in Studies 2a and 2b, individuals had a degree of separation from the target not afforded by the contextually specific targets given in Study 1. The result was a contrast effect that actually improved some individuals' QOL scores compared to baseline. Though this condition produced the only positive result other than DSC, it seems unlikely that it would be taught as an effective coping strategy considering the conditions in which it was reported in Study 1. Further work is needed to clarify the relationship between FTC and QOL.

Situating the Results in the QOL Literature

Recall the review of QOL definitions from Chapter 2: Haas (1999) calls it "subjective sense," Emerson (1985) refers to "an individual's values…" and Lehman (1983) calls QOL a "subjective matter." To this point the subjective aspect of QOL measurement has been confined to measures of SWB, with the admission that even SWB measures are affected by an unquantified personal evaluative process (Prutkin & Feinstein, 2002). The results of this dissertation provide the first evidence that at least part of the personal evaluative process is systematic and can be manipulated. The next step in utilizing this knowledge is demonstrating that the effect of social and temporal comparisons can not only be manipulated but measured. The QOL field would then be able to point to a common measurement basis amidst all the

disagreement over its definition and proper application, providing a baseline of discussion for further research in this broad and important area.

Future Directions

The results of this dissertation are promising, but further work is needed to make the jump from these initial results to responsible application of this new knowledge about the comparison process in older adults QOL self-report.

In order to use the comparison questions outlined above as a progress-tracking tool, a study would have to be conducted in which that question was explicitly used in that role. For instance, a nursing home could administer the WHOQOL-BREF along with the comparison question to individuals upon admittance to the home, and then at regular intervals afterward. Those who start with maladaptive comparisons and do not naturally progress could be targeted for tailored attention after an appropriate time. Alternately, comparison usage could be tracked and correlated with other quality indicators. The initial comparison outcome could also be used to inform what life enrichment activities would be most appropriate for that individual. Work specifically looking at an individual's social engagement and natural comparison usage could be conducted to better clarify that point.

In order to use DSC as an adaptive coping strategy, work would have to be done in which the DSC process was broken down into progressive steps and then administered in an intervention-style CBT study. For instance, if an individual were identified as using a maladaptive PTC upon admittance to a nursing home or assisted living facility, they could be coached to use DSC in a step-by-step, progressive manner. Their QOL could then be tracked

across the duration of that intervention, with the expectation being that QOL would improve as the individual adopted the DSC strategy and abandoned the PTC strategy. Alternately, participants could be directed to change their expectations to fit their current situation, needs, and capabilities, thus negating the negative impact of the PTC without having to adopt an entirely new comparison strategy.

Summary

Social and temporal comparisons play a significant, systematic role in older adults' personal evaluative process when self-reporting QOL. Outcomes associated with the different types of comparison can be used to improve our conceptual knowledge of how QOL is derived, how to properly capture it as an outcome variable, and to inform clinical practice in improving individuals' self-reported QOL.

References

Abeles, R. P., Gift, H. C., & Ory, M. G. (Eds.). (1994). *Aging and quality of life.* New York: Springer Publishing Company.

Affleck, G., & Tennen, H. (1991). Social comparison and coping with major medical problems. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 369 – 393). Hillsdale, NJ: Lawrence Erlbaum.

Allison, P. J., Locker, D., & Feine, J. S. (1997). Quality of life: A dynamic construct. *Social Science and Medicine, 45*, 221-230.

Amir, M., Roziner, I., Knoll, A., & Neufeld, M. Y. (1999). Self-efficacy and social support as mediators in the relation between disease severity and quality of life in patients with epilepsy. *Epilepsia*, *40* (2), 216-224.

Armstrong, D., & Caldwell, D. (2004). Origins of the concept of quality of life in health care: A rhetorical solution to a political problem. *Social Theory and Health*, *2* (4), 361-371.

Blalock, S. J., Afifi, R. A., DeVellis, B. M., Holt, K., & DeVellis, R. F. (1990). Adjustment to rheumatoid arthritis: The role of social comparison processes. *Health Education Research, 5,* 361 – 370.

Blalock, S. J., DeVellis, B., & DeVellis, R. (1989). Social comparison among individuals with rheumatoid arthritis. *Journal of Applied Social Psychology, 19,* 665 – 680.

Bonomi, A. E., Patrick, D. L., Bushnell, D. M., & Martin, M. (2000). Validation of the United States' version of the World Health Organization Quality of Life (WHOQOL) instrument. *Journal of Clinical Epidemiology, 53*, 1 – 12.

Bowling, A. (1995). *Measuring health: A review of quality of life measurement scales.* Philadelphia, PA: Open University Press.

Bowling, A. (1997). *Measuring health: A review of quality of life measurement scales.* Philadelphia, PA: Open University Press.

Bowling, A. (2004). A taxonomy and overview of quality of life. In: J. Brown, A. Bowling, & T. Flynn (Eds.), *Models of quality of life: A taxonomy and systematic review of the literature.* University of Sheffield: FORUM Project.

Bowling, A., Banister, D., Sutton, S., Evans, O., & Windsor, J. (2002). A multidimensional model of the quality of life in older age. *Aging & Mental Health*, *6*, 355 - 371.

Bowling, A., & Gabriel, Z. (2004). An integrational model of quality of life in older age. Results from ESRC/MRC HSRC quality of life survey in Britain. *Social Indicators Research*, *69*, 1 – 36.

Bruett, T. L., & Overs, R. P. (1969). A critical view of 12 ADL scales. *Physical Therapy, 49*, 857 – 862.

Buunk, B. P., Collins, R. L., Taylor, S. E., Van Ypern, N. W., & Dakof, G. A. (1990). The affective consequences of social comparison: Either direction has its ups and downs. *Journal of Personality and Social Psychology, 59,* 1238 – 1249.

Campbell, A., Converse, P.E., & Rodgers, W.L. (1976). *The quality of American life.* New York,

NY: Russell Sage Foundation.

Coates, A., Gebski, V., Signorini, D., Murray, P., MacNeil, D., Byrne, M., & Forbes, J. F. (1992). Prognostic value of quality-of-life scores during chemotherapy for advanced breast cancer. Australian New Zealand Breast Cancer Trials Group. *Journal of Clinical Oncology, 10,* 1833-1838.

Coates, A. S., Thomson, D., McLeod, G. R. M., Hersey, P., Gill, P. G., Olver, I. N., Kefford, R., Lowenthal, R. M., Beadle, G., & Walpole, E. (1993). Prognostic value of quality of life scores in a trial of chemotherapy with or without interferon in patients with metastatic malignant melanoma. *European Journal of Cancer, 29* (A), 1731-34.

Cohen, D., & Crabtree, B. *Qualitative Research Guidelines Project*. July 2006. Retrieved March 2008 from http://www.qualres.org/index.html

Cooley, C. H. (1902). *Human nature and social order*. New York, NY: Scribner's.

Corbin, J., & Strauss, A. (1990). Grounded theory method: Procedures, canons, and evaluative criteria. *Qualitative Sociology, 13*, 3-21.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: Sage Publications.

Cross, S., & Markus, H. (1991). Possible selves across the life span. *Human Development, 34,* 230 – 255.

Crum, R. M., Anthony, J. C., Bassett, S. S., & Folstein, M. F. (1993). Population-based norms for the Mini-Mental State Examination by age and educational level. *Journal of the American Medical Association, 12*, 2386 – 2391.

Cummins, R. A. (1997). Assessing quality of life. In R. I. Brown (Ed.), *Quality of life for people with disabilities: Models, research, and practice* (2nd ed., pp. 116 – 150). Cheltenham: Stanley Thornes.

De Vries, J., Drent, M., Van Heck, G.L., & Wouters, E. F. (1998). Quality of life in sarcoidosis: A comparison between members of a patient organisation and a random sample. *Sarcoidosis, Vasculitis, and Diffuse Lung Diseases*, *15* (2), 183-188.

Dibb, B. & Yardley, L. (2006). How does social comparison within a self-help group influence adjustment to chronic illness? A longitudinal study. *Social Science and Medicine, 63,* 1602-1613.

Emerson, E. B. (1985). Evaluating the impact of deinstitutionalisation on the lives of mentally retarded people. *American Journal of Mental Deficiency, 90*, 277-288.

Felce, D. & Perry, J. (1995). Quality of life: Its definition and measurement. *Research in Developmental Disabilities, 16*, 51 – 74.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117 – 140.

Frazier, L. D., Cotrell, V., & Hooker, K. (2003). Possible selves and illness: A comparison of individuals with Parkinson's disease, early stage Alzheimer's disease, and healthy older adults. *International Journal of Behavioral Development, 27,* 1 – 11.

Frazier, L. D., Hooker, K., Johnson, P. M., & Kaus, C. (2000). Continuity and change in possible selves in later life: A 5-year longitudinal study. *Basic and Applied Social Psychology, 22,* 237 – 243.

Frieswijk, N., Buunk, B. P., Steverink, N., & Slaets, J. P. J. (2004). The effect of social

comparison information on life satisfaction of frail older persons. *Psychology and Aging,*

19, 183 – 190.

Frytak, J. R. (2000). Assessment of quality of life in older adults. In R. L. Kane & R. A. Kane

(Eds.), *Assessing older persons*. New York, NY: Oxford University Press Inc.

Gill, T. M., & Feinstein, A. R. (1994). A critical appraisal of the quality of quality-of-life

measurements. *Journal of the American Medical Association, 272*, 619 – 626.

Greenfield, S., & Nelson, E. C. (1992). Recent developments and future issues in the

use of health status assessment measures in clinical settings. *Medical Care, 30,* MS23 –

MS41.

Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal

history. *American Psychologist, 35,* 603 – 618.

Halvorsrud, L., & Kalfoss, M. (2007). The conceptualization and measurement of quality

of life in older adults: A review of empirical studies published during 1994–2006.

European Journal of Ageing, 4, 229 – 246.

Hass, B. K. (1999). Clarification and integration of similar quality of life constructs.

Journal of Nursing Scholarship, 31, 215 – 220.

Helgeson, V. S., & Taylor, S. E. (1993). Social comparisons and adjustment among

cardiac patients. *Journal of Applied Social Psychology, 23,* 1171 – 1195.

Hemphill, K. J., & Lehman, D. R. (1991). Social comparisons and their affective consequences: The importance of comparison dimension and individual difference variables. *Journal of Social and Clinical Psychology, 10,* 372 – 394.

Hendry, F., & McVittie, C. (2004). Is quality of life a healthy concept? Measuring and understanding life experiences of older people. *Qualitative Health Research, 14,* 961 – 975.

Herzog, A. R., & Markus, H. R. (1999). The self-concept in life span and aging research. In V. L. Bengtson & K. Warner Schaie (Eds.), *Handbook of theories of aging* (pp. 227 – 252). New York, NY: Springer.

Higgins, E. T. (1987). Self–discrepancy: A theory relating self and affect. *Psychological Review, 94,* 319–340.

Hyland, M. E. (1992). A reformation of quality of life for medical science. *Quality of Life Research, 1*, 267 – 272.

Hyland, M. E. (2003). A brief guide to the selection of quality of life instrument. *Health and Quality of Life Outcomes, 1*, 24.

Janse, A. J., Gemke, R. J., Uiterwaal, C. S., van der Tweel, I., Kimpen, J. L., & Sinnema, G. (2004). Quality of life: Patients and doctors don't always agree: A meta-analysis. *Journal of Clinical Epidemiology*, *57* (7), 653-661.

Jensen, M. P., & Karoly, P. (1992). Comparative self-evaluation and depressive affect among chronic pain patients: An examination of selective evaluation theory. *Cognitive Therapy and Research, 16,* 297 – 308.

Khanna, D., & Tsevat, J. (2007). Health-related quality of life: An introduction. *The American Journal of Managed Care, 13*, S218 – S223.

Latane, B. (1966). Studies in social comparison: Introduction and over-view. *Journal of Experimental Social Psychology* (Suppl. 1), 1-5.

Lawton, M. P., & Brody, P. M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist, 9*, 179 – 186.

Lehman, A. F. (1983). The well-being of chronic mental patients. Assessing their quality of life. *Archives of General Psychiatry, 40*, 369-373.

Leplege, A., & Hunt, S. (1997). The problem of quality of life in medicine. *Journal of the American Medical Association*, *278*, 47 – 50.

Leplege, A., Reveillere, C., Ecosse, E., Caria, A., & Riviere, H. (2000). Psychometric properties of a new instrument for evaluating quality of life, the WHOQOL-26, in a population of patients with neuromuscular diseases. *Encephale*, *26* (5), 13-22.

Llewellyn-Thomas, H. A., Thiel, E. C., & McGreal, M. J. (1992). Cancer patients' evaluations of their current health states: The influences of expectations, comparisons, actual health status, and mood. *Medical Decision Making, 12,* 115 – 122.

Mapi Research Trust. (2008). *PROQOLID: Patient-reported outcome and quality of life instrument database*. Retrieved April 9, 2008 from http://www.qolid.org/

Markus, H. R., & Herzog, A. R. (1991). The role of the self-concept in aging. *Annual Review of Gerontology and Geriatrics, 11,* 110 - 143.

Markus, H., & Kunda, Z. (1986). Stability and malleability of the self-concept. *Journal of Personality and Social Psychology, 51,* 858 - 866.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954 – 969.

McDowell, I., & Newell, C. (1996). *Measuring health: A guide to rating scales and questionnaires.* New University Press.

Muldoon, M. F., Barger, S. D., Flory, J. D., & Manuck, S. B. (1998). What are quality of life measurements measuring? *British Medical Journal, 16,* 542 – 545.

Najman, J. M., & Levine, S. (1981). Evaluating the impact of medical care and technologies on the quality of life: A review and critique. *Social Science and Medicine, 15,* 107 – 115.

Neisser, U. (1991). Two perceptually given aspects of the self and their development. *Development Review*, *11,* 197 - 209.

O'Carroll, R. E., Smith, K., Couston, M., Cossar, J. A., & Hayes, P. C. (2000). A comparison of the WHOQOL-100 and the WHOQOL-BREF in detecting change in quality of life following liver transplantation. *Quality of Life Research*, *9* (1), 121-124.

Orley, J., Saxena, S., & Herrman, H. (1998). Quality of life and mental illness: Reflections from the perspective of the WHOQOL. *British Journal of Psychiatry*, *172*, 291-293.

Patrick, D. L., & Chiang, Y. P. (2000). Measurement of health outcomes in treatment effectiveness evaluations: Conceptual and methodological challenges. *Medical Care*, *38*, 14-25.

Peel, N., Bartlett, H., & Marshall, A. (2007). Measuring quality of life in older people:

    Reliability and validity of WHOQOL-OLD. *Australasian Journal on Ageing*, *26,* 162 –

    167.

Phillips, A. G., Silvia, P. J., & Paradise, M. J. (2007). The undesired self and emotional

    experience: A latent variable analysis. *Journal of Social and Clinical Psychology*, *26*,

    1035–1047.

Phillips, D. (2006). *Quality of life: Concept, policy, and practice*. New York, NY:

    Routledge.

Pibernik-Okanovic, M., Szabo, S., & Metelko, Z. (1998). Quality of life following a change in

    therapy for diabetes mellitus. *Pharmacoeconomics*, *14* (2), 201-207.

Power, M., Bullinger, M., Harper, A., & The World Health Organization Quality of Life Group.

    The World Health Organization WHOQOL-100: Tests of the universality of quality of

    life in 15 different cultural groups worldwide. *Health Psychology, 18,* 494 – 505.

Power, M., Quinn, K., & Schmidt, S. (2005). Development of the WHOQOL-OLD

    module. *Quality of Life Research, 14*, 2197-2214.

Prutkin, J. M., & Feinstein, A. R. (2002). Quality of life measurements: Origin and

    pathogenesis. *Yale Journal of Biology and Medicine, 75,* 79 – 93.

Rapley, M. (2003). *Quality of life research: A critical introduction*. Thousand Oaks, CA: Sage

    Publications.

Ross, M., & Wilson, A. E. (2003). Autobiographical memory and conceptions of self:

     Getting better all the time. *Current Directions in Psychological Science, 12*, 66-

69.

Sanders, C., Egger, M., Donocan, J., Tallon, D., & Frankel, S. (1998). Reporting on

quality of life in randomised controlled trials: Bibliographic study. *British Medical

Journal, 317*, 1191 – 1194.

Sirgey, M. J., Michalos, A. C., Easterlin, R., Easterlin, R. A., Patrick, D. L., & Pavot, W.

(2006). The quality-of-life (QOL) research movement: Past, present, and future. *Social

Indicators Research*, *76*, 343 – 446.

Skevington, S. M. (1998). Investigating the relationship between pain and discomfort and

quality of life, using the WHOQOL. *Pain*, *76* (3), 395-406.

Stanton, A. L. (1992). Downward comparison in infertile couples. *Basic and Applied Social

Psychology, 13,* 389 – 403.

Stewart, A. L., & King, A. C. (1994). Conceptualizing and measuring quality of life in older

populations. In R. P. Abeles, H. C. Gift, & M. G. Ory (Eds.), *Aging and quality of life*.

New York, NY: Springer Publishing Company.

Straus, A., & Corbin, J. (1998). *Basics of qualitative research* (2nd ed.). Thousand Oaks, CA:

Sage Publications.

Struttmann, T., Fabro, M., Romieu, G., De Roquefeuil, G., Touchon, J., Dandekar,

T., & Ritchie, K. (1999). Quality-of-life assessment in the old using the WHOQOL

100: Differences between patients with senile dementia and patients with cancer.

International Psychogeriatrics, *11* (3), 273-279.

Suls, J., Marco, C. A., & Tobin, S. (1991). The role of temporal comparison, social

comparison, and direct appraisal in the elderly's self-evaluations of health.

Journal of Applied Social Psychology, 21, 1125 – 1144.

Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: Why, with whom, and with what

effect? *Current Directions in Psychological Science, 11*, 159 – 163.

Taylor, C. L. C., Kulik, J., Badr, H., Smith, M., Basen-Engquist, K., Penedo, F., & Gritz, E. R.

(2007). A social comparison theory analysis of group composition and efficacy of

cancer support group programs. *Social Science and Medicine, 65*, 262-273.

Tsevat, J., Weeks, J. C., Guadagnoli, E., Tosteson, A. N. A., Mangione, C. M., Pliskin, J. S.,

Weinstein, M. C., & Cleary, P. D. (1994). Using health-related quality of life

information: Clinical encounters, clinical trials, and health policy. *Journal of

General Internal Medicine, 9*, 576 – 582.

Van der Zee, K. I., Buunk, B. P., & Sanderman, R. (1995). Social comparisons as a

mediator between health problems and subjective health evaluations. *British

Journal of Social Psychology, 34,* 53 – 65.

Vellone, E., Piras, G., Talucci, C., & Cohen, M. Z. (2008). Quality of life for caregivers of

people with Alzheimer's disease. *Journal of Advanced Nursing, 61*, 221 – 231.

Walker, A. (2005). A European perspective on quality of life in old age. *European

Journal of Ageing, 2,* 2 – 12.

Ware, J. E., Kosinski, M., Turner-Bowker, D. M., & Gandek, B. (2002). *How to score

version 2 of the SF-12 health survey (With a supplement documenting version 1).*

Quality Lincoln, RI: Metric Incorporated.

Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-Item Short-Form Health Survey (SF-36):
I. Conceptual framework and item selection. *Medical Care*, *30,* 473-483.

Ware, J. E., Snow K. K., Kosinski, M., Gandek, B. (1993). *SF-36® Health Survey
Manual and Interpretation Guide*. Boston, MA: New England Medical Center, The
Health Institute.

WHOQOL Group. (1995). The World Health Organization Quality of Life assessment
(WHOQOL): Position paper from the World Health Organization. *Social Science &
Medicine*, *41*, 1403-1409.

WHOQOL Group. (1998). The World Health Organization Quality of Life assessment
(WHOQOL): Development and general psychometric properties. *Social Science &
Medicine*, *46*, 1569-1585.

Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological
Bulletin, 90,* 245 – 271.

Wilson, J. J., Chaplain, W. F., & Thorn, B. E. (1995). The influence of different standards on the
evaluation of pain: Implications for assessment and treatment. *Behavior Therapy, 26,*
217 – 239.

Wilson, J. J., Gil, K. M., & Raezer, L. (1997). Self-evaluation, coping, and depressive affect in
African-American adults with sickle-cell disease. *Cognitive Therapy and Research, 21,*
443 – 457.

Wirnsberger, R. M,, De Vries, J., Jansen, T. L., Van Heck, G. L., Wouters, E. F., & Drent,

M. (1999). Impairment of quality of life: Rheumatoid arthritis versus sarcoidosis.

Netherlands Journal of Medicine, *54* (3), 86-95.

Wood, J. V. (1989). Theory and research concerning social comparison of personal

attributes. *Psychological Bulletin, 106,* 231 – 248.

Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to

breast cancer. *Journal of Personality and Social Psychology, 49,* 1169 –1183.

World Health Organization. (1948). Preamble to the constitution of the World Health

Organization as adopted by the International Health Conference, New York, 19 June - 22

July 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records

of the World Health Organization, No. 2, pp. 100) and entered into force on 7 April

1948. The definition has not been amended since 1948.

Ybema, J. F., & Buunk, B. P. (1995). Affective responses to social comparison: A study among

disabled individuals. *British Journal of Social Psychology, 34,* 297 – 292.

Table 1. Demographic Characteristics for Study 1

VARIABLE	VALUE
Age	M = 80.13
	SD = 4.48
	Min = 73
	Max = 90
	n = 23
Gender	Male = 11
	Female = 12
	n = 23
Education	None = 1
	Primary = 10
	Secondary = 8
	Tertiary = 4
	n = 23

Table 2. Demographic Characteristics for Study 2a

VARIABLE	VALUE
Age	M = 80.92
	SD = 4.31
	Min = 72
	Max = 89
	n = 25
Gender	Male = 11
	Female = 14
	n = 25
Education	None = 0
	Primary = 7
	Secondary = 8
	Tertiary = 10
	n = 25

Table 3. Repeated Measures ANOVA Results for Study 2a

	F	df	p	η_p^2
QOL[†]	35.10	(2.95, 70.90)	<.001	.59
Self-Rated Health	63.06	(4, 96)	<.001	.72
Physical Domain Score[†]	57.77	(2.57, 61.72)	<.001	.71
Psychological Domain Score[†]	30.86	(2.81, 67.49)	<.001	.56
Social Domain Score[†]	10.59	(2.99, 71.97)	<.001	.31
Environmental Domain Score	24.68	(4, 96)	<.001	.51

[†] *Geisser-Greenhouse correction used due to violation of sphericity*

Table 4. Demographic Characteristics for Study 2b

VARIABLE	VALUE
Age	M = 61.96
	SD = 6.49
	Min = 49
	Max = 76
	n = 67
Gender	Male = 43
	Female = 33
	n = 76
Ethnicity	Caucasian = 53
	African-American = 15
	Hispanic / Latino = 3
	Asian = 3
	Not Listed / Other = 2
	n = 76

Table 5. Between Subjects ANOVA Results for Study 2b

	F	df	*p*
QOL	15.59	(4, 71)	<.001
Self-Rated Health	15.49	(4, 71)	<.001
Physical Domain Score	14.38	(4, 71)	<.001
Psychological Domain Score	14.38	(4, 71)	<.001
Social Domain Score	11.76	(4, 71)	<.001
Environmental Domain Score	7.36	(4, 71)	<.001

Table 6. Correlations Among Overall QOL, Self-rated
Health and Domain Scores for Study 2a

		QOL	
	n	r	p
Self-rated Health	25	.70	<.001
Physical Domain Score	25	.82	<.001
Psychological Domain Score	25	.76	<.001
Social Domain Score	25	.71	<.001
Environmental Domain Score	25	.69	<.001

Table 7. Correlations Among Overall QOL, Self-rated
Health and Domain Scores for Study 2b

		QOL	
	n	*r*	*p*
Self-rated Health	76	.72	<.001
Physical Domain Score	76	.69	<.001
Psychological Domain Score	76	.79	<.001
Social Domain Score	76	.78	<.001
Environmental Domain Score	76	.72	<.001

Figure 1. Physical Domain Score by Comparison Type
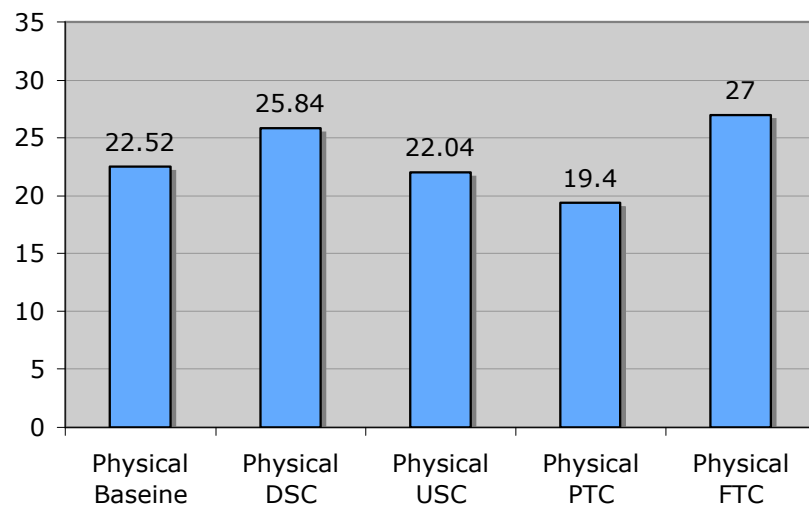
Figure 2. Psychological Domain Score by Comparison Type
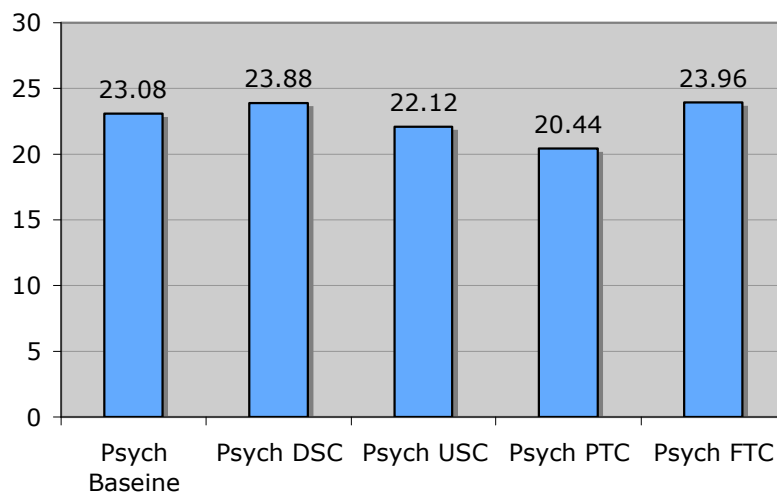
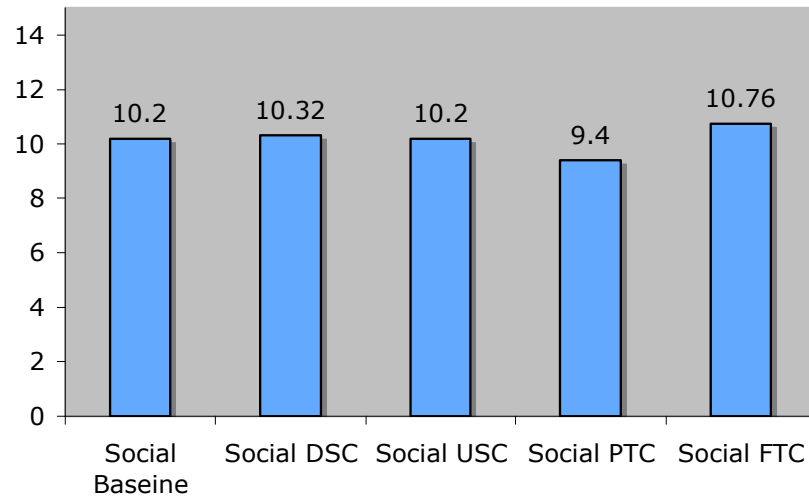*Figure 3.* Social Domain Score by Comparison Type

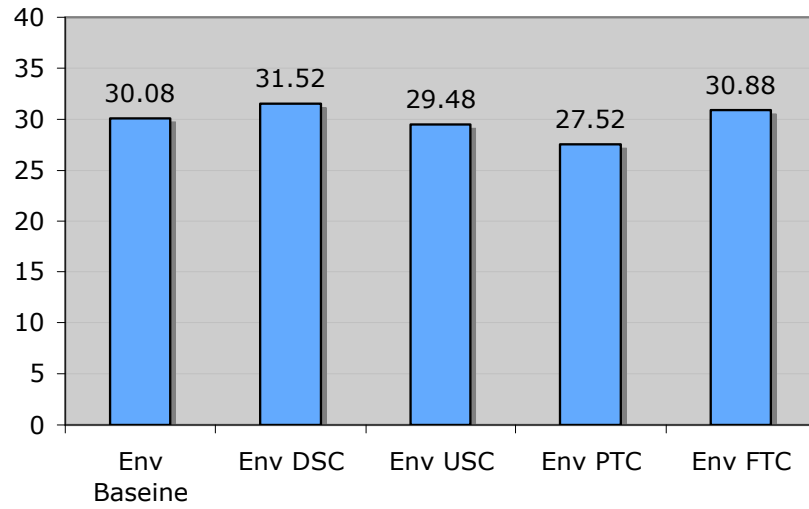*Figure 4.* Environment Domain Score by Comparison Type

111

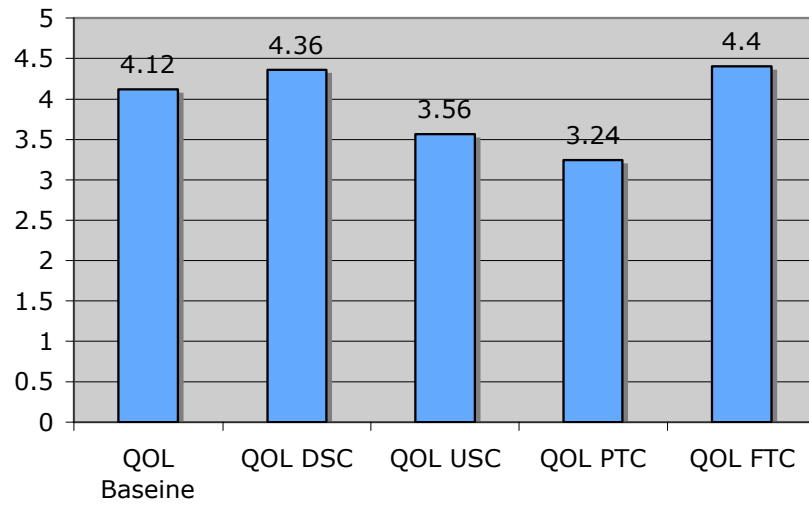*Figure 5.* Quality of Life Single Question Score by Comparison Type

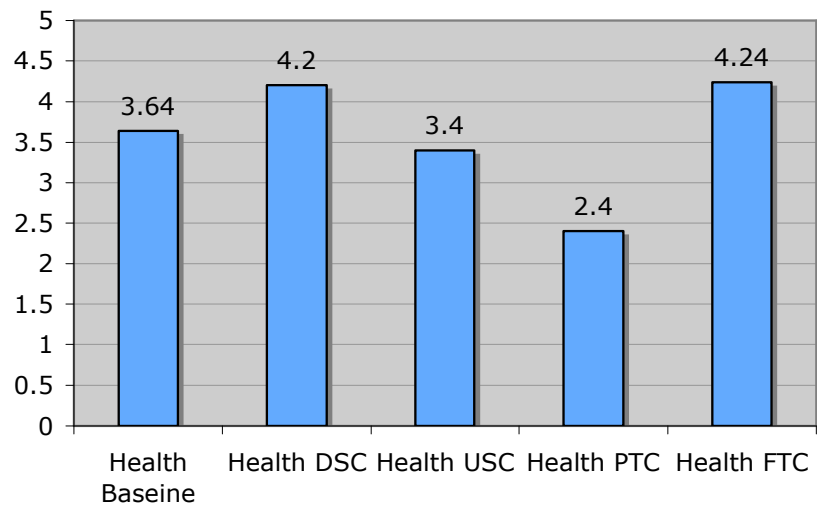*Figure 6.* Self Rated Health Single Question Score by Comparison Type

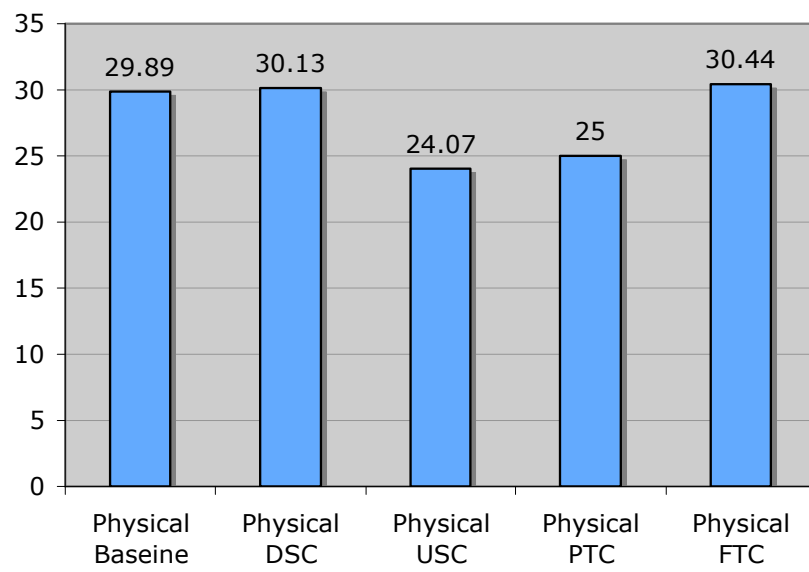*Figure 7.* Physical Domain Score by Comparison Type

Figure 8. Psychological Domain Score by Comparison Type
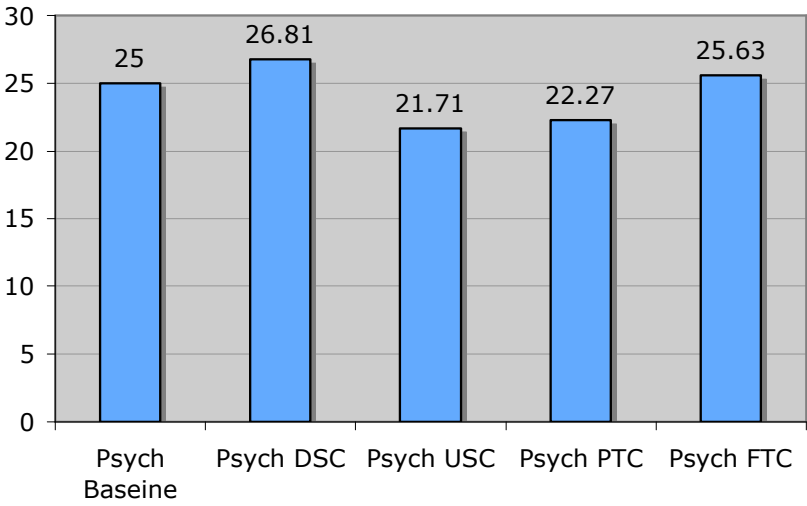
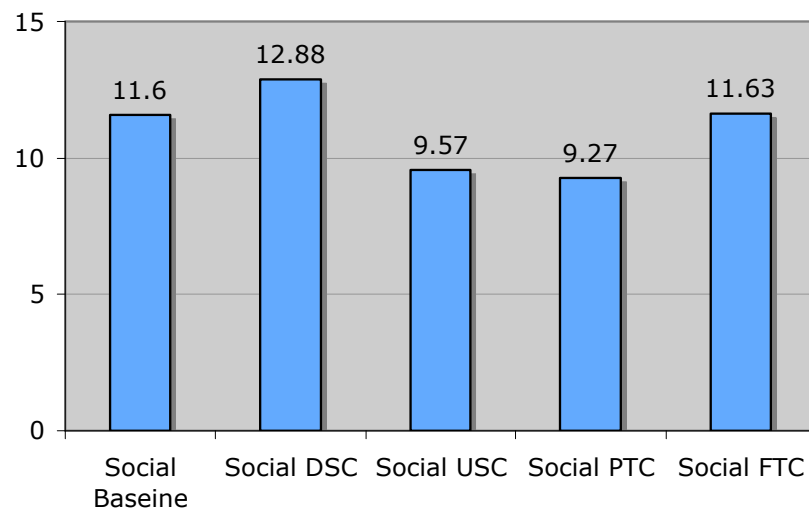*Figure 9.* Social Domain Score
by Comparison Type

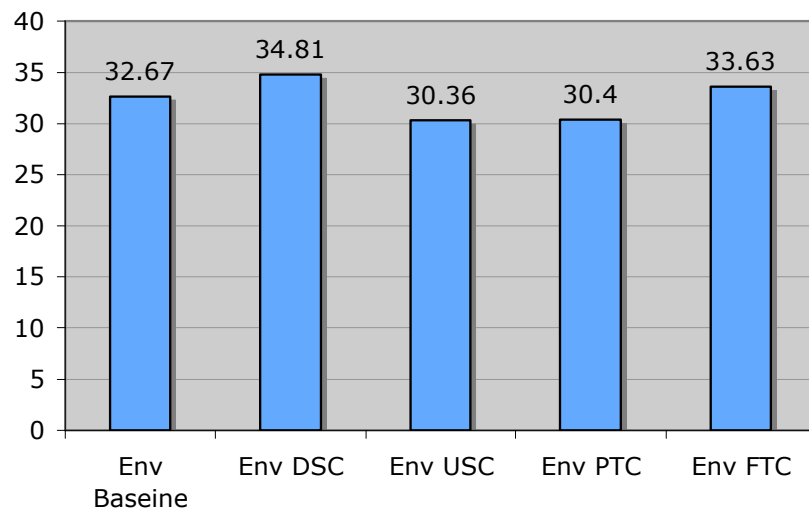*Figure 10.* Environment Domain Score by Comparison Type

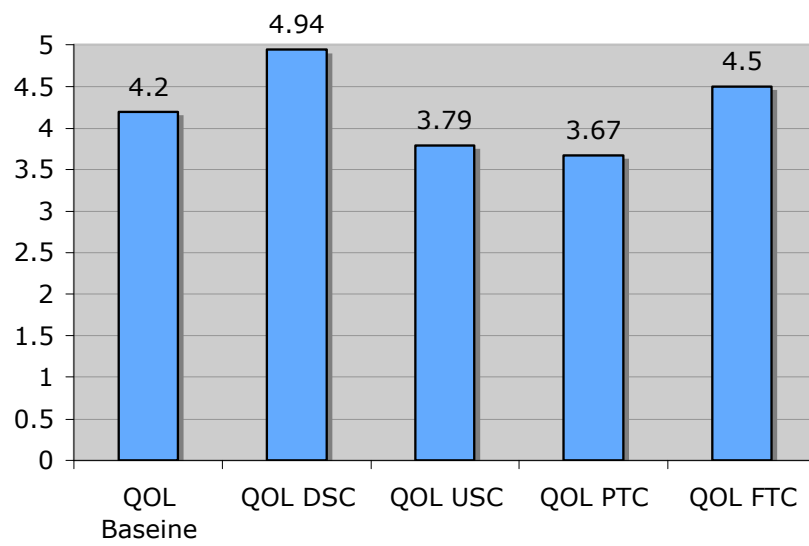*Figure 11.* Quality of Life Single Question Score by Comparison Type

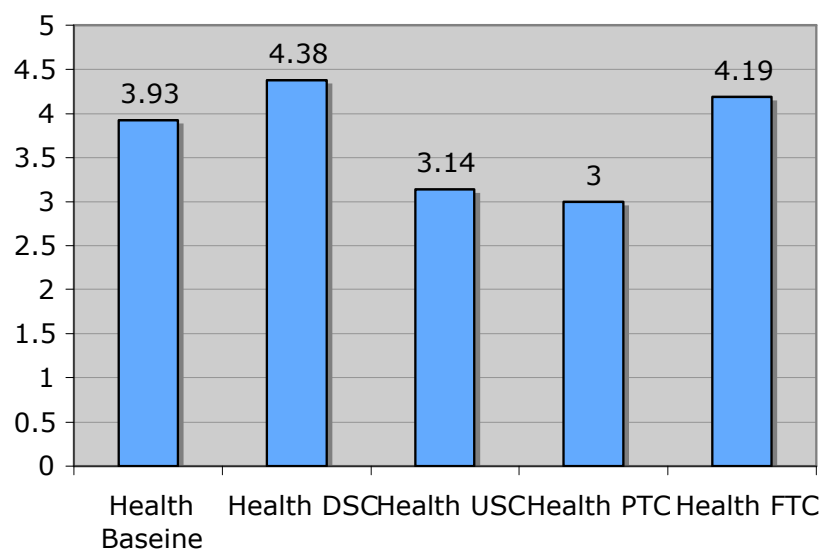*Figure 12.*Self Rated Health Single Question Score by Comparison Ty

APPENDIX A: Guiding Questions for Interviews

Date 2008.05.30

Step 1: Aimed at building rapport and discovering demographic information

1) What is your age?
2) Are you married? Do you have any children? Grandchildren? Would you like to tell me about them?
3) Where were you born? Where did you grow up? What was that like?
4) What do you think makes for a good Quality of Life?
5) Anything else you would like to add?

Step 2: Aimed at exploring the comparison process when answering the WHOQOL-100

1) Please tell me about what you were thinking when you were filling out that questionnaire. What was going through your head?
2) [*if no comparison reference is offered*] Were you thinking about anyone in particular as you filled out the questionnaire?
3) [*if interpersonal comparison is indicated*] Did you think about the past or future at all?
4) [*once comparison reference is offered, IF no comparison type is indicated*]: What do you think about that person? How do you know them? [OR] How do you feel about yourself back then? [OR] What do you think the future will be like for you? [*as appropriate*]
5) Anything else you would like to add?

Date 2008.12.21

QOL Process Qualitative Interview

This interview has four sections: (1) Introduction / rapport building, (2) QOL definition, (3) Facilitated WHOQOL-BREF, (4) Exploration of the introspective process in answering the WHOQOL-BREF.

Section (1) should be kept short. Be aware of long answers / personal narratives. Use return prompts liberally. Section (2) consists of an offered definition, paraphrased from the WHO definition of QOL, and a free response definition from the participants. Section (3) is a facilitated WHOQOL-BREF, including demographics. Section (4) consists of (a) the general "process" question and (b) the differing frames prompts (i.e., if social downward is offered, I prompt on temporal upward, etc.).

The interview is structured so that questions that will be asked of everyone are in bold. Probes that can be used as necessary to achieve a better understanding of the concept are not in bold.

MAIN RESEARCH QUESTIONS:

2. How do individuals introspect upon the comparison process when making QOL judgments? What comparisons do individuals' naturally use when none are provided?
3. Will an individual's QOL responses vary dependent upon how social and temporal comparisons are framed?

Section 1

First I'd like to get to know you a little better. How long have you been living here? Tell me about a typical day for you.

<What are your favorite parts of the day?>

What did you do for a living before retirement?

<Tell me about a typical day for you before coming her.>

Section 2

Now I'd like to talk about the main reason for our interview today. I'm interested in how folks like you decide on their quality of life. By quality of life, I mean how you feel about your position in life… how you feel about your personal goals, expectations, standards and concerns. It means different things to different people, but most folks agree that its made up of things like how you feel about your physical health, your mental well-being, your relationships with others, and where you live. Does that make sense?

- If no, then <Its really about how happy you are with your life right now.>
- If yes, then:

With that said, what do you personally think makes for a good quality of life?

<What is most important to your happiness?>

Now that we've talked about what makes for a good quality of life, what do you personally think makes for a bad quality of life?

<What keeps you from being happy with your life?>

What is your personal definition of quality of life?

<In one sentence, what makes your life worth living?>

(Can also prompt on individual domains from WHOQOL-BREF: physical functioning, psychological, social relationships, environment)

Section 3

Facilitated WHOQOL-BREF: use cue cards.

Section 4

When you were answering the questions of that survey, how did you come to your conclusions? For instance, when you answered "How would you rate your quality of life?", how did you decide that?

<For example, when I say that my car is good, its because I've compared it with other cars and decided that it is better than other cars. Or that its in better shape than it used to be. Tell me about what comparisons you used to answer the questions on the survey.>

(Once an initial comparison method is given fill in the blank below and then prompt on the other basic types)

So you decided by _____. There are several different ways people decide on answers to these questions. For instance, what if you had:
      -compared yourself to someone who you feel is worse off than you?
      -compared yourself to someone who you feel is better off than you?
      -compared yourself as you are now to who you used to be?
      -compared yourself as you are now to who you think you'll be later?

How would that have changed your answers on the survey?

(Then give an example of each domain question by comparison type, as time permits…)
<Questions # 1, 2, 22 and 23>

- How would you rate your quality of life?
- How satisfied are you with your health?
- How satisfied are you with the support you get from your friends?
- How satisfied are you with the conditions of your living place?

Some people use answer different questions using different ways of thinking. Did you stick to one way of thinking throughout the survey, or did you use more than one type of comparison?

(With either answer, probe using questions 1, 2, 22,and 23 again.)

Is there anything else you'd like to tell me about your quality of life, or your ideas about quality of life in general?

Date 2009.01.22

QOL Process Qualitative Interview

This interview has four sections: (1) Introduction / rapport building, (2) QOL definition, (3) Facilitated WHOQOL-BREF, (4) Exploration of the introspective process in answering the WHOQOL-BREF.

Section (1) should be kept short. Be aware of long answers / personal narratives. Use return prompts liberally. Section (2) consists of an offered definition, paraphrased from the WHO definition of QOL, and a free response definition from the participants. Section (3) is a facilitated WHOQOL-BREF, including demographics. Section (4) consists of (a) the general "process" question and (b) the differing frames prompts (i.e., if social downward is offered, I prompt on temporal upward, etc.).

The interview is structured so that questions that will be asked of everyone are in bold. Probes that can be used as necessary to achieve a better understanding of the concept are not in bold.

MAIN RESEARCH QUESTIONS:

4. How do individuals introspect upon the comparison process when making QOL judgments? What comparisons do individuals' naturally use when none are provided?
5. Will an individual's QOL responses vary dependent upon how social and temporal comparisons are framed?

Section 1

First I'd like to get to know you a little better.

What did you do for a living before retirement?

(ONLY ask the following questions if you feel you haven't established good rapport with above question (e.g., if above question was answered in one terse sentence):

How long have you been living here? Tell me about a typical day for you.

<What are your favorite parts of the day?>

Section 2

Thanks, that's helpful. Now I'd like to move to a different topic. I'm interested in how folks like you evaluate/size up/take stock of your quality of life. Quality of life means different things to different people, but most folks agree that its made up of things like how you feel about your physical health, your mental well-being, your relationships with others, and your environment – that is, where you live and your surroundings. Does that make sense? [put this definition on a card.]

  -   If no, then <Its really about how satisfied you are with your life the way it is right now.>
  -   If yes, then:

With that said, what do you personally think makes for a good quality of life?

<What is most important to your satisfaction with your life...your happiness?>

Now that we've talked about what makes for a good quality of life, what do you personally think makes for a poor, or bad, quality of life?

<What gets in the way of you being completely satisfied, or happy with, your life?>

What is your personal definition of quality of life?

<In one sentence, what makes your life worth living?>

(After prompt above if needed can also prompt on individual domains from WHOQOL-BREF: physical functioning, psychological, social relationships, environment)

Section 3

Facilitated WHOQOL-BREF: use cue cards.

Section 4

124

When you were answering the questions of that survey, how did you come to your answers? For instance, you answered the question "How would you rate your quality of life?", by saying _____. How did you decide that that would be your answer?

<For example, some people report that when they decide how to answer these survey questions, they are comparing themselves to others they know. Some people report that they think about the way they used to be, or the way they think they'll be in the future. Were you comparing yourself to anyone, or to any groups of people, when you were trying to decide how to answer these questions?>

(Once an initial comparison method is given fill in the blank below and then prompt on the other basic types)

So you decided by _____. There are several different ways people decide on answers to these questions. For instance, what if you had:
- **-compared yourself to someone who you feel is worse off than you?**
- **-compared yourself to someone who you feel is better off than you?**
- **-compared yourself as you are now to the way you used to be?**
- **-compared yourself as you are now to the way you think you'll be in the future?**

How would that have changed your answers on the survey?

(Then give an example of each domain question by comparison type, as time permits...)
<Questions # 1, 2, 22 and 23>

- How would you rate your quality of life?
- How would you rate how satisfied you are with your health?
- How would you rate how satisfied you are with the support you get from your friends?
- How would you rate how satisfied you are with the conditions of your living place?

Some people use answer different questions using different ways of thinking. Did you stick to one way of thinking throughout the survey, or did you use more than one type of comparison?

(With either answer, probe using questions 1, 2, 22,and 23 again.)

Is there anything else you'd like to tell me about your quality of life, or your ideas about quality of life in general?

Date 2009.03.12

QOL Process Qualitative Interview

This interview has four sections: (1) Introduction / rapport building, (2) QOL definition, (3) Facilitated WHOQOL-BREF, (4) Exploration of the introspective process in answering the WHOQOL-BREF.

Section (1) should be kept short. Be aware of long answers / personal narratives. Use return prompts liberally. Section (2) consists of an offered definition, paraphrased from the WHO definition of QOL, and a free response definition from the participants. Section (3) is a facilitated WHOQOL-BREF, including demographics. Section (4) consists of (a) the general "process" question and (b) the differing frames prompts (i.e., if social downward is offered, I prompt on temporal upward, etc.).

The interview is structured so that questions that will be asked of everyone are in bold. Probes that can be used as necessary to achieve a better understanding of the concept are not in bold.

MAIN RESEARCH QUESTIONS:

6. How do individuals introspect upon the comparison process when making QOL judgments? What comparisons do individuals' naturally use when none are provided?
7. Will an individual's QOL responses vary dependent upon how social and temporal comparisons are framed?

Section 1

First I'd like to get to know you a little better.

What did you do for a living before retirement?

(ONLY ask the following questions if you feel you haven't established good rapport with above question (e.g., if above question was answered in one terse sentence):

How long have you been living here? Tell me about a typical day for you.

<What are your favorite parts of the day?>

Section 2

Thanks, that's helpful. Now I'd like to move to a different topic. I'm interested in how folks like you evaluate/size up/take stock of your quality of life. Quality of life means

different things to different people, but most folks agree that its made up of things like how you feel about your physical health, your mental well-being, your relationships with others, and your environment – that is, where you live and your surroundings. Does that make sense? [put this definition on a card.]

- If no, then <Its really about how satisfied you are with your life the way it is right now.>
- If yes, then:

With that said, what do you personally think makes for a good quality of life?

<What is most important to your satisfaction with your life...your happiness?>

Now that we've talked about what makes for a good quality of life, what do you personally think makes for a poor, or bad, quality of life?

<What gets in the way of you being completely satisfied, or happy with, your life?>

What is your personal definition of quality of life?

<In one sentence, what makes your life worth living?>

(After prompt above if needed can also prompt on individual domains from WHOQOL-BREF: physical functioning, psychological, social relationships, environment)

Section 3

Facilitated WHOQOL-BREF: use cue cards.

Section 4

Ok, great. Now I'd like to ask you a little more about the questions you just answered. For instance, on number 1 when I asked, "How would you rate your quality of life?", you answered _____. What made you answer _____ instead of the other options, like _____ or _____?

Alternately:

When you were answering the questions of that survey, how did you come to your answers? For instance, you answered the question "How would you rate your quality of life?", by saying _____. How did you decide that that would be your answer?

127

<For example, some people report that when they decide how to answer these survey questions, they are comparing themselves to others they know. Some people report that they think about the way they used to be, or the way they think they'll be in the future. Were you comparing yourself to anyone, or to any groups of people, when you were trying to decide how to answer these questions?>

(Once an initial comparison method is given fill in the blank below and then prompt on the other basic types)

So you decided by _____. There are several different ways people decide on answers to these questions. So I'd like to look back at a few specific questions from the survey and ask them in a few different ways. Ok?

<Questions # 1, 2, 22 and 23>

We'll start with number 1:

- **How would you rate your quality of life?**
    - **Compared to someone better off than you? _____**
    - **Compared to someone worse off than you? _____**
    - **Compared to how you were in the past? _____**
    - **Compared to how you think you'll be in the future? _____**

- **How would you rate how satisfied you are with your health?**
    - **Compared to someone better off than you? _____**
    - **Compared to someone worse off than you? _____**
    - **Compared to how you were in the past? _____**
    - **Compared to how you think you'll be in the future? _____**

- **How would you rate how satisfied you are with the support you get from your friends?**
    - **Compared to someone better off than you? _____**
    - **Compared to someone worse off than you? _____**
    - **Compared to how you were in the past? _____**
    - **Compared to how you think you'll be in the future? _____**

- **How would you rate how satisfied you are with the conditions of your living place?**
    - **Compared to someone better off than you? _____**
    - **Compared to someone worse off than you? _____**
    - **Compared to how you were in the past? _____**
    - **Compared to how you think you'll be in the future? _____**

So now we've looked at several different ways you could think about these questions. Some people use answer different questions using different ways of thinking. Did you stick to one way of thinking throughout the survey, or did you use more than one type of comparison?

(With either answer, probe using questions 1, 2, 22,and 23 again.)

Is there anything else you'd like to tell me about your quality of life, or your ideas about quality of life in general?

APPENDIX B: IRB Approved Informed Consent and Debriefing

UNIVERSITY OF ALABAMA
Informed Consent for a Research Study

You are being asked to take part <u>in a research study.</u> This study is called The Use of Social Comparison Frames to Explore the Process of Quality of Life Evaluation in Healthy Older Adults. The study is being done by Joseph F. Chandler, MA, a doctoral student at the University of Alabama, and Dr. A. Lynn Snow, who is a professor at the University of Alabama.

What is this study about?
This study is being done to better understand how older adults decide how good or bad their quality of life is. Different individuals have different opinions about what makes for a good quality of life, and everyone decides this differently. This study will help us better understand how older adults decide about their own quality of life, and will give us information that can be used to improve older adults' quality of life in the future.

Why is this study important--What good will the results do?
This knowledge is important because a better understanding about what makes up a good quality of life for older adults will help us improve the quality of life for those who rate their own situation as bad. Quality of life has a direct impact on health, especially in older adults, and anything that can improve an older adult's quality of life can also help improve their overall health. The information gathered in this study will help us do that.

Why have I been asked to take part in this study?
You have been asked to be in this study because 1) you are an individual over the age of 65 living in the Tuscaloosa / Birmingham area, OR 2) you are an individual over the age of 65 affiliated with the Retirement Systems of Alabama. In both cases the fact that you are an older adult makes your opinion valuable to our study.

How many people besides me will be in this study?
There are two studies involved in this project. In one study we will do approximately 25 face-to-face interviews, and in the other we will be collecting approximately 150 online surveys. You will be asked to participate in ONLY ONE of these two studies.

What will I be asked to do in this study?
If you decide to be in this study, you will be asked to participate in one interview that will last

one to two hours, OR to complete an online survey that will last about an hour. During the

interview you will be asked your opinion what makes a good quality of life. This interview will

be audio taped for the research team's use only. During the online survey you will be asked

about your current quality of life. The data from this survey will be for the research team's use

only.

How much time will I spend being in this study?
Being in the interview will take one to two hours. The online survey will take about an hour.

Will I be paid for being in this study?
You will not be paid for being in this study. It is on a volunteer basis.

Will being in this study cost me anything?
It won't cost you anything except for your time in completing the interview or survey.

Can the researcher take me out of this study?
The researcher may take you out of this study (that is, end the interview) if he feels that the interview appears to be severely upsetting to you. This is unlikely. You may also remove yourself at any time from the interview or survey if you find the content severely upsetting. Again, this is unlikely. If, however, you do feel upset at any time, please let the researcher know and we will end the study. Counseling and support of any potential upset will be provided by the research team through Dr. A. Lynn Snow at the University of Alabama.

What are the benefits (good things) that may happen to me if I am in this study?

Benefits can't be promised in research. But, it is possible that your participation will help us better understand what makes a good quality of life for older adults, and how to help those with a poor quality of life get better. You may also learn about what makes you feel good about your life and yourself.

What are the benefits to scientists or society?

This study will help scientists better understand the process of deciding about your own quality of life, especially in older adults. Society will benefit from this study because quality of life has a big impact on health in older adults, and if it can be improved, we might be able to improve health as well.

What are the risks (dangers or harm) to me if I am in this study?

The main risks are:

1. That you may feel that you have to/need to participate in this study because you have been asked by someone at the University of Alabama.
2. That you may talk about things the interview / survey that you would find embarrassing if they were made public to others.

This is what we're doing to minimize these risks:
1. No one will be told whether you decided to participate or not after you are asked. So your decision to not participate will not affect you negatively, because no one will know whether you participated or not.
2. You will be interviewed in a private place (unless you want to be interviewed in a public place). In the online survey, the data will be gathered in a secure online environment and transferred directly to a password-protected file at the University of Alabama.
3. All recordings and notes from the interview will be stored in a locked file cabinet at the Center for Mental Health and Aging at the University of Alabama. Only co-investigators on this study will have access to these notes. Recordings will be destroyed at the end of the study. In the case of the online survey, all data will be password protected and WILL NOT contain any individual information about the respondent other than a randomly assigned participant number and the survey responses.
4. All reports based on this and the other interviews will be written in a way to protect the identities of all who participated. Names and details about specific situations will be changed so that no one will be able to identify information you shared as coming from you. In the case of the online surveys, your name will be replaced with a randomly assigned participant number so that no one will be able to associate your name or personal information with your answers.

How will my confidentiality (privacy) be protected? What will happen to the

information the study keeps on me?

In addition to the strategies described above, your confidentiality will be protected by:
1. Name codes will be used instead of names in all final field notes about the interviews, and a randomly assigned participant number will be used in place of names for the surveys.
2. The original recordings and notes from the interviews that have names in them will be destroyed within three years. In the meantime, they will be stored under lock and key as described above. De-identified (only participant number, no names or personal information included) data from the survey will be kept

indefinitely; however, any data containing personal information will be destroyed after a period of three years. As above, data will be stored in a password-protected file until that time.

There is one limit to confidentiality. You should know that if we have reason to suspect abuse of any kind, I am required by law to report this to the proper authorities.

What are the alternatives to being in this study? Do I have other choices?
The alternative/other choice is not to participate. Your decision to not participate will not be recorded.

What are my rights as a participant?
Taking part in this study is voluntary—it is your free choice. You may choose not to take part at all. If you start the study, you can stop at any time. Leaving the study will not result in any penalty or loss of any benefits you would otherwise receive. Your decision to stop the interview after we start will not have any negative effect on how you are treated here at Fair Haven.

The University of Alabama Institutional Review Board (IRB) is the committee that protects the rights of people in research studies. The IRB may review study records from time to time to be sure that people in research studies are being treated fairly and that the study is being carried out as planned.

Who do I call if I have questions or problems?
If you have questions about the study right now, please ask them. If you have questions about the study later on, please call one of the investigators (Joseph F. Chandler) at (205-348-7518 OR 205-348-5038) OR (Dr. A. Lynn Snow) at (205-348-3655). If you have any questions about your rights as a research participant you may contact Ms. Tanta Myles, The University of Alabama Research Compliance Officer, at (205)-348-5152.

I have read this consent form. The study has been explained to me. I understand what I will be asked to do. I freely agree to take part in it. I will receive a copy of this consent form to keep.

_____ _____
Signature of Research Participant   Date

_____ _____
Investigator   Date

DEBRIEFING FORM:

Primary Investigator: Joseph F. Chandler, M.A. (chand037@ua.edu)

Advisor: A. Lynn Snow, PhD (lsnow@bama.ua.edu)

Quality of life (QOL) measurement has become an area of heavy research with older adults in the last 20 years. One of the main reasons for all this research is that older adults seem to be putting a lot of importance on quality of life, not just length of life. Traditionally, scientists have measured QOL by looking at environmental factors, from social support structures (i.e., family and community support), to living arrangements. We think that the definition of QOL is actually more complicated than than that, and has a lot to do with how older adults compare themselves with other older adults. We also think that it has something to do with how older adults see themselves compared to how they were in the past, or how they think they'll be in the future. The information you gave us today will allow us to look at these comparisons, and to define what older adults think makes for a good QOL with more detail. This information may help us improve the quality of life for older adults who initially report a low QOL.

THANK YOU FOR YOUR PARTICIPATION!
IF YOU HAVE ANY QUESTIONS ABOUT THE RESEARCH PLEASE CONTACT THE INVESTIGATOR LISTED ABOVE.

APPENDIX C: Code List for Study 1 Results

Category	Codes
Friends / Social Support	As Identity Barrier from Loneliness Loss of Engagement with Others
Spouse	Loss of Supported by Care as Meaningful Work Companionship Happy Marriage
Money	As Good, Security, Comfort Downplay, Not Important Cost as Barrier to QOL
Religion	As Meaningful Work As Social Support Church Home Let Go and Let God Provide Meaning
Cognitive Impairment	Stereotype of Loss Associated with Frustration Associated with Problem Communicating As Loss of Control
Death	Loss of Spouse Loss of Friends Reality of Death Gone but Still There Letting Go of Loss
Negative, But…	Specific But Non-specific But Live in the Now Use of Comparison as

Comparison	DSC, USC, PTC, FTC Prompted Unprompted PTC Upset FTC Pessimistic Refusal of Comparison Past = Regret
Comparison (cont.)	Multiple Comparisons / Process of Comparison Changing your Expectations FTC Upset Specific Non-specific Acceptance
Self-perception / Reference	Positive Self-esteem Being in Control Use of Present Tense Use of Past Tense Finality Lonely Not Having Control Self-Efficacy Needed Help "I can do what I want" "One day at a time"
Emotions	Happy Good Life Depression / Blue Mood Lonely Feeling Misunderstood Feeling Lost Fear Worry Humor Tears Complain Regret / Mess Up Appreciation
Utility / Effort	Need to be Needed

	Eager to Help Work Identity / Capability Pride in Work "Best I Could" Dedication to Job Need to Contribute Enjoy Retirement Staying Busy Fill Your Time
Decision (Explicit)	To be Happy To Ignore Blue Mood To Ignore Bad Thoughts Control / Lack of Control The Middle Way Go with Your Gut Personal Priority "So, then, then, I, uh, then I decide, see, not to look at it that way anymore" Multiple Comparisons / Process Give Up
Basic Needs	Environment Food Versus Meaningful Life Medical Care Freedom to Leave Home
Being "Old"	Old = Wearing Out
Health / Physical Self	Poor Health Good Health Functional Ability Sex Disability Needed Help Dependence Resilience Good Mental Ability Good Mental Health Exercise

APPENDIX D: Online Format for Study 2b WHOQOL-BREF Administration

Link to Survey Monkey:

http://www.surveymonkey.com/s.aspx?sm=oQ3kW3QZaH6xeLBl0yp3TQ_3d_3d