

Quality of Life Among Older Adults - A Proposed Conceptual Model

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### Abstract

The purpose of this study was to develop and test a model of Quality of Life (QOL) of older adults in which overall QOL was the dependent variable and financial resources, perceived health and Activities of Daily Living (ADL) performance, emotional support, meaning and purpose in life, and the older adult's surrounding physical and home environment were the independent variables. It was hypothesized that each of these independent variables would have a significant and positive effect upon overall QOL, and meaning and purpose in life were expected to mediate the effects of perceived health upon overall QOL. To address the hypotheses being posed in this study, a secondary analysis was undertaken of two cross-sectional data sets, namely the Canadian WHOQOL-OLD Group 2004 Field trial (data set 1; n = 202) and the WHOQOL-OLD Group 2002 Pilot study (data set 2; n = 420).

At the bivariate level, in data set 1, all six independent variables were found to be significantly and positively associated with overall QOL. In the multiple regression analysis, the pattern of findings for all eight predictors indicated the hypothesized model was not likely to fit data set 1. In particular, the non-significant direct effects of ADL performance, emotional support, and the physical and home environment indicated either that they are not related to QOL or their relationship is mediated by another variable. The non-significant direct effect of purpose in life did not provide preliminary evidence of its mediating role in relation to the remaining predictors.

The fit and modification indices arising from the path analysis of data set 1 gave rise to an alternate model wherein financial resources, perceived health, and meaning in life

had a significant and positive direct effect upon overall QOL. Purpose in life partially mediated the effect of perceived health, and meaning and purpose in life also played significant mediating roles in relation to emotional support and the surrounding physical environment, and a structural path was added from purpose to meaning.

In a second path analysis, the post-hoc model arising from data set 1 was evaluated using an independent sample of older adults (data set 2) but yielded poor Adjusted Goodness of Fit and Root Mean Square Error of Approximation indices.

Points of disparity arising from the path analysis of data set 2 were the added structural paths from ADL performance, emotional support, purpose in life, and the surrounding physical and home environment to overall QOL itself. Additionally, meaning in life did not mediate the effect of the surrounding physical environment. The empirical support received in this validation phase of analysis for all six hypotheses highlighted the sample-dependent nature of post-hoc models and drew attention to the limitations of this study, including that of sample size discrepancies between data sets 1 and 2 and convenience sampling bias for data set 2.

The nursing practice implications of this study closely align with the Canadian Gerontological Nurses Association (1996) practice mandate. Specifically, the findings of this study imply that collaborative clinical practice, in which the sharing of expertise contributes to comprehensive and informed assessment, planning and intervention aimed at enhancing and promoting QOL among chronically ill older adults, would be valuable.

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## Chapter 1 INTRODUCTION

According to *Merriam-Webster* (2001), quality pertains to the properties, characteristics or attributes of some thing of interest. Qualities, then, are inherent features. By drawing attention to qualities, it becomes possible to readily put a name to, single out or recognize that which we inquire about. *Merriam-Webster's* definition is also pluralistic; that is, there may be more than one inherent feature to consider. To this, King (1994), Lawton (1991), and Sarvimaki and Stenbock-Hult (2000) add quality as goodness and a quality life as a good life. Quality of Life (QOL), then, refers to a value judgment or an appraisal of one's life circumstances and to the feature(s) considered inherent to that appraisal.

This study focuses on the QOL of older adults and the factors that influence it. Accordingly, inquiry of this nature rests with identifying the qualities or inherent features of life that pertain to this group and the factors that influence older adults' appraisals of the condition or circumstances of their lives. Research in this area is salient for several reasons. First and foremost, the general population of Canada is aging. At present, adults who are 65 and older represent 15.8% of the general population; among these, 5.9% are 75 and older. By 2011, we can expect the senior population to increase by approximately 41%; among those 80 and older, a two-fold increase is likely (Statistics Canada, 2003a). Chronic conditions are also prevalent among aging Canadians (Statistics Canada, 2002a). These include chronic pain (6%), arthritis (43%), diabetes (12.7%) and high blood pressure (28.6%). Cancer (10.9%) and heart disease (42.6%) are also common (Statistics Canada, 2002b). Although these figures do not pertain to mental health, 3.2% of Canada's senior population is reported to be at risk for depression

(2002b). Based upon the findings the 1995 National Population Health Survey (NPHS), 5.7% of older adults have experienced a major depressive episode (Statistics Canada, 1995).

Chronic illness can pose a threat to the goodness or quality of the older adult's life. Older adults with chronic lung disease report severe declines in QOL, and among those suffering from heart disease, arthritis and diabetes, many report a moderate decline (Statistics Canada, 2003c). Among chronically ill males and females, ages 65 and over, 51.7% and 70% respectively experience high levels of psychological distress or feelings of hopelessness and worthlessness in life (Statistics Canada, 2003b). Significant losses of independence have also been reported among those with chronic lung disease (25%), asthma (15%), heart disease (24.4%), and arthritis (16.7%). The disability-free life expectancy in Canada and in British Columbia is approximately 68 years, while life expectancy hovers around 78 years (Statistics Canada, 2002b). Consequently, older adults are likely to experience at least one decade of disability, and chronic illnesses are likely to play a major contributory role. Though these findings tend to situate QOL within the context of illness, King (1994), Lawton (1991), and Sarvimaki and Stenbock-Hult (2000) attest to QOL being a far more broad and complex phenomenon. A more comprehensive understanding of QOL, from these authors' perspectives, rests with extending research inquiry into the realm of social relationships, the surrounding environment, and cognitive beliefs.

The Canadian Association of Gerontological Nurses or CGNA (1996) adopts a similar perspective on QOL and identifies the facilitation and enhancement of optimal QOL as an integral part of the practice mandate of nurses providing care to older adults.

The CGNA describes the nurse's role in QOL care as that of inter-disciplinary collaboration, and informed assessment, planning and intervention. Incorporating the client's unique life experiences, goals, beliefs and values in the planning of care also speaks to the role of the nurse as advocate. In keeping with the broad nature of QOL, optimizing it requires a holistic approach to physical health, psychological comfort, adaptation to the surrounding environment, relationship care, and cultural and spiritual belief systems (CGNA). As a nurse and a researcher inquiring about the QOL of aging adults, I have a vested interest in forging links between research and direct practice.

The overall purpose of this study is to develop and test a model of QOL pertaining to older adults. In order to keep the focus of inquiry of this study broad, I provide a comprehensive review of the non-disease-specific conceptual literature on QOL pertaining to older adults from a variety of fields, including Gerontology, Sociology, Psychology, Rehabilitative Science, Nursing, and Medicine. The multidisciplinary empirical literature is also examined to identify the nature and significance of factors influencing QOL. I then propose a model of QOL pertaining to older adults.

I test the proposed model through a secondary analysis of the findings from two recent QOL studies conducted by the WHOQOL-OLD Group. A number of different disciplines were involved and 22 countries were represented on this research team. Given that older adults report a wide variety of chronic illnesses, the model in this study is intended to be non-disease-specific. Finally, the findings arising from testing the proposed model are used to offer direction to nurses providing QOL care to older adults.

The following chapter includes a review and critique of the conceptual literature and a summary of the empirical literature. The model tested in this study is then described.

## Chapter 2

## BACKGROUND, EMPIRICAL FINDINGS, &amp; PROPOSED MODEL

The definitions of quality put forth in Chapter 1 provide direction that claims about quality in relation to day-to-day living can take. For example, scholars often specify a number of features that are considered in QOL appraisals. In the literature on QOL models, these features are conveyed by way of conceptual definitions and the models within which they are named and numbered. Relationships between features are often articulated. In addition, scholars may identify factors outside of those constituting QOL itself which they claim have influence upon the individual's appraisal of the circumstances of his or her life. Scholarly claims may, in essence, pertain to the features that are the essential constituents or the conceptual features of QOL itself, most commonly referred to as domains, dimensions, sectors or facets, and to its non-constituents or the causal features external to it.

The purpose of Chapter 2 is to introduce how the concept of QOL being conceptualized, defined, and modeled in the literature from a wide variety of perspectives. Scholarly claims about what constitutes QOL itself and what influences it are discussed. The issues pertaining to QOL research are then highlighted. In response, I offer a model that is further bolstered by findings from the empirical literature on QOL of older adults.

## Background

The QOL models from the literature being reviewed in this study span from 1990 to 2004. Several flagship or classic perspectives from mid-1960's to the late 1980's that have influenced thinking among more recent scholars are also addressed. Two types of models are included: generic or universal models pertaining to all persons and those

pertaining specifically to older adults. Common conceptual threads are examined to provide a broader base of evidence for the model proposed in this study. Though the literature review is not intended to be exhaustive, it captures an appreciable cross-section of claims and the way in which our understanding of QOL continues to evolve. Given that the model proposed in this study is non-disease-specific, the conceptual works drawn upon do not focus on any particular disease. In addition, works pertaining to conceptual issues raised by existing claims about QOL are included in order to compare, contrast and critique existing models and what needs to be considered when scholars propose to define and model QOL.

#### *Historical Perspectives on Quality of Life*

The classic works presented span from 1965 to 1988 and were selected because they are those most frequently cited in subsequent scholarly works. Accordingly, I turn my attention to the 1960's.

Cantril (1965) conceived of QOL as a global appraisal based upon the individual's own standards, perceptions, goals and values. This author depicts a ladder with a top rung representing personal hopes and wishes that, when realized, constitute the best possible life for that individual. In contrast, the bottom rung reflects the worst possible life one could imagine. This 'ladder of life' is further described as a self-defined continuum that gives an overall picture of the individual's real life world, rendering the perspective more authentic. Cantril believed that prescriptive dimensions of life precluded such authenticity and global appraisals allowed individuals to take into account their cumulative life experiences and circumstances, and as a result, individuals could then decide for themselves what is unique about their lives as a whole.

In 1971, Abrams adopted a mixed approach to QOL in which he speaks of satisfaction with life as a whole and within five domains or features of life considered important to the individual. Here, Abrams alludes to having a partner with whom one derives a sense of love and affection, tolerance and mutual understanding, and to this, he adds a happy family life, good health, an adequate standard of living or material and monetary possessions and wants, and quality housing. A hierarchical view of QOL is offered in which life domains span from the individual to his or her social relations and the surrounding environment. In addition to presenting one of the first multidimensional perspectives, life domains were also conceived of as subjective social indicators, lending a causal flavor to Abrams work throughout which domains are described as 'affecting' and 'determining' overall life satisfaction.

The most commonly cited seminal work on QOL was by Campbell, Converse, and Rogers (1976). These authors name seventeen domains of life, casting a broader conceptual net than did Abrams (1971). These life domains pertain to one's non-work or leisure activities, standard of living, savings, work, friendships, family life, marriage, housing, neighborhood, community, country, national government, amount and usefulness of education, community organizations, religious faith, and health. Campbell et al. conceive of global appraisals as composites of the way people feel about specific features of their lives such as their financial situation, housing, and social ties. In response, these authors broadly define QOL as perceived satisfaction in regions or domains of life experience and an overall sense of well-being, and like Abrams, conceptualize life domains as social indicators of overall well-being.

In 1976, Andrews and Withey offer another perspective in which QOL is described and defined as a two-dimensional perception of global well-being that, on a general level, pertains to overall happiness and satisfaction with life. On a specific level, domains are likened to *life concerns* or the places, things, activities, people, and roles about which people have feelings. To this, the notion of criteria or the individual's own values, standards, aspirations and goals, as the determinants of affective evaluations of life concerns are added. Andrews and Withey list twelve domains of life, consisting of feelings about local and national government activities, one's economic situation such as having basic necessities, income adequacy and material possessions, and the safety and quality of one's surrounding community, neighborhood and home. Others include social support or feelings about social ties with friends and associates, family and partner, and interpersonal relations or how one relates to and is treated by other people. The final three are overall health, coping and personal development, and leisure activities.

Flanagan (1978) draws attention to fifteen categories, as components of life, residing within five domains: physical and material well-being, relations with other people, social, community and civic activity, personal development and fulfillment, and finally, recreation. Under the auspices of well-being, Flanagan draws attention to material possessions and financial security, and health and personal safety. Social relations encompassed having a partner, children, relatives, and friends to do things with and who will make the individual feel accepted, loved, guided, and understood. Activities have to do with helping and encouraging other people, and involvement with local and national government bodies, while the third domain encompasses intellectual development, having a purpose and guiding principles in one's life such as spiritual and religious

beliefs, and one's vocation and creative activities such as hobbies. Recreation pertains to both passive and active involvement in leisure.

In 1980, George and Bearon offered one of the first perspectives on QOL in relation to aging adults, in which they formally define QOL as "an objective and subjective phenomenon, including both the conditions and the experience of life" (p. 14). Here, the subjective dimensions of QOL are thought to consist of life satisfaction, overall health, and self-esteem and the objective, conditions of overall health, functional status or energy, mobility and ability to perform daily activities, and socioeconomic status or occupation, and financial and material assets. Unlike the previous three perspectives, QOL is defined solely by way of its dimensions. Krupinski (1980) lays claim to four broad conceptual dimensions consisting of life in general, as personal relationships, recreation, material security or having enough money and accommodation to meet basic needs, freedom from worry, useful work, family life, and political and religious beliefs. The next two, work and school have to do with the conditions of the physical setting and quality of relations with colleagues or peers and superiors. The housing domain pertains to privacy, beauty, and having a place to call one's own.

Like Campbell et al. (1976), Evans, Burns, Robinson, and Garrett (1980) claim that QOL falls solely under the auspices of well-being. Unlike the former group, however, Evans et al. name only five important life domains, in which they speak of its occupational and material aspects as occupational type and ties, and the quality of housing and the surrounding neighborhood. Social well-being reflects creative activity, helping others, quality of friendships and political ties, while the quality of relationships with kin captures the family domain. Personal and physical well-being respectively

encompasses opportunities for personal growth, sports and health protective behaviors.

Evans et al. present one of the first ecological models of QOL within which domains are conceptualized as the individual's interactions within the surrounding natural, man-made, and behavioral environment.

Following the footsteps of George and Bearon (1980), Burckhardt (1985) developed a model of QOL pertaining to aging adults afflicted with arthritis, rendering her work as one of the earliest disease-specific models of QOL. Burckhardt adopts stress and coping theory as an interpretive framework for her path model. Accordingly, age, gender, disease severity, socioeconomic status, and social network are conceptualized as antecedent influences upon four cognitive and social mediating variables consisting of perceived support, negative attitude, self-esteem, and perceived control. Within the latter disease-specific theoretical context, QOL is defined as a global appraisal of profound satisfaction from the activities of daily life (p. 11).

Collectively, the latter classic works have influenced the ways in which QOL came to be conceptualized over the following two decades that, in part, may be attributed to the sampling of a large numbers of respondents. For example, Abrams interviewed 593 adults in Britain. Campbell et al. based their domains of life on the perspectives of 2164 Americans. Classic scholars also ascribe to QOL as being either a global or a multidimensional appraisal, akin to life satisfaction or well-being. Descriptions or definitions of QOL as a broad and complex appraisal shaped by individual values, beliefs, goals, and standards are common. In addition, the perspectives offered by George and Bearon (1978) and Burckhardt (1985) mark the beginnings of frameworks of the QOL of older adults.

It is also interesting to note what these classic scholars found to have a significant influence upon global or overall well-being, QOL, and the best possible life. For example, among a sample of 3,802 American adults, Andrews and Withey (1976) found age, sex, annual income, and education to be weak and marginally significant predictors of global well-being. In addition, in an age-specific analysis, among respondents ages 60 to 79, material and financial resources, health, social relationships and support, being actively engaged in activities, and having purpose and faith collectively accounted for slightly more than half of the variance in the latter outcome. In Campbell et al.'s (1976) study of QOL among 2160 American adults, non-work related activities, marriage, family life and friendships, standard of living and savings, and quality of neighborhood, home and county uniquely explained between 11 to 30% of the variance in overall well-being. In addition, associations similar to those noted by Andrews and Withey were found for gender, income, and education. Among 600 adults aged 70 and above from diverse racial and socioeconomic backgrounds, Flanagan (1978) noted that social relations, physical and material well-being, and having purpose and guiding principles in one's life were most important to overall QOL. In twelve countries worldwide, Cantril (1965) also observed that people consistently and significantly attributed welfare and opportunity for a decent standard of living, having land, a home and a good job, good health, and a happy family life to the *best possible* life. In essence, these findings convey that health, social support, the physical environment, spiritual and religious beliefs, and material and financial resources play a significant role in global appraisals, suggesting a causal model in which a broad host of factors have influence upon QOL.

Krupinski (1980) studied predictors of QOL among 235,000 people residing within five municipal regions in Melbourne. Strong and significant inverse links between perceptions of fulfillment in all aspects of life and ill health were found, raising the question of whether health is a conceptual or a causal feature. Burckhardt's (1985) work is also pioneering in the sense that she brings cognitive beliefs as mediators, as well as a theoretical lens, to the realm of conceptual modeling. In an empirical test of her path model with 94 older adults, Burckhardt was able to explain nearly half of the variance in overall QOL and concluded that gender, education, occupation, and income played no significant role. As will soon be revealed from a review of the empirical findings on aging adults from 1990 onwards, Burckhardt's study set an empirical precedent in causal modeling.

To this end, I shall now look toward how QOL has been conceptualized from 1990 onward in a wide variety of disciplines. A comprehensive collage of how QOL is defined and described, what is thought to influence it, and the theoretical lenses that are cast upon it are presented.

#### *Conceptualizations of Quality of Life – Looking Onwards*

The more recent QOL models arising from conceptual literature search in this study span from 1990 to 2004 and encompass generic models that pertain to all individuals and those for older adults. Appendix A provides a visual chronological summary of the claims being made about QOL. Here, attention is drawn to how each developer defines or describes QOL, what they conceive its constituent features to be and the links between them, and the theoretical frameworks within which QOL is situated. With respect to what developers claim has influence upon QOL, and any relations or order between such

causal features are presented. The compendium of models in Appendix A also serves as a reference tool for comparing and contrasting claims being made about QOL and for identifying points of agreement that will provide direction for the causal model to be proposed in this study.

Though the notion of a conceptual framework for QOL is widely accepted within a number of disciplines, a different perspective has arisen within Nursing. In particular, Benner (1985) and Parse (1994) offer contrasting arguments against conceptually reigning in QOL by way of preconceived definitions, life features, and factors thought to influence QOL. Both Parse and Benner contend that such 'ready-to-wear' frameworks are simply methods of imposing artificial boundaries or limitations upon a concept that is, by nature, highly subjective and contextual.

In stark contrast to the claims offered by Burckhardt (1985), Benner (1985) argues that QOL is akin to a human or lived experience shaped by self-perceptions, beliefs, skills, practices and expectations, and describes human beings as constituting and being constituted by inherited culture and its practices, language, and history. In essence, Benner seeks self-interpretations of the meaning that the everyday practices and experiences embedded within these constituents hold. An individual's culture, language and history provide pre-understanding or a background story through which he or she interprets the meaning of situations they are faced with in everyday life. Benner further contends that being human also implies that the quality of being is at issue, and that in inquiring about QOL, we must seek an understanding of the person within the context of their everyday lives and the meaning attached to their everyday life situations.

Though Benner (1985) conceives of QOL as explainable, she explicitly takes issue with the assumption that a person's life can be partitioned or separated into explanatory blocks that are labeled using the language of the researcher, not the researched. Rather, her method of seeking situational understanding resides with observation and story telling so as to grasp what counts or what is relevant to that individual. Otherwise, as Benner suggests, the inquirer is left with a host of models that simply convey what researcher A and researcher B believe to be relevant to the quality of being.

Parse (1994) links quality or qualities with "whatness" (p. 17) that she, in turn, refers to as the essence of a life or, what makes a life unique and different. Like Benner (1985), Parse locates QOL with the individual's lived experiences and in doing so, claims that QOL is "what the person there living the life says it is" (p. 17). Here, Parse makes two assumptions. The first speaks to the idea that humans are indivisible beings. In this sense, QOL is multidimensional only in terms of its meaning. People are also conceived of as having a history of life experience rich with persons, ideas, objects, and situations that cannot simply be separated or isolated from one another. Quality of life, in essence, is a global perception of meaning of the totality of life experiences. In addition, Parse argues that what QOL means continually changes because it constitutes what the person chooses to pay attention to at the moment of making an appraisal. In this respect, QOL pertains to moment-to-moment constructed meanings that defer the logic of static domains and definitions.

Though Benner (1985) and Parse (1994) offer contrasting arguments that defy the logic of a preconceived conceptual or causal framework, QOL models have proliferated. While these ongoing efforts to increase our understanding of QOL and what influences it

are commendable, they have not escaped the critical eye of the broader scholarly community. Given the primary aim of this study, it is both necessary and fitting to provide a synopsis of the critical responses to the many conceptual claims being put forth and to explore how these criticisms are manifested. Doing so will give rise to a comparison of these claims and lead to a greater awareness of the conceptual lessons to attend to in this study.

### *Model Issues*

Critiques about conceptual work on QOL arose with vigor in the early 1990's and although they arise from specific disciplines, they pertain to the claims being made across all disciplines. One of the most widely agreed upon issues about conceptualizations of QOL pertains to the lack of consensus around how it is defined. This issue is so pervasive that the majority of critiques spanning from 1992 to 2003 launch discussions on conceptual issues around definitions. Stewart (1992) initiates her discussion by pointing out that while there may be agreement across disciplines that QOL is multidimensional and definitions may overlap in terms of the nature of its features, there is no universal definition of QOL. King (1994) concludes that, within the literature, scholars either assume that there is an implicit agreement around what QOL is, or its complexity defies definition. However, King found consensus around the broad nature of conceptual features. Mast (1995) prefaces his discussion by describing QOL as an elusive and complex concept. This description speaks to his findings that QOL most often escapes definition, or definitions vary so much that it becomes difficult to discern whether scholars are alluding to QOL, or something else. Mast attributes his findings to the conglomeration of efforts from multiple disciplines and simply concludes that what

QOL means differs among disciplines. Quality of life, from Mast's perspective, is "a primitive term" (p. 958).

Farquhar (1995) echoes the latter contentions in his description of QOL as "an evogue term that has become polarized and clichéd" (p. 502). Here, he alludes to an avoidance of definition from assumptions of unspoken agreement or definitions simply reifying model domains. Felce and Perry (1995) found as many definitions as persons studying QOL. Brown and Gordon (1999), in a similar vein, concur that QOL seems to have as many definitions as there are publications on it. Haas (1999) describes QOL as a multidimensional and complex concept that defies an agreed upon definition. In her own review of the literature, she found either no definition or an operational one in which measures of QOL alone specify types and numbers of conceptual features. King et al. (1997) come to terms with this lack of consensus by referring to QOL as an *evolving* concept and in response, call for an interdisciplinary analyses.

At present, the issue of how to most aptly define QOL remains contentious (Bullinger, 2002; Higgs et al., 2003). Bullinger describes definitional pluralism as the most pivotal and seminal conceptual issue to date. Among the generic models, QOL has been defined as a dimensional or a global perception of satisfaction and happiness (Nordenfelt, 1992; Ferrans, 1996; Oleson, 1990), an alleviation of suffering and a provision of support (Ferrell et al., 1991), an overall sense of quality and well-being (Cowan et al., 1992), a multidimensional evaluation of life circumstances (Haas, 1999), and finally, ideal versus actual functioning (Cella, 1994; Leventhal & Coleman, 1997). In contrast, Cummins (1996), Ormel et al. (1997), and Zissi et al. (1998) do not define QOL.

Similar problems arise among works of scholars on aging. In particular, QOL is not defined in four authors' works (Farquhar, 1995; Fisher, 1995; Hellstrom & Hallberg, 2000; Hilleras et al., 2001) and proponents of definitions offer discordant views of what QOL is. Lawton (1991) looks to evaluation with personal and external criteria of the person in relation to their environment over time, while Zhan (1992) speaks of satisfaction with life experience. Felce and Perry (1995) refer to physical, material, social, and emotional well-being weighted by a personal set of values. Raphael et al. (1997) speak of the degree of enjoyment in life's possibilities and appraisals of universal needs. For Stuijbergen et al. (2001), QOL is an overall sense of health, well-being and life satisfaction. The WHOQOL-OLD Group (2002) draws attention to the individual's perception of their position in life in the context of culture and value systems. Overall, other than QOL being an individual perception, there is little consensus around how QOL is defined, and this is clearly reflected in Bowling et al.'s (2003) claim that QOL is a multi-level and amorphous concept.

Another issue is that of attributing QOL to a number of surrogate terms or synonyms (Farquhar, 1995; Mast, 1995; Stewart, 1992). King et al. (1997) found QOL to be likened to well-being, health, and life satisfaction. Anderson and Burckhardt (1999) adamantly claim that no other concept generates as much confusion and controversy as does QOL. They make reference to life satisfaction, functional status, happiness, and health or symptoms of disease. Such plurality, according to Anderson and Burckhardt, leads to confusion around whether models pertain to QOL or, for example, happiness. Smith, Avis, and Assman (1999) found no support for any claim that QOL is a perception of health in their own meta-analysis of twelve non-disease-specific studies of aging adults.

Haas (1999) argues that QOL is neither functional status, health or life satisfaction.

Functional status, from Haas's perspective, pertains to physical health, yet QOL is not solely physical in nature. In addition, being satisfied with something does not imply what its salient qualities are. Well-being and health status, as proxy terms, continue to arise within the literature across a number of disciplines and simply add to the seemingly nebulous nature of a concept that is poorly understood (Bullinger, 2002).

Surrogate terms also surface in generic and aging models. The most common terms are satisfaction with life (Cowan et al., 1992; Fisher, 1995; Hilleras et al., 2001; Oleson, 1990; Stuijbergen et al., 2000; Tseng & Wang, 2001; Wilder, 1995; Zhan, 1992) and well-being (Bowling et al., 2003; Cowan et al., 1992; Cummins, 1996; Farquhar, 1995; Felce & Perry, 1995; Fisher; Haas, 1999; Lawton, 1991; Ormel et al., 2001; Sarvimaki & Stenbock-Hult, 2000; Stuijbergen et al., 2000; Zhan, 1992; Zissi et al., 1998). Others include happiness (Nordenfelt, 1992; Tseng & Wang, 2001), health (Stuijbergen et al., 2000; Wilder, 1995), functioning (Cella, 1994; Leventhal & Coleman, 1997), meaning or value (Hilleras et al.; Sarvimaki & Stenbock-Hult), and perceptions of meeting universal needs (Fisher; Higgs et al., 2003; Raphael et al., 1997a). These attributions appear to stem from the lack of definitional consensus, and what we are left with is a choice of many possibilities and a lack of certainty around what is actually being modeled. Some scholars do, however, provide a theoretical rationale for proxy terms (Fisher; Higgs et al.; Nordenfelt; Raphael et al.; Sarvimaki & Stenbock-Hult).

Another pervasive issue is a lack of differentiation between what QOL is and what influences it (Haas, 1999; Higgs et al., 2003; Schipper, Clinch & Olweny, 1996; Stewart, 1992). Among the generic models of QOL, four are causal (Cowan et al., 1992;

Leventhal & Coleman, 1997; Oleson, 1990; Zissi et al., 1998). In contrast, the vast majority of scholars on aging include causal features in their models (Bowling et al., 2003; Felce & Perry, 1995; Hellstrom & Hallberg, 2000; Hilleras et al., 2001; Kleinpell & Ferrans, 2002; Nesbitt & Heidrich, 2000; Sarvimaki & Stenbock-Hult, 2000; Stuijbergen et al., 2000; Tseng & Wang, 2001; Tang et al., 2004; Wilder, 1995; Zhan, 1992). While there has been a move towards differentiation within models, both generic and older-adult models depict features that are both conceptual and causal (Higgs et al., 2003; Schipper, Clinch & Olweny, 1996; Stewart, 1992). In doing so, however, models can become tautological or circular in their reasoning - the message being conveyed is that the constituents of QOL are no different from what influences it (Haas, 1999).

Haas (1999) contends that the most commonly confounded feature within models is that of health. I too found evidence of conflation around health and health-related factors within several works by scholars on aging (Hilleras et al., 2001; Kleinpell & Ferrans, 2002; Nesbitt & Heidrich, 2000; Stuijbergen et al. 2000; Tseng & Wang, 2001; Zhan, 1992). Within generic models, personal beliefs about illness and the self share a similar fate to that of health. For example, though Cella (1994) proposes that illness perceptions mediate QOL appraisals, he claims that physical and functional well-being are conceptual features. In a similar vein, Leventhal and Coleman (1997) describe the individual's cognitive appraisals of symptoms, affective reactions to illness threat, and the self as causal features while naming affect, symptoms and psychological functioning as life domains. In their model of QOL among aging adults, Bowling et al. (2003) also describe cognitive factors as causal mediators, yet psychological well-being is named as a constituent of QOL itself.

Other examples arising from the works of scholars on aging include Hilleras et al.'s (2001) reference to family contact as a conceptual feature and social relationships as having an influence on QOL appraisals. A similar pattern emerges for material well-being and material inheritance in Felce and Perry's (1995) model. For Kleinpell and Ferrans (2002), social support and finances both influence and constitute QOL. In addition, though Tang et al. (2004) focus on QOL as a global appraisal, its demarcation into four domains of well-being leads to overlap between conceptual and causal features; spirituality is but one example.

I also found evidence of conflation across models. For example, though Oleson (1990) and Zissi et al. (1998) conceive of functional status as antecedent to QOL, Leventhal and Coleman (1997) and Haas (1999) claim that it is an aspect of QOL itself. In addition, while Zhan and Sarvimaki and Stenbock-Hult (2000) see the external environment as a causal feature, Lawton (1991) and Raphael et al. (1997a) claim that the external environment is a conceptual feature. Similar patterns emerge around economic and material circumstances (Oleson, 1990; Cowan et al., 1992; Cummins, 1996; Ferrans, 1996; Leventhal & Coleman, 1997).

In essence, factors influencing QOL are often considered to be analogous with its conceptual features, and this begs the question: 'what led to what?' These patterns, within both types of models, create confusion rather than clarity. Through qualitative inquiry, Farquhar (1995) found much overlap between what encompasses and what influences QOL in his own research on aging adults. In response, Farquhar argues that overlap is a natural product of the broad and complex nature of QOL - separation is simply an academic prescription. At the same time, however, strong opposition to

overlap within models suggests that, at present, conflation remains a contentious issue to which there is little ameliorative response.

Another issue pertains to the lack of clarity or differences in relations between and numbers of conceptual and causal features in models, indicating there is little consensus on how to model QOL (Brown & Gordon, 1999). I also found evidence for this. For example, the relationships between the four life dimensions in the generic models by Ferrell et al. (1991) and Cella (1994), and Cowan et al.'s (1992) triad of well-being, and life quality and satisfaction are unclear. In contrast, Ferrans (1996) claims that her four domains of life are hierarchical, spanning from the personal to the interpersonal. Cummins' (1996) seven, Leventhal and Coleman's (1997) six, and Zissi et al.'s (1998) eight domains of life fall prey to the same fate; the latter group also includes global well-being as an outcome. Ormel et al. (1997) do not coherently link social with physical well-being, while Haas (1999) follows suit with subjective well-being and functional status, and their relative primacy to overall QOL. Oleson (1990) does not establish any order of influence among her six causal features and conceives of subjectively perceived QOL as a global outcome.

Among those generic models hypothesizing causal order, the complexity of each model differs by the numbers of features and stages of influence. Cowan et al. (1992) model three antecedents that influence three types of global appraisals through two stages of mediation involving three types of mediators. Ormel et al. (2001) present a far more complex model in which illness factors alone mediate the appraisal and utility of an unspecified number of resources that, in turn, affect a three-dimensional hierarchy well-being. Further, Zissi et al. (1998) hypothesize four antecedent causes and two mediators

subsequently filtered by personal aspirations, expectations, values, standards, and beliefs. In the latter model, both a global and an eight-dimensional outcome arise. Leventhal and Coleman (1997) present a model in which there is a feedback loop between two antecedents, one stage of mediation and a six-dimensional outcome.

Similar patterns among both conceptual and causal features of life can be found among the models developed by scholars on aging. Lawton (1991) depicts his four conceptual features as intersecting circles. However, Zhan (1992) does not illustrate how her five causal and four conceptual features, as separate entities, relate. Wilder (1995), in her model of health and life satisfaction, differentiates between three antecedents and hardiness as a mediator. In contrast, Felce and Perry (1995) depict to and fro relations between two vertices (objective and subjective) containing five conceptual features. Five causal features external to these vertices are illustrated as having a direct impact upon them. Raphael et al. (1997a) and Higgs et al. (2003) describe hierarchical pyramid-like structures of between two to three basic and higher order needs. At their peak, successful aging or pleasure and self-realization resides. The WHOQOL-OLD Group describes twelve life facets as having reciprocal relationships with one another (2002; in press-B). In contrast, Farquhar (1995) and Hilleras et al. (2001) do not specify how their conceptual and causal features relate, and the number of each varies. Bowling et al. (2003) attend to causal order alone and here, they describe a one-way model in which cognition is a mediator between socio-personal features and QOL itself.

Further inconsistencies were found among other scholarly works focusing on older adults. For example, Sarvimaki and Stenbock-Hult (2000) developed a cascading linear model that begins with the external environment having a direct impact upon the internal

causal features of health and functioning. In turn, these causal features directly impact upon a hierarchical triad of conceptual life features, and there is reciprocity between them. Though Nesbitt and Heidrich's (2000) model bears some similarity with its causal ordering, the links between the four domains of life falling under the auspices of well-being are unclear. Other models include that of Hellstrom and Hallberg's (2000) ten unordered and unrelated causal features and two global outcomes, and Stuijbergen et al.'s (2001) three stage causal model containing physical, social and environmental antecedents, two stages of mediation pertaining to personal beliefs and health behaviors, and three global outcomes.

In sum, then, the models found in Appendix A reflect a number of salient issues. Overall, there appears to be a lack of consensus in how QOL is defined or described, and a number of surrogate terms are used in its place within models, leading to confusion around whether, for example, happiness or QOL is being modeled. Attempts have been made to address the issue of a lack of differentiation between what constitutes QOL and what influences it by way of causal modeling; at the same time, however, tautological claims have arisen in which there is overlap between both. There is also diversity in terms of the structure and complexity of models, suggesting that there is no 'blueprint' for model development. Though these issues paint a morose picture for model developers, they exemplify the focal points of concern that I attend to in this study. Accordingly, I discuss what I have learned about QOL and offer a scholarly response with respect to whether it would be conceptualized globally, dimensionally, or located with a theoretical frame of reference in this study, and thereafter, reflect further upon its causal features.

*Quality of Life as an Outcome*

The conceptual literature offers many competing claims about what constitutes QOL. In generic models, dimensions include community life, productivity, varying aspects of well-being, economics, family relations, intimacy, safety, physical health and functioning, affect, social relationships, spiritual/psychological aspects of life, and leisure activity. Dimensions alluded to by scholars on aging are equally as perplexing and include being, belonging and becoming, behavioral competence and perceived qualities, self-concept, socioeconomic factors, good material circumstances, social contacts, relationships and activities, and basic and higher order universal needs. Subjective perceptions of overall health, life satisfaction, well-being, life quality, and happiness are no exception.

Overall, a dimensional approach to QOL emphatically illustrates a lack of consensus on what the inherent features of QOL itself are. The issues being raised among scholars critical of QOL modeling about how domains relate amongst themselves and to QOL itself is not clearly addressed in conceptual claims about QOL, begging the question of whether some dimensions have greater primacy over others and if so, which? In a similar vein, could certain dimensions act as mediators or antecedents to others? Dimensions are either depicted as existing on the same conceptual plane or as hierarchically ordered life features ranging from the individual, to the social and environmental. The alternative rests with no clarification. In models belonging to scholars on aging, the same problematic patterns arise.

There is also great variation in the way scholars further identify the dimensions or domains in both types of models. For example, with respect to the social dimension of QOL, social well-being may pertain to social roles, relationships and intimacy, perceived

support, leisure, family functioning, intimacy and sexuality, or emotional support, social status, behavioral confirmation, and love, affection and friendship. Social relationships have also been located within a community, perceived quality, and a belonging dimension.

What I inevitably conclude from how QOL is portrayed is that it could be anything and everything, all at once. A dimensional approach seems to create a need for what Cummins (1996) refers to as an “an attempt to order chaos” (p. 303). Clearly, however, individual’s standards, values, perceptions, and beliefs play a part in QOL appraisals. Through definitions, we come to know QOL as satisfaction with life domains of importance to the individual, the extent to which a person’s life satisfaction and well-being are positive, and a person’s appraisal of and satisfaction with their current functioning versus their ideal. Subjectivity is evident in QOL being equated with satisfaction with aspects of life important to the individual, overall subjective well-being, the individual’s evaluation of functioning within a number of domains of value and their importance to him or her, and an individual’s appraisal of life circumstances according to his or her culture and values. Scholars on aging speak of intra-personal criteria, the degree to which a person’s life experiences are satisfying, and a subjective perception that takes good and bad aspects of life into account. Other allegiances rest with overall well-being weighted by a personal set of values, the degree to which a person enjoys important possibilities in his or her life, and a feeling of well-being resulting from satisfaction with aspects of life important to the individual. Attention is also drawn to the individual’s perception of their position in life in accordance with their goals, culture,

values, expectations, standards, and concerns, and to a concept that is dependent on the perceptions of the individual.

Definitions inherently rest with the assumption that what the salient dimensions of life are and how important they are rests with the individual who lives that life, lending further credence to the arguments offered by Benner (1985) and Parse (1994). Ironically, despite her proclivity toward modeling, Zhan (1992) simultaneously speaks of a transitory subjective appraisal of the totality of life experience, shaped by cultural, ethical, religious, and other personal values. In effect, predetermining the conceptual features of life seems counterintuitive to inquiring about the individual's point of view and begs one remarkable question - Who's QOL is it anyway? Given that scholars agree that by definition, QOL is primarily subjective, is it logical or defensible to determine for others what counts as QOL? If scholars simply offer up competing claims around how broadly to cast a conceptual net, we are left to our own devices to choose among them. Even if we were to take an average of the number of domains as a general guide, the question still remains as to which are to be included and by what criteria. Brown and Gordon (1999) and Parse (1994) would surely argue that the individual living that life is the one who decides what is meaningful and relevant.

What does seem prudent, given these issues, is a conceptualization of QOL as a global or overall subjective appraisal. The logic behind such an approach is that people are given the opportunity to synthesize how satisfied they are within the dimensions of life considered to be salient by that individual (Cummins, 1996). Indeed, there is increasing support for such an approach in the empirical literature (Cowan, Young-Graham & Cochrane, 1992; Farquhar, 1995; Felce & Perry, 1995; Oleson, 1992; Ormel

et al., 1997; Stuijbergen et al., 2000; Tsang et al., 2004; Tseng & Wang, 2001; Wilder, 1995; Zissi et al., 1998). Several causal models of QOL include overall perceptions of QOL as an outcome variable (Bowling et al., 2002; Cowan et al., 1992; Farquhar, 1995; Stuijbergen et al., 2000; Tsang et al., 2004; Tseng & Wang, 2001; Wilder, 1995). In a review of the QOL literature pertaining to older adults with chronic lung disease for my thesis work, I also found support for global appraisals. For example, Leidy and Haas (1999) conceive of QOL as “a satisfying sense of wholeness that encompasses integration, totality, and collective of personal and interpersonal characteristics” (p. 70). Nicholson and Anderson (2003) adopt a similar position in their description of “a process in which individuals engage with, and negotiate a meaning of their experiences with disease within the context of their own biographies” (p. 268).

Looking at QOL as a global appraisal is advantageous in that what counts rests with the individual's own standards, values, expectations, beliefs, and experiences. No prescriptions about what the individual considers in making such an appraisal are offered. QOL is not portrayed as being easily partitioned, no conceptual limits are set, and the researcher need not cast a conceptual net. Though global measures have been criticized for their lack of attentiveness to exactly what people think about (Lawton, 1991; Felce & Perry, 1995; Farquhar, 1995; Gladys, Gosch, Dishuk & Crits-Christoph, 2000), a dimensional approach has also fallen short of this goal, rendering it idealistic. Global appraisals also avoid circular reasoning or tautologies within models because overlapping claims are not being made which would lead to great confusion between what constitutes and influences QOL.

A number of scholars offer arguments in support of conceptualizing QOL as a global appraisal. For example, Lawton (1991), along with Felce and Perry (1995), argue that aging with chronic illness provokes changes in values, expectations, and goals that can change the importance of dimensions or domains. Carr, Gibson, and Robinson (2001) came to the same conclusion in finding significant differences in QOL between individuals with the very same illness and severity stage. Lawton (1991) also contends that individuals adapt and come to accept increasing levels of disability over time, resulting in changing ratings on dimensions of physical health and functioning, and overall QOL. Global appraisals provide an opportunity for positive appraisals to emerge in the midst of poor health and functioning (Fuhrer, 2000).

Like Leventhal and Coleman (1997), Gladis, Gosch, Dishuk, and Crits-Christoph (1999) emphatically draw attention to a growing awareness that people may devalue a domain to compensate for functional limitations brought on by an illness. Here, for example, an individual who has limited mobility may place value upon making their home a more desirable place to live in, emphasizing their surrounding environment rather than physical functioning. Indeed, Carr et al. (2001) found that among those experiencing changes for the worse in their physical health, QOL perceptions remained unchanged in reappraisals. Lundh and Nolan (1996) also argue that as people age, they accommodate to and immunize themselves against losses in life by focusing on goals and activities that are of central importance to them. As a result, QOL becomes a reflection of the individual's perceptions of his or her possibilities in life. Carr et al. (2001) maintain that horizons of possibility in life are influenced by a wide array of factors, including one's sex, social class and ethnicity. O'Boyle (1997) conceives of life

possibilities as an individual's own hopes and ambitions for the future that another person cannot see. In essence, what is valued and deemed possible or of central value rests with the individual, and which dimension of life may compensate for another and when or how this occurs is yet to be addressed in any of the models portraying QOL as a dimensional outcome.

Like Benner (1985) and Parse (1994), Hatton (1998) and Pukrop (2003) attend to the notion of heterogeneity in meaning. That is, different dimensions mean different things to different people, and what people emphasize varies. Though a proponent of a dimensional approach to QOL, Cummins (1996) also maintains that people will use their own groupings of dimensions in their own way to generate an overall perception of QOL. Bernheim (1999) argues that QOL is both an individual and emerging construct because little is known about how important a domain of life is to an individual or how domains interact; in reality, they may be weighted or related in very idiosyncratic ways. Djikers (2003) concurs and further questions the assumption that lives can be easily and neatly partitioned. Prutkin and Feinstein (2002) and Sullivan (2003) argue that global appraisals have unquestionable face validity because the person living that life is the only valid bearer of qualities.

In reflecting upon definitional and constituent claims about QOL and the perspectives of a number of methods scholars, I am led to conclude that, in this study, QOL is most aptly conceptualized as a global appraisal within which individual ratings and levels of importance are implicit. The sheer lack of consensus around the inherent features of life and their linkages and importance, and scholarly allegiances to QOL as a subjective appraisal shaped by personal values, beliefs, standards, and concerns, and visions of life

possibilities render a dimensional approach counter-intuitive. The devaluing of domains, inter-individual differences among persons with the same illness, and positive appraisals of QOL despite poor health provide further impetus. In conceiving of QOL as a global appraisal, there is also no overlap between what is a conceptual and a causal feature. Global appraisals also surface as outcomes in several theoretical models of QOL. Indeed, Mast (1995) and King et al. (1997) call for a greater use of theory as an organizing framework for providing a rationale, structure, and a corresponding definition for QOL to achieve greater consensus in the way it is to be conceptualized. In order to determine whether further clarity in this study rests with locating QOL within a theoretical framework, a detailed comparing and contrasting of the theoretical claims being offered is essential.

#### *Looking at Quality of Life through a Theoretical Lens*

At present, no theory of QOL, per se, exists (Bullinger, 2002) and as a consequence, scholars tend to locate QOL within existing cognitive or psychosocial theories. Among the generic QOL models, four are explicitly linked to theories: Cognitive Adaptation (Cowan et al., 1992), Human welfare (Nordenfelt, 1993), Self-regulative Processes (Leventhal & Coleman, 1997), and Social Productivity Functions (Ormel et al., 2001). Though Zissi et al. (1998) do not refer to any particular theory, they do allude to the cognitive mechanisms of social comparison and self-related constructs.

Cognitive adaptation theory focuses on the symptomatic distress and alterations in functioning and social support that chronic illness brings, and whether beliefs about oneself and perceptions of control are upheld despite their presence (Cowan et al., 1992). Perceived levels of distress and alteration depend on the severity of an illness, its

treatment, and the person's socioeconomic background. If individuals perceive themselves in a positive light and feel in control of the challenges and changes in their lives, they are able to psychologically adapt to the presence of chronic illness. According to Nordenfelt, QOL is a state of welfare that is shaped by the limitations and opportunities in the surrounding environment, and in our personal physical and mental resources. Welfare is reflected in a perception of overall happiness, one arising from individuals' appraisals and comparisons of current versus ideal life circumstances or what they have and what they want. People have different capacities and tendencies to feel happy, more ambitious wants over time, and often defer wants due to more pressing priorities and the limitations they are faced with. In realizing some wants and holding those deferred as something to strive for in life, individuals, for the most part, reach a state of equilibrium or of being neither completely happy nor unhappy.

In Leventhal et al.'s (1997) model, common-sense illness representations pertain to how cognitive appraisals about the meaning of symptoms, whether an illness can be controlled or cured, and affective appraisals or emotional reactions to illness threat. Here, self-regulation pertains to individual's creation of procedural rules of thought or action directed towards illness threat which, when executed, provide feedback that will either confirm or contradict initial expectations and reactions to illness threat. The execution of procedures or rules leads to a QOL reappraisal; those helping to reduce or remove the perceived threat of an illness and abate negative emotional reactions have a positive impact. Zissi et al. (1998) focus on self-related constructs and social comparisons. Here, it is theorized that the individual's self-concept and autonomy influence the impact of age, physical functioning and depression, and others' assessments of their QOL upon their

own perceptions of QOL. Outsider perspectives and self-appraisals are also filtered through the individual's standards, aspirations, expectations, beliefs, and values. As a cognitive mechanism, Zissi et al. conceive of this filter as the individual thinking about and comparing his or her current and past life conditions as well as what others think, and from this, a subjective appraisal of QOL arises.

Social productivity pertains to a process of cost-benefit analysis (Ormel et al., 2001). In response to the impairments and limitations brought about by chronic illness, people take stock of or appraise their personal, financial, and social resources and, then, weight these resources with regard to the actual cost of using them meet a universal need for physical and social well-being. If the cost is too high or the resources needed are not there, people make tradeoffs to produce the least costly gains in well-being. An older adult facing physical limitations posed by a chronic illness, for example, may spend money on a safer and a more desirable living space rather than putting energy into membership in a posh social club to gain a higher social status. It is also theorized that individuals engage in re-appraisals of QOL once their chosen tradeoffs are made to determine how beneficial they actually are.

Though the latter group of theories provides a framework of explanation, several issues arise. First, chronic illness limitations, impairments or threats are conceived of as the main stimuli for QOL appraisals. Such claims give rise to an illness driven perspective of QOL. In addition, though cognitive appraisals of resources, self-beliefs and illness threat play a large role in appraisals, the structure of each model differs. Here, for example, Cowan et al. (1992) include two stages of mediation, consisting of perceptions of control and appraisals of changes in the quality of social support and level

of physical functioning. Zissi et al. (1998) lay claim to self-concept and autonomy as mediators that pass through a perceptual filter of personal beliefs, values, goals, and standards. Leventhal et al. (1997) depict control as an antecedent causal feature and self-appraisals and cultural practices as mediators in their theoretical model. The latter model also portrays illness appraisals as cognitive and affective, and reciprocal vis-à-vis a feedback loop between illness threat, and responsive thoughts and actions that serve to confirm or contradict threat. In contrast, Ormel et al. (1997) speak of appraising and expending personal and social resources, a cost-benefit analysis and a natural proclivity towards least costly gains in well-being.

With respect to QOL itself, Ormel et al. (1997) depict a hierarchy of well-being in their QOL model, while Zissi et al. (1998) conceive of global well-being and well-being in eight life dimensions. Cowan et al. (1992) speak of a triad of global appraisals encompassing QOL including life quality, satisfaction with quality, and well-being. Leventhal et al. (1997) model six dimensions of life and a pre- and post-threat QOL appraisal, while Nordenfelt (1993) simply draws attention to a global perception of happiness.

Overall, despite a move toward theory as organizing frameworks among generic models, there is great diversity around what QOL itself consists of and the theory that best captures it. Though four of these five theoretical models share a common focus regarding the salience of cognitive beliefs, the overall structure of the model in terms of both the types and numbers causal features, and the numbers of stages of appraisal vary between them.

The two most predominant theories in the non-disease-specific literature pertaining to older adults alone are that of human need and development theory (Fisher, 1995; Higgs et al., 2003; Raphael et al., 1997a; Sarvimaki & Stenbock-Hult, 2000). The third and final theoretical framework is that of General Systems Theory (Wilder, 1995). While the paucity of theoretical applications in the aging literature creates the impression that there could be greater agreement regarding the foundation upon which QOL rests, how applications manifest themselves provides much evidence to the contrary.

An examination of theoretical applications within the first four models raises many important issues. Sarvimaki and Stenbock-Hult (2000) argue that the older adult's sense of integrity is preserved by looking back on life without a sense of failure and that preservation creates a propensity to forge new goals; in doing so, older adults pursue activities that provide added meaning in their lives. The capacity to forge new goals is, however, threatened by the proximity of death and lessening independence. Fisher (1995) claims that older adults look back upon their past life achievements; in being challenged by the disparity between aspired and actual achievements, the richness of their acquired life experiences, knowledge and skills comes to the fore. In turn, a sense of autonomy, mastery, and personal growth and achievement, as universal high order needs, arise through the passage of such assets to younger generations. In turn, such generative activity contributes to successful aging. However, Fisher contends that there are prerequisite basic universal needs for attaining good health, securing income and shelter, and finally, accepting or coming to terms with what one has been able to achieve in life.

The latter perspectives suggest that while there is a tendency among proponents of developmental theory to focus on one stage, at the same time, there is a lack of agreement

concerning which best captures QOL: ego-integrity or generativity. We are simply left to choose. This 'either-or' position is, however, inconsistent with Erickson's (1986) theoretical perspectives. In his seminal work entitled *Vital Involvement in Old Age*, Erickson purports that older adults re-experience *all* stages of development. This re-experience leads to a reaffirming and strengthening of the virtues of care, love, fidelity, competence, purpose, will and hope. In this process, each is fused into an integrated sense of the self or the ego and a comprehensive sense of wisdom with which to live out the future. Though Sarvimaki and Stenbock-Hult (2000) claim to have adopted Erickson's theoretical perspectives, they turn to humanistic and ethical philosophy for their conceptual features. In addition, Fisher (1995) links developmental theory with a concept other than QOL – namely, successful aging.

Proponents of need theory demonstrate even greater discord. Raphael et al. (1997a) draw upon existential philosophy to argue the importance of a theory about the universal need to be, belong and become. In contrast, Fisher (1995) and Higgs et al. (2001) draw upon the work of multiple psychosocial theorists to differentiate between basic and higher order needs. As a result, there is disagreement regarding whether autonomy is a basic or a higher order need. Fisher (1995) also likens QOL to meeting basic needs alone, while Higgs et al. (2001) believe that QOL is akin to meeting basic and higher order needs. In contrast, Raphael et al. do not distinguish between higher and basic needs. Overall, although the notion of universal human need permeates these works, the actual foundation upon which QOL rests and how need theory is applied differs. Consequently, limited cross-comparisons can be made between models focusing on human need.

Wilder (1995) turns our attention from human need and development to humans as life systems reacting to environmental and intra-personal sources of stress. Wilder posits that hardiness, which arises from older adults' interactions with their surrounding environment, brings a strong sense of meaningfulness that gives rise to the perception that stress is an opportunity for personal growth. Personality, in essence, acts as a buffer to life stress brought about by aging. One other difference manifests as QOL being akin to a global appraisal of overall health and life satisfaction rather than a hierarchy of life dimensions as aspects of being or needs.

Despite the divergent perspectives among theoretical advocates, several lessons can be learned in relation to QOL modeling. First, QOL itself is a very complex phenomenon. The differential application of theory and the need to draw upon supplemental theory or philosophy suggests that both development and need theory do not fully capture what QOL is and what it encompasses. The specific links between QOL and either theory are thus rendered questionable or unclear. Given that no theory of QOL exists per se, adopting a theory may simply be an attempt to reign in QOL. However, in this process, more confusion emerges. For example, is QOL a productive function, a process of cognitive adaptation to chronic illness, or a state of welfare or happiness? In a similar vein, would human need or human development theory best capture QOL? Personal preference may also play a part in which theories are selected and how it is applied. For example, though Ormel et al. also allude to the notion of universal needs adopted by the vast majority of scholars on aging, they do so under the auspices of social productivity. It appears that in QOL modeling, once a theory is chosen, selective attention is given to particular aspects of it. In some instances, additional theories or philosophies are

required for full model development. In the end, we are left to choose from divergent perspectives about QOL. Little clarity is gained from existing theoretical models for the present study and in the midst of an overall lack of conceptual agreement on what QOL is and what it encompasses, an empirically- based QOL model appears to be more prudent.

### *What Influences Quality of Life?*

Given that the aim of this study is to develop a causal model of QOL, attention to claims pertaining to what influences QOL is warranted. Eighteen of the models in Appendix A include causal features. Among these, five are generic (Cowan et al., 1992; Leventhal & Coleman, 1997; Oleson, 1990; Ormel et al., 1997; Zissi et al., 1998) and thirteen arise from scholars on aging (Bowling et al., 2003; Farquhar, 1995; Felce & Perry; 1995; Hellstrom & Hallberg, 2000; Hilleras et al., 2001; Kleinpell & Ferrans, 2002; Nesbitt & Heidrich, 2000; Sarvimaki & Stenbock-Hult, 2000; Stuijbergen et al., 2000; Tang et al., 2004; Tseng & Wang, 2000; Wilder, 1995; Zhan, 1992).

Given that the generic models pertain to all persons, they provide direction as to what may influence QOL older adults, and among these, causal allegiances rest with demographic and financial background factors, perceived health and physical functioning, personal beliefs, social support, and the surrounding physical environment. The latter causal features are also found in the models developed by scholars on aging. The presence of a commonly agreed upon set of causal features across eighteen models suggests there is far greater agreement about what influences QOL. Personal beliefs are commonly conceived of as mediators in QOL appraisals.

In order to determine the nature of the impact that the latter set of causal features has upon QOL, the quantitative and qualitative empirical literature on aging adults is

reviewed. Findings from empirical studies provide specific direction for this study in three respects. First, in the conceptual literature, each causal feature is proposed as having a salient impact upon QOL. Empirical studies move us from conceptualizing to evidentiary support for their inclusion in a causal model. Second, given the very broad nature of each causal feature, empirical works help to identify whether certain aspects are of particular significance to older adults. For example, would knowing that support is there when it is needed or having frequent contact with one's family significantly influence QOL among older adults? Empirical findings also convey the direction of influence of causal features upon QOL. In essence, the empirical literature serves as an added body of evidence for identifying the causal features to be further explored in this study and formulating expectations about the direction of influence they may have upon overall QOL.

#### Empirical Findings

Empirical tests of many of the models arising from scholars on aging (Bowling et al. (2002), Fisher, 1995; Farquhar, 1995; Hellstrom & Hallberg, 2001; Hilleras et al., 2003; Kleinpell & Ferrans, 2002; Nesbitt & Heidrich, 2000; Raphael et al., 1997b; Sarvimaki & Stenbock-Hult, 2000; Stuijbergen et al., 2000; Tang et al., 2004; Tseng & Wang, 2001; Wilder, 1995; Zhan, 1992) have been done. Two generic models (Cowan et al., 1992; Zissi et al. (1998) have also been tested among older adults. Though the models offered by Cowan et al. and Stuijbergen et al. were respectively tested on older adults with melanoma and heart failure, and multiple sclerosis, in keeping with the goal of developing a non-disease-specific causal model of QOL, findings from the latter two studies analogous to those of non-disease-specific empirical scholars cited above will be

drawn upon. I now turn my attention towards the empirical findings on perceived health and functioning, sociodemographics and finances, personal beliefs, social support, and the surrounding physical environment.

#### *Demographics & Finances*

Sociodemographic and financial factors are addressed in the vast majority of QOL models that have been tested. In semi-structured interviews with 40 chronically ill older adults, Fisher (1995) concluded that having adequate income and having a home to call one's own bolstered QOL. In another qualitative study of 210 older adults, Farquhar (1995) reported similar findings to those of Fisher. In an empirical study of QOL among 96 older adults, Wilder (1995) found that age and income did not play a significant role, and education weakly predicted the health-related component of QOL alone. In a study of the empirical validity of QOL, as the need to be, belong and become, among 205 older adults, Raphael et al.(1997b) found that income and education were not significant predictors of QOL. The only significant demographic factor in the latter study was age; however, advanced age was a weak predictor of poor *physical* QOL alone. In a study of 99 older adults, Zissi et al. (1998) simply controlled for income and found no empirical support for gender and a marginal level of support for age. In contrast, Sarvimaki and Stenbock-Hult (2000) emphasized the importance of age, gender, education, and income but did not explore their impact upon well-being, meaning and value in their empirical study of 300 aging adults. In a similar vein, Cowan et al. (1992) simply do not report links between the latter three factors and QOL in the pilot testing of their model among 57 older adults with heart disease and cancer. Finally, among a study of 448 older adults,

Hellstrom and Hallberg (2001) found advanced age to be a significant but weak predictor of low QOL, and gender was not significantly related to QOL.

In four more recent empirical studies, similar threads of evidence arose. For example, Tseng and Wang (2001) found no empirical support for gender, age and education in their study of QOL among 161 nursing home residents; income did, however, moderately and positively predict QOL. Though Hilleras et al. (2001) did not explore the role of gender or income, no empirical support was found for age and education as predictors of QOL of 105 older adults. In a much larger study (n=999), Bowling et al. (2002) found no empirical support for age, education and income; however, males were found to have a significantly higher QOL than females. Kleinpell and Ferrans (2002) did not explore the role of gender in their study of 164 older adults and found that perceived financial strain and age did not have a significant impact upon QOL.

In relation to both demographics and finances, then, there is empirical evidence for adequacy of income rather than income itself as a predictor of QOL, while education consistently played a non-significant in QOL appraisals of older adults. Though gender has not been empirically supported in four studies, its exclusion in a greater number, along with its significance Bowling et al.'s (2002) study, raises questions regarding the variable. Finally, with respect to age, mixed and weak or marginal has been found.

#### *Perceived Health & Physical Functioning*

The concepts of perceived health and physical functioning have been widely explored in relation to QOL in a number of empirical studies. Cowan et al. (1992) found that perceptions of physical functional alterations, as the degree of dependence on others to complete activities of daily living (ADL's), had a significant, strong and positive

correlation with QOL. In a test of Zhan's (1992) model by way of a meta-analysis of the empirical literature on QOL among aging adults, Hapshe (1994) cites a strong positive link between QOL and subjective health. Though Wilder (1995) found negative health perceptions to be a weak but significant predictor of poor QOL, Fisher (1995) and Farquhar (1995) reported that having positive perceptions of health was a strong and recurrent theme among older adults reporting positive QOL. To this, Farquhar added one other health-related feature - positive perceptions of functioning or being able and independent. Raphael et al. (1997b) also found a strong positive association between perceived physical health and QOL. Zissi et al. (1998) found that physical health, as perceived levels of dependency, had a small but significant direct effect upon overall subjective well-being.

In their study among 137 older women, Nesbitt and Heidrich (2000) reported that ADL capacity had no significant direct effect upon QOL. However, Sarvimaki and Stenbock-Hult (2000) found a significant, moderate and positive link between ADL capacity and psychological well-being. To this, the latter group also adds a strong positive link between health perceptions and perceived meaning in life. Hellstrom and Hallberg (2001) found that not being able to stay at home without ADL assistance moderately predicted low QOL; having either formal or informal assistance to complete them had the opposite effect. Tseng and Wang (2001) noted that having better ADL and physical functioning led to a significantly higher QOL among 161 older adults. A similar pattern surfaced between ADL capacity, positive health perceptions and QOL in the empirical studies of both Bowling et al. (2002) and Hilleras et al. (2003).

Overall, the empirical findings on perceived health and physical functioning indicate that both play a significant and positive role in the QOL appraisals of older adults. With respect to the latter of the two, there are also recurring themes about the older adult's levels of dependence on others for, and their capacity for and perceptions of being able to perform ADL's.

### *Personal Beliefs*

A number of empirical scholars have looked at how self-appraisals and perceptions of coherence, autonomy and self-efficacy impact upon the QOL of older adults. Cowan et al. (1992) report preliminary evidence for the mediating role of self-esteem and sense of coherence, manifesting as moderate and significant correlations with QOL and two other predictors of QOL - socioeconomic status and functional health. While self-efficacy did not play a significant role in Bowling et al.'s (2002) study, Stuifbergen et al. (2000) found marginal support for its impact upon QOL through health behaviors. In Wilder's (1995) study, hardiness had a weak direct effect upon QOL. Zissi et al. (1998) drew attention to self-concept as a weak predictor of QOL and autonomy as a moderate and significant predictor of positive QOL, with the latter having a similar indirect effect vis-à-vis comparisons of past with present life conditions. Though the association was weak, Nesbitt and Heidrich (2000) found that having a sense of coherence and positive appraisals of illness had a significant positive impact upon QOL of older women. In addition, the latter two predictors rendered the link between functional health and QOL weak and non-significant.

There has also been a significant shift in attention to spirituality (Atkin, 2000; Bartlett, Bilderback, Matsumoto & Bathon, 2003; Brady, Peterman, Fitchett, Mo & Cella, 1999;

David, 2001; Fry & Reinert, 1999; Gioiella, Berkman & Robinson, 1998; Katsuno, 2003; Raholm, 2002; Robinson-Smith, 2003; Ross, 1995; Tate & Forcheimer, 2002).

Spirituality is most commonly conceptualized as a multidimensional personal belief system. Ross, for example, defines spirituality as meaning and purpose or fulfillment in life, hope/will to live, and belief and faith. Fry and Reinert name three salient dimensions, the first relating to a belief in a higher power, manifesting as a sense of faith, love, hope, transcendence, and church attendance. The second dimension, recognizing one's own mortality, leads to a renewed appreciation for life, a desire to make each day count, and an appreciation of the small things in life. The third, having a sense of meaning and purpose in life, refers to trying to make sense of change to daily routines, roles and rituals imposed by illness, and trying to grasp what it means to have illness that will not go away. According to Fry and Reinert (1999), these dimensions of spirituality bring perspective and direction in life. Gioiella et al. (1998) look to relationships with God, with the self, with one's community and surrounding environment, and contend that spirituality has two dimensions: religious or having faith in God and existential or having meaning and purpose in life. Brady et al. (1999) refer to a subjective experience manifesting as a dual sense of meaning and faith which, in turn, brings a sense of wholeness, peace, hope, and a belief in one's ability to rise above troubles and worries. Atkin (2000) conceives of an outlook and a foundation upon which a triad sense of purpose, meaning and harmony in life rests. In contrast, David (2001) defines spirituality as perceived meaning in life.

Raholm (2002) links spirituality with meaning arising from a renewed appreciation for life and one's health, and as an inner strength borne out of having faith and love in one's life. Tate and Forcheimer (2002) look to transcendence or the ability to rise above life

experience by seeking meaning and purpose in life, having faith, and engaging in prayer, worship and meditation. Robinson-Smith (2002) focuses on the spiritual practice of prayer as a vehicle to a sense of meaning, wholeness and confidence in life. Bartlett et al. (2003) speak of spirituality as an intrinsic quality that brings a sense of hope, meaning, opportunity for social connectedness, and a sense of transcendence that helps individuals adjust to the unpredictable nature of chronic illness. Finally, Katsuno (2003) alludes to personal spirituality or having and expressing a belief in, so as to receive support from God, a sense of meaning and purpose in life, and making sense of changes in one's life that are imposed by illness.

Aspects of spirituality have been explored in relation to QOL in six non-disease-specific empirical works on aging adults. In the first, Hapshe (1994) found spiritual integrity, measured as religiosity, to be a strong, significant, and positive predictor of overall QOL. In a validation study of their model, Raphael et al. (1997b) explored whether spiritual well-being, as a sense of accomplishment in life and participating in religious and spiritual activity, could predict *life satisfaction* but found no significant link between them. They did, however, find a moderate, significant, and positive link between spiritual being and perceived health. In Bowling et al.'s (2003) research, when older adults were asked what made their lives good, attending a place of worship and spiritual beliefs were consistently mentioned. Though Tseng and Wang (2001) found no supportive empirical evidence for the role of religious beliefs, Hilleras et al. (2001) found a significant, moderate and positive link between religiosity or having a belief and faith in a higher power and QOL. Tang et al. (2004) reported similar findings for religiosity and spiritual well-being or having meaning and purpose in life. Farquhar (1995) and

Hilleras et al. also found that participating in meaningful activity bolstered QOL. Though Sarvimaki and Stenbock-Hult (2000) do not allude to spirituality in their model, they did find a significant strong and positive link between perceived health and meaning in life.

Overall, though spiritual beliefs have been found, in all but one study, to have a significant positive influence upon QOL, the impact of meaning and purpose in life is seldom explored. Otherwise, positive links between meaning in life and spiritual well-being, and perceived health have been found.

### *Social Support*

Social support also plays an important role in QOL appraisals. Aspects of support found to have a significant positive impact include having active social contacts with significant others (Farquhar, 1995; Fisher, 1995). Sarvimaki and Stenbock-Hult (2000) report similar findings in relation to contact with family network and QOL as psychological well-being, and having contact with friends and neighbors in relation to one other conceptual constituent of QOL - self-esteem. In contrast, Bowling et al. (2002) and Tseng and Wang (2002) found weak support, and Zissi et al. (1998) and Hilleras et al. (2001) found no support for family contact as predictors of QOL. To this, Hilleras et al. add a non-significant association between QOL and satisfaction with adult-child relations.

Perceived social support has also been widely explored in the QOL literature but has yielded more consistent findings than that of social contact. Having adequate social resources or supports in a time of need (Hapshe, 1994) and perceived support from all sources (Stuifbergen et al., 2000) have been strongly and positively linked to QOL. Hellsrtom and Hallberg (2001) report a similar association between QOL and perceptions

of received help with ADL's and instrumental ADL's from friends, relatives, neighbors, and formal caregivers. Tseng and Wang (2001) found perceptions of received emotional, social, physical, informational, and respectful support from formal caregivers, not family and roommates, to be a strong positive predictor of QOL. Kleinpell and Ferrans (2002) noted the presence of a strong and positive link between perceived satisfaction with emotional, tangible and informational support from all sources, and QOL. In addition, two other studies reveal moderate support for the perception of available emotional, informational, tangible, and affectionate support from all caregivers (Tang et al., 2004) and being able to get help when and where it is needed from all sources (Bowling et al., 2002). Though the latter studies focus on all types of support, in a rare longitudinal study on the impact of emotional support and instrumental or practical day-to-day help upon QOL among 51 newly diagnosed cancer patients, all-source emotional support perceptions alone played a significant role (Courtens, Stevens, Crebolder & Philipsen, 1996).

Overall, social support has been found to play a significant role in the QOL appraisals among older adults, and the more positive the perception of support from all sources, whether received or available for receipt, the higher the QOL.

#### *Physical Environment*

A number of empirical scholars have expressed an interest in the role of the surrounding physical environment. Farquhar (1995), for example, found that living in undesirable surroundings led to poor QOL, while Fisher (1995) found that having a home to call one's own was especially salient to QOL. Though Raphael et al. (1997b) included age, income and education as proxies for environmental quality in their model validation

study, their overall lack of significance led them to conclude that direct perceptions are requisite to understanding its role in QOL appraisals. Sarvimaki and Stenbock-Hult (2000) follow suit by operationally defining the physical environment as the older adult's living area and housing conditions, and not empirically exploring their impact upon well-being, meaning and value. Bowling et al. (2002) did, however, empirically test the impact of both the quality and safety of the surrounding physical environment, and concluded that both had a strong and significant positive link with QOL. Having environmental barriers to being active has been significantly linked with poor perceived QOL (Stuifbergen et al., 2000). Further to this, Tang et al. (2004) noted that older adults who lived alone had far higher appraisals than those living with a caregiver, and concluded that a change in a habitual living environment hinders QOL. Overall, older adults' conveyances about their surrounding physical environment indicate that a desirable, habitual, safe, and enabling environment has a remarkably positive impact upon their QOL.

The empirical findings, as a whole, help to identify those causal features that are particularly significant to older adults; these consist of their perceptions of overall health, ADL performance, social support, the quality of their surrounding physical environment, and spiritual beliefs. To this end, I tie the findings from the conceptual and empirical literature review together in order to provide a detailed description of the causal model to be proposed in this study.

#### A Proposed Model of Quality of Life among Older Adults

In a review of the QOL literature for this study, 39 conceptualizations from a variety of disciplines, spanning from 1965 to 2004, were compared and contrasted. The

approaches range from a single global evaluations to multiple preconceived dimensions or personally crafted perceptions arising from lived experiences.

The purpose of this study was to draw upon the conceptual and empirical literature in order to develop a non-disease-specific causal model of QOL pertaining to aging adults. The issues and lessons being offered from the manner in which QOL has been conceptualized provide direction for this study. First and foremost, QOL itself is conceptualized as a global appraisal. Given the varied perspectives being offered on which theory best captures QOL and how theory is applied, in this study, I offer an empirically based model of QOL. Finally, with respect to what influences QOL, most model scholars agree that, on a conceptual level, the older adult's demographic and financial background, perceptions of health and physical functioning, personal beliefs, social support, and physical environment may influence QOL.

Empirical studies provide further direction by identifying those causal features that are of particular significance to older adults. With respect to finances, the consistent non-significant impact of income upon QOL suggests that income alone is not a viable predictor. In response, I wish to draw attention to Zhan's (1992) contention that QOL pertains more to perceptions of the adequacy of financial resources; dollar values do not capture the meaning or significance of the resources among aging adults. When testing Zhan's model in a meta-analysis of empirical works on healthy and ill older adults with specific types of illnesses, Hapshe (1994) found perceived economic security to have a weak to moderate but positive effect upon QOL. In a similar vein, Farquhar (1995) and Fisher (1995) found that having enough income for basic needs such as shelter, transportation and food, and having a home had strong thematic links with positive QOL.

What seems more prudent, then, is to explore the impact of older adult's appraisals of the adequacy of their financial resources, and it is expected that the more positive the appraisal, the higher the QOL.

With respect to gender, the evidence is not clear. In four empirical works, it was not a significant predictor of QOL; significance in one a large sample study and exclusion in six others raises questions around the role it plays in QOL appraisals. In contrast, age has been explored in the majority of empirical works, it has received mixed support and at best, its impact has been weak or marginal. These findings suggest the role of age and gender is inconclusive, and in response, no conjectures are offered about their impact upon overall QOL. The empirical findings on health and functioning consistently point to a significant role for perceived health and ADL performance, with both positively affecting QOL.

Spirituality, within the context of QOL, is defined or described as having multiple dimensions and a positive impact upon QOL. Though the impact of religion has been widely explored, meaning in life has received far less empirical attention in non-disease-specific models of QOL among aging adults. There are, however, threads of evidence that point to the need to further explore the role of meaning in life in this study (Farquhar, 1995; Hilleras et al., 2001; Tang et al., 2004). In addition, though sense of coherence has not been explored as a spiritual belief among model scholars in this literature review, Antonovsky (1978) defines coherence as a psychological resource that leads people to perceive that the problems they face can be *meaningful*, understandable and manageable. Here, meaningfulness refers to a motivational component of coherence that instills within people a desire to emotional invest in or commit to overcoming problems by finding

some sense of meaning in them. In this respect, the preliminary empirical support for coherence cited in the works of both Cowan et al. (1992) and Nesbitt and Heidrich (2000) provides added impetus for exploring the causal role of perceived meaning in life.

Wilder's (1995) allegiance to hardiness as a resource that brings a sense of meaning to life bears no exception. One other example lies in Brady et al.'s (1999) empirical study of spirituality and QOL; though this study is disease-specific, perceived meaning in life had four times the positive predictive power of religious faith for overall or global QOL. In this study, it is expected that meaning in life will have a significant and positive direct effect upon overall QOL.

In the discussion pertaining to personal beliefs as a predictor of QOL, purpose in life is widely defined as a salient aspect of spirituality. Fife (1994) echoes these sentiments when linking purpose in life, as a part of the spiritual work of the chronically ill, to contextual meaning. Here, this author conceives of purpose in life as putting one's problems into perspective or placing them within the context of day-to-day life, coming to understand their significance for the future, and continuing to forge goals or plans that can bring a sense of accomplishment and achievement. Though Sarvimaki and Stenbock-Hult (2000) conceive of purpose in life as a constituent rather than a cause of QOL, Tang et al. (2001) explored its impact in their non-disease-specific model and found it to have a strong positive influence upon QOL. Raphael et al. (1997b) defined one aspect of spiritual being as sensing accomplishment in one's life and explored its link with life satisfaction, not QOL. One other thread of evidence lies in Farquhar (1995) and Hilleras et al. (2001) finding that meaningful activities significantly predicted positive QOL, further reifying Fife's notion of purposive accomplishing and achieving. Overall, as was

noted in relation to meaning in life, the paucity of empirical attention to purpose in life, coupled with the growing recognition of its spiritual roots, warrants further exploration of its direct causal impact upon overall QOL.

Two other empirical findings are of interest to this study. In particular, Raphael et al. (1997b) found that perceptions of health were strongly and positively associated with spiritual well-being, the latter being a composite of accomplishment in life and spiritual activity. Sarvimaki & Stenbock-Hult (2000) report a similar association between perceived health and meaning in life, and numbers of chronic illnesses and purpose in life. These findings support the claims made by Fife (1994), Fry and Reinhert (1999), Bartlett et al. (2003), and Katsuno (2003) that individuals, in grappling with chronic illness, invest energy into establishing what meaning it holds in relation to their day-to-day life and forging a sense of purpose for the future. As such, it seems reasonable to determine whether both meaning and purpose in life are indeed intertwined with older adults' perceptions of health. Given the latter host of claims, in this study, it is expected that the older adult's sense of meaning and purpose in life will play a mediating role in their appraisals of overall QOL, manifesting as an antecedent significant and positive link with perceived health, and their subsequent significant direct effects upon overall QOL.

The empirical findings provide a strong rationale for including social support in a causal model of QOL. In contrast to having social contacts, however, perceptions of support have consistently played a significant role in QOL appraisals. With the exception of one study (Tseng & Wang, 2001), all sources of support appear to be significant. In the latter study, however, it may simply be that, overall, nursing home staff members spent more time with residents in their roles as primary caregivers. Though social

support is most often explored as a composite, the role of emotional support alone is seldom explored in relation to its influence upon the QOL appraisals of older adults. In the social support literature, emotional support falls under the auspices of liking, admiration, respect, and love (Langford, Bowsher, Maloney & Lillis, 1997), as love, caring, sympathy, and understanding (Berkman, Glass, Bisette & Seeman, 2000), and as sharing sentiments, seeking understanding, venting frustrations, and esteem building (Lin, Ye & Ensel, 1999). The empirical findings as a whole illuminate the ameliorative significance of emotional support, whether received or available for receipt, and the way in which it is defined in the social support literature gives rise to themes of loving, respectful and confiding relationships. In this study, then, one would expect the more positive the perception of emotional types of support, the higher the overall QOL.

Empirical findings on the physical environment suggest that overall, living in an environment that is desirable, safe, habitual, and non-hindering plays a salient role in QOL appraisals among aging adults. Raphael et al. (1997b) also contend that direct perceptions of these, rather than proxy ratings such as income or education, are requisite to capturing its impact. In this study, it is expected that the more positive the older adult's perception of their surrounding physical environment, the higher their overall QOL will be.

The model proposed for this study consists of seven causal features of interest and has global QOL as an outcome, one which bears a striking resemblance to those offered in the empirical works of classic scholars (Cantril, 1965; Andrews & Withey, 1976; Flanagan, 1978). Given the over-whelming number of definitions of QOL being offered and the types of causal features of interest in this study, the WHOQOL-OLD Group

(2002) definition of QOL was adopted. Accordingly, QOL is defined as “the individual’s perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept affected in complex ways by a person’s physical health, psychological state, level of independence, social relationships, and their relationships to salient features in the environment” (p. 6). A focus on the individual’s overall perception of their position in life and allegiances to personal values and beliefs captures the logic behind conceptualizing QOL itself as a global type of appraisal. I have argued that global appraisals are a method for capturing the individual’s take on what QOL itself encompasses, and as either Parse (1994) or Sullivan (2003) or Bernheim (1999) assert, *what* pertains to the individual living that life. The particular causal features of interest in this study also pertain to those affecting QOL.

With respect to causal ordering, the empirical literature clearly supports a model of overall QOL that captures both direct and mediating effects. There is preliminary empirical support for the older adult’s sense of coherence, autonomy, self-efficacy, self-concept, and illness appraisals as mediators in QOL appraisals. Whether meaning and purpose in life play a similar role begs further empirical attention. The focus of the causal model for this study, then, is on the direct effects of financial circumstances, ADL performance, emotional types of support, and appraisals of the surrounding physical environment. In the proposed model, each causal feature is conceptualized as having its own unique impact upon overall QOL. In addition, though perceived health is also proposed to have a direct effect upon overall QOL, meaning and purpose in life are expected to mediate this relationship. In essence, both the direct and indirect effects of

perceived health need be considered if its impact upon overall QOL is to be appreciably captured.

### Research Questions

This study addresses two specific research questions. First, what is the relationship between the influencing factors of financial resources, perceived health, ADL performance, meaning and purpose in life, emotional support, and the older adult's surrounding environment, and the overall QOL reported by chronically ill older adults? Additionally, do meaning and purpose in life mediate the effect of perceived health upon overall QOL?

### Hypotheses

1. The higher the perceived adequacy of financial resources, the higher the QOL.
2. The more positive the perception of health, the higher the QOL.
3. The more positive the perception of older adult's ability to perform their ADL's, the higher the QOL.
4. The higher the older adult's perception of meaning and purpose in life, the higher the QOL.
5. The more positive the perception of emotional types of support, the higher the QOL.
6. The more positive the perception of the surrounding environment, the higher the QOL.
7. Perceived meaning and purpose in life will mediate the effect of perceived health upon QOL.

In this chapter, a review of the multidisciplinary conceptual and empirical literature on QOL spanning from 1965 to 2004, as it pertains to all persons and to older adults, was undertaken. In light of the many issues and questions being raised from the conceptual literature review, in this study, QOL was not situated within any particular theoretical framework and was conceived of as an individual global appraisal. Additionally, given the multitude of existing definitions of QOL and the types of causal features found to significantly impact upon the QOL of older adults, the WHOQOL-OLD Group (2002) definition was adopted. The causal model offered in this study is parsimonious because it hones in on those causal features found to play a significant role in QOL appraisals. Given the inconclusive role of age and gender, in this study, their effects are explored and hypotheses offered post-hoc as to their significance. Overall, the personal, physical, social, existential, and environmental nature of the causal features included in this study capture the complex nature of QOL appraisals and the definition of QOL being offered.

In the next chapter, I provide a detailed discussion of the methodological considerations of this study in light of my aim to conduct a secondary analysis of data arising from the Canadian WHOQOL-OLD Group 2004 Field Trial and 2002 Pilot Study. I then specify the statistical techniques used to test the hypothetical links between overall QOL and its purported causal features, and to identify whether meaning and purpose in life need be considered to fully capture the impact of perceived health.

### Chapter 3 METHODS

In Chapter 2, a broad array of causal features found to have significance in relation to QOL among older adults were identified. The eight causal features of interest in this study are financial resources, perceived health and ADL performance, meaning and purpose in life, emotional types of support (whether received or available for receipt), and the home and surrounding physical environment. The research questions for the present study are: what is the relationship between financial resources, perceived health, meaning and purpose in life, emotional support, and the older adult's surrounding environment with overall QOL? It was hypothesized that each would have a positive direct effect upon overall QOL. Secondly, do meaning and purpose in life mediate the effect of perceived health upon overall QOL?

#### Study Design

I conducted a secondary analysis of two data sets focusing on QOL of older adults coordinated by a research group affiliated with the World Health Organization - the WHOQOL-OLD Group. In particular, the 2004 Field Trial and 2002 Pilot Study data gathered by the Canadian WHOQOL-OLD Group research team at the University of Victoria were analyzed.

The 2004 WHOQOL-OLD Group Field Trial was the final phase of a program of research on QOL among aging adults in which 22 partnering countries participated. In the pilot phases of this group's work, instruments on attitudes towards aging (AAQ) and QOL (WHOQOL-OLD) were developed. In addition, the purpose of the Field Trials in partnering countries was to identify predictors of health aging and good QOL among older adults. The specific research question asked was: what personal factors (including

attitudes towards aging, physical health, functional status, and medical conditions) and social factors (past and current levels of social participation, past and present work history, intergenerational relationships, and current household structure) explain and predict QOL?

The survey data collected in the Canadian WHOQOL-OLD Group 2004 Field Trial was cross-sectional – perceptions of QOL and its predictors were captured at one point in time. Further to this, the model was tested in a post-hoc manner, wherein it was first evaluated and refined using data from the WHOQOL-OLD Group 2004 Field Trial. In order to strengthen the findings from the Field Trial analysis, a validation analysis was undertaken. Here, the ‘field calibrated’ model was further tested using independent data from the 2002 Canadian WHOQOL-OLD Group Pilot Study. Cross-validation with a second sample of older adults provided an opportunity to determine whether the ‘field calibrated’ model can be generalized or applied to older adults beyond those in the Field Trial sample.

#### Ethical Considerations

Prior to beginning the Canadian WHOQOL-OLD Field Trial and Pilot Study analyses, a waiver of ethics review was granted by the University of Victoria HREC or Human Research Ethics Committee (See Appendix C). No names or identifying information were available in either data set.

#### Recruitment

The 2004 Canadian WHOQOL-OLD Group Field Trial data set, hereafter referred to as data set 1, included data from 202 older adults randomly recruited from the Client Registry of the Ministry of Health Services. This registry includes all people in British

Columbia who have received health services in the province. This includes the vast majority of older persons in British Columbia. Selection criteria were: being 60 or more years of age, English speaking, and resident of British Columbia, and having no illnesses likely to cause death within the next six months, such as cancer, and dementia or other significant cognitive impairment. Participants were equally stratified by age: 60-70, 71-80, and 81 and over.

The 2002 Canadian WHOQOL-OLD Group Pilot Study data, herein referred to as data set 2, was gathered on a convenience sample of 432 older adults meeting the same inclusion criteria. Participants were recruited through newspaper advertisements, letters to seniors' agencies, and visits with the primary investigator and research assistants to local seniors' centers. Therefore, most people resided on South Vancouver Island.

### Sample

In data set 1, data were available from 202 older adults who participated in the 2004 Canadian WHOQOL-OLD Field Trial. The average age of participants was 72.93 (SD = 8.5) and 46% were male. Although approximately 71.3 % of participants reported having at least one chronic illness, 84.4% described themselves as healthy individuals. The vast majority of participants (86.8%) lived in their own home and among these, 39.4% required support with day-to-day living. Approximately 65.9% of participants were married or partnered, and 54.9% had a post-secondary education.

With respect to data set 2, data were available on 432 older adults who participated in the 2002 Canadian WHOQOL-OLD Pilot Study. The mean age was 74.4 (SD = 8.6) and 73% were female. Although approximately 74.3% of participants reported having at least

one chronic illness, 87.3% described themselves as healthy. The vast majority of participants (91%) lived in their own home and among these, 29.7% required support with day-to-day living. Approximately 46.1% of participants were married or partnered, and 73.5% had a post-secondary education.

#### Field Trial Instruments

In this study, data elements for the Canadian WHOQOL-OLD Group Field Trial analysis were selected from the WHOQOL-BREF and WHOQOL-OLD survey instruments.

#### *The WHOQOL-BREF*

The first instrument, the WHOQOL-BREF, is an abbreviated version of the original WHOQOL-100 survey developed in 1995 - it contains one item from each of the 24 facets found within the WHOQOL-100. Overall, the BREF is a 26-item 5-point Likert scale containing two questions on overall QOL and health satisfaction, and 24 domain-specific questions pertaining to physical, psychological, social, and environmental aspects of life. Responses to each question reflect respondent perceptions about each aspect *over the past two weeks*. Domain-specific scores range from 0-100 and the higher the score, the higher the QOL. A total or overall BREF score can be obtained by summing responses in all four domains, exclusive of the two global items on overall QOL and health satisfaction.

The psychometrics of the WHOQOL-BREF have been assessed by the WHOQOL-Group (1998), Hwang, Liang, Chui, and Lin (2003), and Skevington, Lofty and O'Connell (2004). The latter three groups of investigators found the BREF to be a reliable instrument, with Cronbach's alpha ( $\alpha$ ) values ranging from .80 to .82 for the

physical and .75 to .81 for the psychological domain; the environmental domain consistently yielded an alpha coefficient ranging from of .80 to .88. Though the  $\alpha$  for social relationships ranged from only .69 to .73, these findings were attributed to having only three items in this domain in contrast to the six to eight items found in all other domains. In test-retest reliability checks over two to eight week intervals, the WHOQOL-Group (1998) reported a correlation coefficient of .66 for the physical, .72 for the psychological, .76 for the social relationships, and .87 for the environmental domain. All BREF domains significantly discriminated between well and ill groups, and confirmatory factor analyses of the BREF have consistently yield a four-domain solution with fit indices ranging from .86 to .90 (Hwang et al; Skevington et al.; WHOQOL-Group). Further to this, in a focus group study with eight elders, Hwang et al. found all BREF items were interpreted in a similar manner to their parent scale - the WHOQOL-100.

Though empirical support exists for the reliability of the domain items on the WHOQOL-BREF and the WHOQOL-OLD,  $\alpha$  coefficients cannot be derived for the single global QOL item on the BREF (G1). Hence, evidence of the reliability of global measures of QOL lie in test-retest score similarity, and in two-week interval comparisons of visual analogue scores of QOL, these range from .795 to .87 (DeBoer et al., 2004; Matsumoto et al., 2002; Osoba et al., 1997; Wahl, Goldsmith, Tetlus & Balzano, 1997). Though the latter studies are disease-specific, they do provide empirical evidence in support of adopting global QOL as an outcome in the current study.

*The WHOQOL-OLD*

The second instrument used in the 2004 Canadian WHOQOL-OLD Group Field Trial, the WHOQOL-OLD, is a scale that has just recently been developed by the WHOQOL-OLD Group presently being tested in Field Trials around the world (WHOQOL-OLD Group, in press- A). The WHOQOL-OLD contains 33 questions that fall into six domains: Sensory Abilities, Autonomy, Past, Present & Future Activities, Social Participation, Death & Dying, and Intimacy. Each question on the WHOQOL-OLD has a 5-point Likert response scale and captures the older adult's perceptions of their life circumstances *over the past two weeks*. Domain-specific scores range from 0-100 and the higher the score, the higher the QOL. A total or overall QOL score can be obtained by summing responses to all six domains.

Unlike the BREF, at present, the psychometric properties of the WHOQOL-OLD have not been fully tested. Preliminary findings of pooled data from 22 Field Trials worldwide, currently in press with *Quality of Life Research*, have yielded internal consistency coefficients ranging from .72 for the Autonomy domain to .91 for the Intimacy domain, rendering the WHOQOL-OLD a reliable instrument. Based upon the findings of a measurement model analysis, the WHOQOL-OLD Group plans to further revise the WHOQOL-OLD instrument into a 24-item scale encompassing the present six domains (WHOQOL-OLD Group, in-press A).

*Demographic and Clinical Data Form*

On a separate instrument, the Canadian WHOQOL-OLD Group also gathered personal background and health-related information from each participant in the 2004 Field Trial. Questions about age, gender, marital status, education, living arrangements,

employment, and income were posed. Health-related questions focused on general health perceptions, current medications, chronic illnesses, and substance use (alcohol and tobacco). Finally, information about numbers of, proximity to and frequency of contact with members of the older adult's social network, and the quality of these ties was gathered.

#### Pilot Study Instruments

In the 2002 Canadian WHOQOL-OLD Group Pilot Study, several instruments were employed, and those of interest to the present study included a piloted version of the WHOQOL-OLD containing all items found within the 2004 Field Trial instrument except Facet 30.5 (opportunities for physical closeness and contact) and 30.6 (level of intimacy in life), and the parent instrument from which the WHOQOL-BREF was derived – the WHOQOL-100. As the acronym suggests, the latter questionnaire contains 100 questions or items, and of these, four pertain to global QOL and general health perceptions. The remaining 96 questions fall into six broad domains of life (physical, psychological, independence, social, environmental, and spiritual). Domain items are measured on a 5-point Likert scale capturing the older adult's perceptions of their life circumstances *over the past two weeks*. Responses to each item are added and transformed to yield domain-specific scores that range from 0-100 and the higher the score, the higher the QOL. However, unlike the WHOQOL-OLD and -BREF, there is no total QOL score for the WHOQOL-100.

The present study focuses on the WHOQOL-100, and although the WHOQOL-100 has six domains, the psychometrics of the social domain will be reported as this particular domain contains items relevant to the analysis of the present study that were not included

in the BREF: Facet 15.5 (opportunities for physical closeness and contact) and 15.6 (level of intimacy in your life). In the Field Trial, the latter two items were included in the intimacy domain of the WHOQOL-OLD.

The validity and reliability of the WHOQOL-100 social domain has been established in a number of international non-disease-specific QOL studies of older adults (Bonomi, Patrick, Bushnell & Martin, 2000; Li, Young, Xiao, Zhou & Zhou, 2004; Norhom & Bech, 2001; Power, Bullinger, Harper & the WHOQOL-Group, 1999; Skevington, 1999). In the first psychometric study, Power et al. (1999) found the social domain accounted for 17.1% of the variance in overall QOL and yielded a confirmatory item-to-factor loading of .965. Li et al. report strong correlations between all social domain items. Reliability coefficients for the social domain have ranged from .82 to .87 (Bonomi et al.; Li et al.; Norhom & Bech; Skevington). Social domain scores have also been found to be significantly lower among ill versus well groups (Norhom & Bech; Skevington) and were moderately correlated with the role emotional and social functioning of the SF-36 and the social life/relationships domains of the Seattle Quality of Life Profile (Bonomi et al.), and the social health domain of the Geriatric Quality of Life Index (Li et al.). Finally, Bonomi et al. noted a two-week test-retest correlation coefficient of .88 for the social domain score among chronically ill older adults.

#### Model Variables

The model to be tested in the analysis of the current study consists of two types of variables: independent variables or predictors of QOL and the dependent variable, QOL itself. The predictors of QOL consist of financial resources, perceived health, ADL performance, meaning and purpose in life, emotional types of support that is received or

potentially available for receipt, and the older adult's appraisals of their surrounding environment.

### *Operationalization*

The purported causal features and overall QOL were operationalized using specific items from the WHOQOL-BREF and the WHOQOL-OLD. Below, I provide some discussion on each causal feature and its corresponding item(s). Table 1 provides instrument codes for each question.

#### *Perceived adequacy of Financial Resources*

Income adequacy was captured by way of Facet 18.1 (Question 12) on the WHOQOL-BREF: Have you enough money to meet your needs?

#### *Satisfaction with Health*

Perceived health was captured by way of G4 (Question 2) in the WHOQOL-BREF: How satisfied are you with your health?

#### *Satisfaction with ADL Performance*

The older adult's ability to perform their ADL's was captured by Facet 10.3 (Question 17) of the Physical domain in the WHOQOL-BREF: How satisfied are you with your ability to perform your daily living activities?

#### *Meaning and Purpose in life*

Meaning and purpose in life was captured by Facet 24.2 (Question 6) of the Psychological domain in the WHOQOL-BREF and by Facet 27.3 in the WHOQOL-OLD. Respectively, these are: To what extent do you find your life to be meaningful AND to what extent are you satisfied with your opportunities to continue achieving in life? In this study, then, a more existential than religious view of spirituality is adopted.

In addition, respective composite scale reliability coefficients of .608 and .573 for data set 1 and 2 provided added support for exploring their individual effects.

### *Emotional Support*

Emotional support was conceptualized as a composite score capturing themes of intimacy, companionship and confiding found in the empirical and conceptual literature on QOL and social support. From data set 1, four items (Facet 30.1, 30.2, 30.5, and 30.6) were chosen from the intimacy domain of the WHOQOL-OLD. These respectively are: to what extent do you have opportunities to share your innermost thoughts, to what extent do you feel a sense of companionship in your life, are you satisfied with your opportunities for physical closeness and contact, and how satisfied are you with the level of intimacy in your life? For data set 1, participant scores on each Likert scale item (ranging from 1 to 5) were added together to create a composite scale with a maximum score of 20, and the higher the score, the more positive the perception of support. In contrast, data set 2 included only Facets 15.5 and 15.6 from the WHOQOL-100 social domain, rendering possible a two-item composite with a maximum score of 10. For the four-item composite for data set 1, the  $\alpha$  coefficient value was .888; for the two-item composite for data set 2, the corresponding coefficient value was .796.

### *Appraisals of the Physical Environment*

The older adult's appraisals of the quality of surrounding physical environment were captured using two items: Facet 17.3 (Question 23) and Facet 22.1 (Question 9) of the Environment domain in the WHOQOL-BREF. They included: how satisfied are you with the conditions of your living place and how healthy is your physical environment?

Given the internal reliability coefficients for Facet 17.3 and 22.1 for data set 1 ( $\alpha = .667$ ) and 2 ( $\alpha = .628$ ), their individual effects were explored.

### *Overall Quality of Life*

In order to avoid tautological effects between overall QOL as a total score of domains of QOL on the WHOQOL-100, BREF, or OLD, and because a global measure was considered to be most appropriate, question G1 from the WHOQOL-BREF (How would you rate your quality of life?) was used as the measure of overall QOL.

### *Gender*

Gender was captured by question 1 in the Field Trial survey and in the 'About You' section of the Pilot Study survey.

### *Age*

Age was captured by question 2 in the Field Trial survey and in the 'About You' section of the Pilot Study survey.

Table 1  
WHOQOL-OLD Group Survey Instrument Codes

Variable	Codes
Financial resources Facet 18.1 Q12 BREF	1=not at all, 2=a little, 3=moderately, 4=mostly, 5=completely
Perceived satisfaction with health G4 BREF	1=very dissatisfied, 2=dissatisfied, 3=neither, 4=satisfied, 5=very satisfied
ADL performance F10.3 Q17 BREF	1=very dissatisfied, 2=dissatisfied, 3=neither, 4=satisfied, 5=very satisfied
Meaning in life F24.2 Q6 BREF	1=not at all, 2=a little, 3=a moderate amount, 4=very much, 5=an extreme amount
Purpose in life F27.3 OLD	1=not at all, 2=a little, 3=a moderate amount, 4=mostly, 5=completely
Emotional types of support F30.1 OLD + F30.2 OLD + *F30.5 OLD + *F30.6 OLD  *Pilot composite (Social domain WHOQOL-100)	(30.1) 1=not at all, 2=a little, 3=moderately, 4=mostly, 5=completely (30.2) 1=not at all, 2=a little, 3=a moderate amount, 4=very much, 5=an extreme amount (30.5 & 30.6) 1=very dissatisfied, 2=dissatisfied, 3=neither, 4=satisfied, 5=very satisfied
Physical environment F17.3 Q23 BREF  F22.1 Q9 BREF	1=very dissatisfied, 2=dissatisfied, 3=neither, 4=satisfied, 5=very satisfied 1=not at all, 2=a little, 3=a moderate amount, 4=very much, 5= extremely
Overall QOL G1 BREF	1=very poor, 2=poor, 3=neither, 4=good, 5=very good
Gender Question 1 Survey booklet	1=female 2=male  Gender will be dichotomized into female=1 and male=0; reference group = males
Age Question 1 Survey booklet	Years

### Analysis

Two research questions were posed in this study, the first being, what is the relationship between financial resources, perceived health, emotional support, meaning and purpose in life, and appraisals of the surrounding environment and the overall QOL reported by chronically ill older adults? Additionally, would meaning and purpose in life mediate the effect of perceived health upon overall QOL? Seven hypotheses were posited wherein each causal feature was expected to have a positive direct effect upon overall QOL and perceived health was expected to influence overall QOL vis-à-vis meaning and purpose in life. In order to address these questions and hypotheses, a secondary analysis of the Canadian WHOQOL-OLD Group 2004 Field Trial and 2002 Pilot Study data, sets 1 and 2 respectively, was undertaken using SPSS Version 12.0 and AMOS Version 5.0 software.

#### *Bivariate Analysis*

The strength and direction of the direct relationships between overall QOL and each predictor of interest (financial resources, perceived health and ADL capacity, perceived meaning and purpose in life, emotional support, and the surrounding environment) were calculated using the Pearson Moment Correlation coefficient (Tabachnick & Fidell, 2001). Significant zero-order correlations between age and gender and QOL provided an empirical rationale for their inclusion and exclusion in the multivariate analyses in this study.

#### *Multivariate Analyses*

At the multivariate level, in order to explore the direct effect of each variable on overall QOL and the indirect effect of perceived health, a path analysis was undertaken using AMOS 5.0. The fit of the hypothesized causal paths in the proposed model with

data set 1 and 2 was determined using the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), and the Root Mean Square Error Approximation or the RMSEA (Tabachnick & Fidell, 2001). The GFI is somewhat analogous to the  $R^2$  value in regression as it indicates the percentage of observed or sample covariance explained by model-implied covariance. The AGFI adjusts or corrects the GFI by the number of free model parameters to be estimated (unknowns) relative to the number of unique Field Trial and Pilot Study sample moments (known variances and covariances in each data set). The third index, the RMSEA, reflects average departure or lack of fit in the proposed model, per degree of freedom from sample moments, when compared to a perfect or saturated model that has zero degrees of freedom due to the number of model parameters to be estimated equaling the number of unique sample moments. Cut-off values of .90 or higher for each fit index and less than .05 for the RMSEA indicate an acceptable fit or match between relationships implied by the model and those observed from the two data sets (Tabachnick & Fidell).

#### Practical Issues

A number of practical issues arose in the current study with respect to having an adequate sample size for the proposed analysis and the handling of missing responses.

#### *Sample Size*

Tabachnick and Fidell's (2001) parameters for determining if the sample size for data sets 1 and 2 was large enough to find significant associations were taken into account. Sample size adequacy was determined by the equation,  $n \geq 50 + 8m$ , where  $m$  is the number of predictors of overall QOL, and  $n$  is the actual sample size. If age and gender were found to be significantly correlated with overall QOL and included in

subsequent analyses, in data set 1, the total sample size of 202 would be greater than the minimum required:  $50 + 8(10) = 130$ . In data set 2, the sample size was twice as large ( $n=432$ ). Using Cohen's (1988) method, in order to detect a moderate effect size ( $f^2 = .15$ ) in a model with 10 predictor variables, with a posited power of .80, and an alpha level of .05, subsequent linear interpolations yielded a minimum sample size of 132. Clearly, the sample size for both data set 1 and data set 2 met the criteria.

#### *Missing Data*

For data set 1 and 2, there were missing values scattered throughout cases and variables. In data set 1, there were 44 missing responses pertaining to all variables except gender, age, and financial resources, and in data set 2, there were 51 missing responses pertaining to all variables.

In the current study, missing values for all variables except age and gender were estimated using regression (Tabachnick & Fidell, 2001). Here, cases with complete data generate the first regression equation used to iteratively predict missing values for incomplete cases. Analyses were repeated until predicted values from each regression analysis began to converge, and these convergent predicted scores replaced those missing in both data sets. The latter approach yielded a complete data set for the Field Trial analysis (data set 1  $n = 202$ ). For Pilot Study analysis, with omission of those cases with missing responses for age and gender from data set 2, the final sample size of 420 represented a loss of only 3% of all cases ( $n=432$ ).

In sum, the present study employed a cross-sectional design in which a secondary analysis of survey data collected in the 2004 Canadian WHOQOL-OLD Group Field Trial (data set 1;  $n=202$ ) and the 2002 Canadian WHOQOL-OLD Group Pilot Study

(data set 2; n=420) was undertaken. From data sets 1 and 2, single item indicators were chosen from the WHOQOL-OLD and -BREF, and the parent instrument of the latter – the WHOQOL-100 - for financial resources, health, ADL performance, meaning and purpose in life, and the surrounding physical and home environment. Given that ADL performance was not directly measured in both the Canadian WHOQOL-OLD Group Field Trial and Pilot Study, an item capturing the older adult's perception of satisfaction with performance was chosen. In doing so, it should be recognized that this item is a proxy measure for what will herein referred to as 'ADL performance'. Similarly, older adults' perceptions of their financial resources, overall health, and physical environment were captured; each will herein be referred to as financial resources, perceived health, and the older adult's home and physical environment. From data set 1, a composite index was also created from four items pertaining to emotional support ( $\alpha = .888$ ) from the WHOQOL-OLD intimacy domain; the index from data set 2 contained two items ( $\alpha = .796$ ) from the social domain of the WHOQOL-100. The dependent variable was a non-domain-oriented item capturing the older adult's overall perception of QOL. The research questions and seven hypothesized causal relationships posited in this study were investigated by way of zero-order correlation analyses and an Analysis of Moment Structures. The findings arising from the analysis of data set 1 were further evaluated against data set 2.

Chapter 4 conveys what was found in the analysis of data set 1 and then, data set 2, followed by a comparison of findings between both data sets.

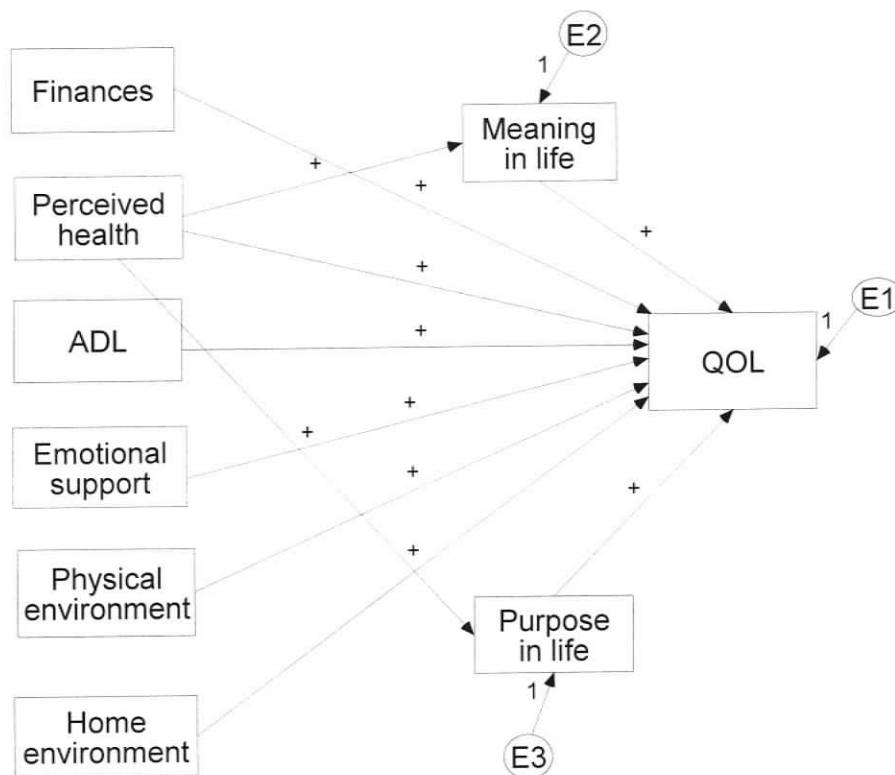
## Chapter 4 FINDINGS

In this study, the hypotheses posited below were empirically tested:

1. The higher the perceived income adequacy, the higher the overall QOL.
2. The higher the satisfaction with health, the higher the overall QOL.
3. The more positive the perception of ADL performance, the higher the overall QOL.
4. Meaning and purpose in life will have a significant positive impact upon overall QOL.
5. The more positive the perception of emotional support, the higher the overall QOL.
6. The more positive the perception of the surrounding environment, the higher the overall QOL.
7. Meaning and purpose will mediate the effect of health satisfaction upon overall QOL.

The proposed model is depicted in Figure 1, reflecting the above hypotheses.

Figure 1. Proposed Causal Model.



Note: Covariances among exogenous variables were freely estimated, but were left out for clarity.

### Sample Characteristics

Descriptive statistics for each variable of interest in this study are summarized in Table 2 for data sets 1 and 2. The skewness statistics listed in column 3 indicate that scores on all variables, with the exception of age, fell into the higher range on each scale but not to an extent that warranted transformation.

Table 2  
*Sample Characteristics*

Variable		Mean (SD)	Range	Skewness
Age	(1)	72.94 (8.54)	60-95	.263
	(2)	74.36 (8.59)	60-99	.150
Finances	(1)	4.14 (.95)	1-5	-.945
	(2)	4.23 (.81)	1-5	-1.095
Health satisfaction	(1)	3.81 (.93)	1-5	-.779
	(2)	4.42 (.94)	1-5	-.565
ADL performance	(1)	4.11 (.83)	1-5	-1.09
	(2)	3.65 (.83)	1-5	-.922
Meaning in life	(1)	3.91 (.77)	1-5	-.765
	(2)	3.63 (.80)	1-5	-.701
Purpose in life	(1)	3.77 (1.10)	1-5	-.982
	(2)	3.63 (.83)	1-5	-.499
Emotional support	(1)	14.37 (3.91)	4-20	-.448
	(2)	7.36 (1.10)	2-10	-.479
Satisfaction with Home	(1)	4.53 (.68)	1-5	-1.71
	(2)	4.42 (.63)	1-5	-1.03
Physical Environment	(1)	4.11 (.74)	1-5	-.555
	(2)	3.95 (.63)	1-5	-.724
QOL	(1)	4.29 (.69)	2-5	-.621
	(2)	4.42 (.64)	1-5	-.971

Note. 1 = WHOQOL OLD Group 2004 Canadian Field Trial data (N = 202)  
 2 = WHOQOL-OLD Group 2002 Canadian Pilot Study data (N = 420)

### Bivariate Analysis

The Pearson Product Moment Correlation Coefficient was used to identify statistically significant relationships between overall QOL and its eight independent variables.

As shown in Table 3, in data set 1, all eight independent variables of interest had statistically significant, strong and positive relationships with overall QOL at the  $p < .001$  level. The two strongest correlations with overall QOL were perceived health ( $r = .611$ ) and ADL performance ( $r = .591$ ); emotional support ( $r = .383$ ) had the weakest correlation with overall QOL.

In this study, the non-significant zero-order correlations between age and overall QOL ( $r = -.014$ ,  $p = .398$ ) and gender ( $r = -.077$ ,  $p = .440$ ) and overall QOL provided an empirical rationale for excluding them in the multivariate analysis of data set 1 and the proposed model, a conclusion supported by the existing empirical literature on aging adults.

Table 3  
*Correlation Matrix (data set 1)*

	Gender	Home	Age	Emotsupp	Health	Finances	Physenv	ADL	Purpose	Meaning	QOL
Gender	1.000										
Home	-.017	1.000									
Age	.011	.174*	1.000								
Emotsupp	-.158*	.319**	.042	1.000							
Health	-.005	.319**	-.040	.264**	1.000						
Finances	-.074	.544**	.199**	.234**	.293**	1.000					
Physenv	-.039	.506**	-.024	.231**	.312**	.424**	1.000				
ADL	.002	.428**	-.174*	.349**	.687**	.380**	.398**	1.000			
Purpose	-.097	.362**	-.109	.345**	.545**	.322**	.437**	.546**	1.000		
Meaning	.107	.254**	-.033	.354**	.280**	.194**	.394**	.324**	.463**	1.000	
QOL	-.077	.449**	-.014	.383**	.611**	.470**	.476**	.591**	.556**	.436**	1.000

Note: \*p<.05. \*\*p<.01. \*\*\*p<.001.

## Multivariate Analysis

Prior to the intended path analysis, a simultaneous multiple regression analysis was conducted using SPSS version 12.0 to determine what might be expected in terms of the hypothesized mediating effects shown in Figure 1 (see Table 4). For data set 1, the model containing all eight independent variables was statistically significant ( $F= 31.974$ , 8 df,  $p<.001$ ). The patterns of results for all eight predictors indicate that the hypothesized model is unlikely to fit. In particular, the non-significant direct effects of ADL performance, emotional support, and the physical and home environment indicated either that they are not related to QOL or their relationship is mediated by another variable. The non-significant direct effect of purpose in life did not provide preliminary evidence of its mediating role in relation to the remaining predictors.

Table 4  
*Summary of Multiple Regression Analysis (data set 1; N = 202)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Constant	.892	.259	
Finances**	.133	.043	.184
Perceived health***	.231	.049	.313
ADL performance	.088	.059	.107
Meaning in life*	.125	.050	.140
Purpose in life	.066	.040	.106
Emotional support	.017	.009	.095
Surrounding physical environment	.106	.055	.114
Home environment	.042	.063	.042

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . Model  $R^2 = .568$ .

### *Path Analysis*

A path analysis was conducted using AMOS version 5.0 to evaluate the hypothesized model depicted in Figure 1 wherein the observed exogenous variables consisted of financial resources, perceived health and ADL performance, emotional support, and appraisals of the home and surrounding physical environment. Observed exogenous variables were free to covary with one another. The three endogenous variables consisted of the two mediators - meaning and purpose in life, and overall QOL. The findings from the path analysis are presented first for data set 1. For the purposes of validating the field trial model, comparisons will then be made between the findings arising from data set 1 with those from data set 2. In both path analyses, standardized path coefficient values are reported.

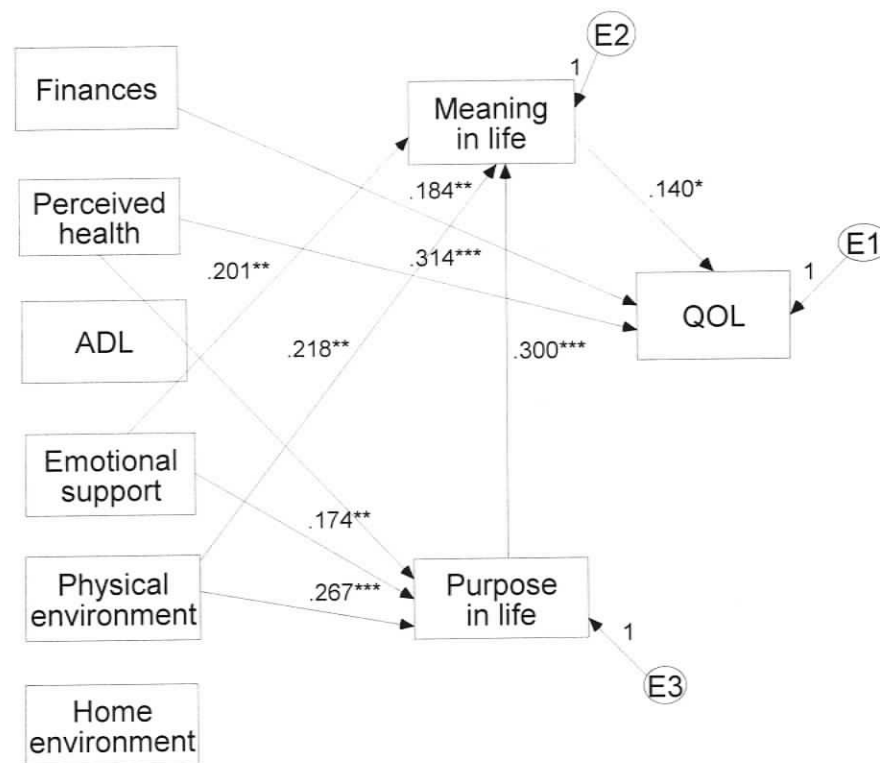
#### *Field Trial Findings (data set 1)*

The model depicted in Figure 1 yielded a GFI of .898, an AGFI of .555, and a RMSEA of .194. Modification indices suggested an alternative model as shown in Figure 2, which yielded a GFI of .99, an AGFI of .94, and a RMSEA of .035, each meeting the cut-off values for acceptable fit - .90, .90, and .05 respectively.

*Hypothesized direct effects.* In the model shown below in Figure 2, as was hypothesized, financial resources ( $\beta = .184, p < .001$ ), perceived health ( $\beta = .314, p < .001$ ), and meaning in life ( $\beta = .140, p = .011$ ) had significant and positive effects upon overall QOL. These findings indicate that the more positive the perception of health, financial resources, and meaning in life, the higher the overall QOL. Overall, then, empirical support was found for hypotheses 1 and 2; however, only partial support arose for hypothesis 4. Perceptions of ADL performance ( $\beta = .107, p = .121$ ) and the surrounding

physical ( $\beta = .114$ ,  $p = .055$ ) and home environment ( $\beta = .042$ ,  $p = .496$ ) did not make a significant contribution to the model. The three significant predictors of overall QOL, namely financial resources, perceived health, and meaning in life explained 56.8% of its variance.

Figure 2. Canadian Field Trial Model (data set 1).



Note: Covariances among exogenous variables were freely estimated, but left out for clarity. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Hypothesized indirect effects.* In this study, there were two proposed mediators of interest, meaning and purpose in life. Both were hypothesized to mediate the effect of perceived health upon overall QOL. As shown in Figure 2, partial empirical support was

found for a mediating model of overall QOL. In particular, perceived health had significant indirect effect upon overall QOL vis-à-vis purpose in life ( $\beta = .416, p < .001$ ). Given that the direct effect of perceived health upon meaning was not significantly different from zero ( $\beta = -.005, p = .945$ ), no empirical support was found for the mediating role of meaning in life.

*Additional indirect effects.* Though the focus of this study was on the indirect effect of perceived health upon overall QOL, meaning and purpose acted as mediators to a number of other observed exogenous variables. In particular, meaning in life mediated the impact of emotional support ( $\beta = .201, p = .002$ ) and the surrounding physical environment ( $\beta = .218, p = .001$ ) upon overall QOL. Purpose in life played a mediating role for emotional support ( $\beta = .174, p = .002$ ) and the physical environment ( $\beta = .267, p < .001$ ) alone. One other unanticipated finding of interest is that purpose in life had an indirect effect upon overall QOL through meaning in life ( $\beta = .300, p < .001$ ). The squared mean correlation value for meaning in life was 29.5% and for purpose in life, 40.3%.

The implied direct and indirect effects found in data set 1 are summarized in tables 5 and 6 below.

Table 5  
*Standardized Direct Effects (data set 1)*

	Home	Emotsupp	Health	Finances	Physenv	ADL	Purpose	Meaning
Purpose	.000	.174	.416	.000	.267	.000	.000	.000
Meaning	.000	.201	-.005	.000	.218	.000	.300	.000
QOL	.042	.095	.314	.184	.114	.107	.106	.140

Table 6  
*Standardized Indirect Effects (data set 1)*

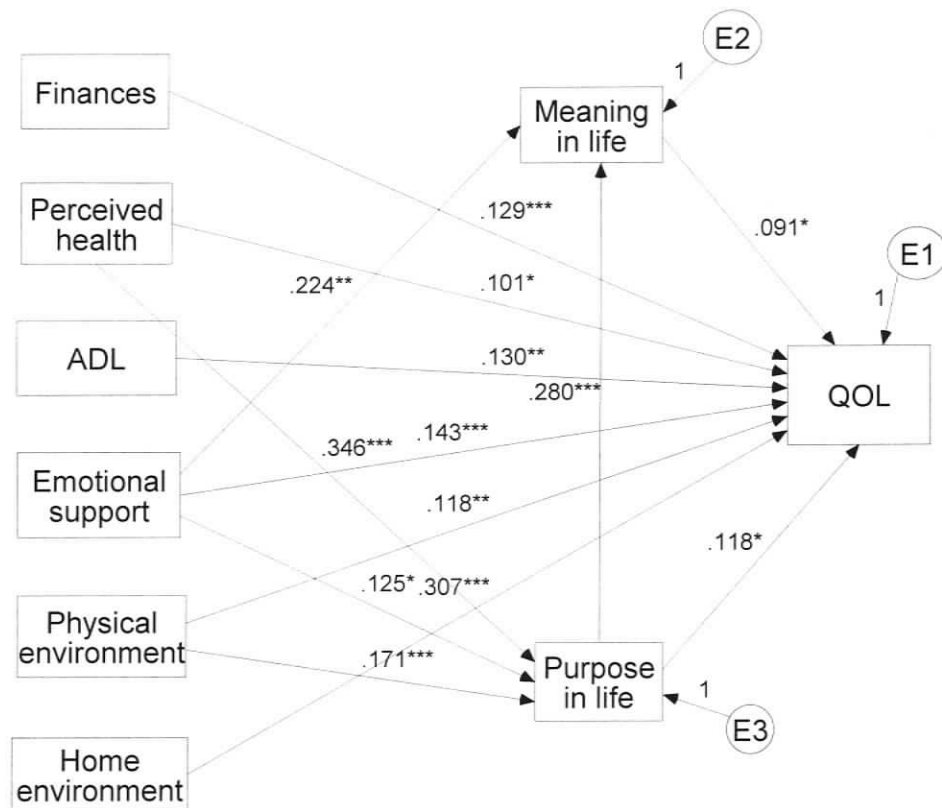
	Home	Emotsupp	Health	Finances	Physenv	ADL	Purpose	Meaning
Purpose	.000	.000	.000	.000	.000	.000	.000	.000
Meaning	.000	.052	.125	.000	.080	.000	.000	.000
QOL	.000	.054	.061	.000	.070	.000	.042	.000

*Pilot Study Findings (data set 2)*

The second part of this study consisted of validating the model with a different data set. A further empirical test of fit by way of a second path analysis of data set 2 yielded a GFI of .977, an AGFI of .831, and a RMSEA of .126, and of these, only the GFI met the cut-off criteria specified on page 79.

*Direct effects.* In the second path analysis, as shown in Figure 3 below, several points of concordance were found between the structural path coefficients generated from data set 1 and those from data set 2. As can be seen from an illustration of the significant structural paths illustrated in Figure 3, financial resources ( $\beta = .129, p < .001$ ), perceived health ( $\beta = .101, p = .040$ ), and meaning in life ( $\beta = .091, p = .020$ ) had positive direct effects upon overall QOL.

Figure 3. Canadian Pilot Study Model (data set 2).



Note: Covariances among exogenous variables were freely estimated, but left out for clarity. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

Several differences from the first data set were observed in the model shown in Figure 3 for the second data set. All other remaining predictors had statistically significant, positive direct effects upon overall QOL. Five additional structural paths from ADL performance ( $\beta = .130$ ,  $p = .004$ ), emotional support ( $\beta = .143$ ,  $p < .001$ ), purpose in life ( $\beta = .118$ ,  $p = .004$ ), the surrounding physical ( $\beta = .118$ ,  $p = .004$ ) and home ( $\beta = .307$ ,  $p < .001$ ) environment to overall QOL were significant. Overall, the analysis of data set 2

yielded empirical support for all six hypotheses in this study. The path model shown in Figure 3 explained 50.5% of the variance in overall QOL perceptions, a value slightly less than the previous model using data set 1.

*Indirect effects.* With respect to the mediating role of meaning and purpose in life for perceived health, the findings from data set 1 were replicated in that perceived health was also mediated by purpose ( $\beta = .346, p < .001$ ) alone; the structural path from health to meaning did not attain statistical significance ( $\beta = .097, p = .053$ ).

For the additional indirect effects arising in the pilot study analysis, only purpose in life mediated the effect of the surrounding physical environment ( $\beta = .171, p < .001$ ). Two findings bearing similarity to those of data set 1 consisted of purpose ( $\beta = .280, p < .001$ ) and emotional support ( $\beta = .224, p < .001$ ) being mediated by meaning, and emotional support being mediated by purpose ( $\beta = .125, p = .006$ ). In the analysis of data set 2, the squared multiple correlations for meaning and purpose in life were .237 and .244 respectively.

The direct and indirect effects yielded in the analysis of data set 2 are summarized below in Tables 7 and 8.

Table 7

*Standardized Direct Effects (data set 2)*

	Home	Emotsupp	Health	Finances	Physenv	ADL	Purpose	Meaning
Purpose	.000	.125	.346	.000	.171	.000	.000	.000
Meaning	.000	.224	.097	.000	.060	.000	.280	.000
QOL	.307	.143	.101	.129	.118	.130	.118	.091

Table 8  
*Standardized Indirect Effects (data set 2)*

	Home	Emotsupp	Health	Finances	Physenv	ADL	Purpose	Meaning
Purpose	.000	.000	.000	.000	.000	.000	.000	.000
Meaning	.000	.035	.097	.000	.048	.000	.000	.000
QOL	.000	.038	.058	.000	.030	.000	.026	.000

#### Summary of Support for Research Hypotheses

With respect to data set 1, more positive perceptions of the adequacy of financial resources also predicted higher overall QOL, as did perceived health, lending empirical support to Hypotheses 1 and 2. Though ADL performance was strongly, positively, and significantly correlated with perceived health, it did not have a significant direct or indirect effect upon overall QOL, as hypothesized in Hypothesis 3. Partial empirical support was found for Hypothesis 4 in that meaning in life alone had a significant and positive direct effect upon overall QOL.

Additionally, no empirical support was found for Hypothesis 5 in that emotional support did not have a significant direct effect on overall QOL. Rather, the impact of emotional support upon overall QOL was indirect, manifesting through structural paths leading to meaning and purpose in life. The preliminary findings of this study indicate that having opportunities for companionship, confiding, physical closeness, and intimacy bring a heightened sense of meaning to life that, in turn, bolsters overall QOL. As was noted with health satisfaction, the direct and significant path between emotional support and purpose in life further supports a mediated model.

Given the lack of a significant relationship between the home environment and the significant, indirect influence of the surrounding physical environment on overall QOL, no empirical support was found for Hypothesis 6. The significant causal pathways indicated that more positive perceptions of the physical environment brought a greater sense of purpose in life. As was found with emotional support, having greater perceived purpose in life was associated with higher levels of meaning and in turn, overall QOL.

With regard to Hypothesis 7, the findings from data set 1 indicate that although health satisfaction had a direct effect upon purpose in life, a similar pattern was not found for meaning in life. Preliminary empirical support was, instead, found for a mediated model wherein meaning had significant and direct conceptual ties with purpose, and not health satisfaction. As shown in Figure 2, then, more positive perceptions of health heightened older adults' sense of purpose that, in turn, strengthened their perceptions of meaning in life.

In the validation analysis, when the model arising from data set 1 was further evaluated against data set 2, as shown in Figure 3, further empirical support was found for Hypotheses 1 and 2, partial support for Hypothesis 4 in relation to meaning in life, and an added structural path between purpose and meaning. Points of discordance pertained to empirical support arising for Hypothesis 3, 4 in relation to purpose in life, and Hypothesis 5 and 6, indicating that the more positive the perception of ADL performance, purpose in life, emotional support, and the surrounding physical and home environment, the higher the overall QOL. Overall, then, the findings from data set 2 had both consistent and inconsistent aspects with those from data set 1, resulting in a final model with additional structural paths that yielded neither an adjusted goodness of fit, nor

a RMSEA of less than .05. It should be noted that at least some of the differences in findings between data sets 1 and 2 are likely due to differential sample sizes.

## Chapter 5 DISCUSSION

The purpose of this study was to develop and test an empirically-based model of QOL wherein overall QOL was the outcome; its predictors were financial resources, perceived health and ADL performance, two aspects of spirituality - meaning and purpose in life, emotional support, and the older adult's home and surrounding physical environment. Each of these independent variables was expected to have a significant positive direct effect upon overall QOL. In addition, meaning and purpose in life were expected to mediate the effect of perceived health upon overall QOL.

As summarized in Chapter 4, the findings of this study provided partial empirical support for the hypotheses. The findings of this study are discussed in relation to the existing empirical literature on older adults. The conceptual literature is also considered in an attempt to interpret these findings in terms of substantive significance; thereafter, the broader conceptual implications of this study in relation to QOL modeling will be addressed.

### Demographics and Finances

Age and gender were not included in the path analyses undertaken in this study. In both data sets 1 and 2, financial resources had a significant and positive direct effect upon overall QOL, lending support to the findings of Farquhar (1995) and Fisher (1995) that income adequacy plays a salient role in bolstering the QOL of older adults. The findings of this study lend credence to Zhan's (1992) contention that older adults' subjective appraisals of their financial resources need be considered in QOL research. Annual income has also played a non-significant role in three studies (Bowling et al., 2002; Raphael et al., 1997b; Wilder, 1995).

### Health-Related Variables

Perceived health had a significant effect on overall QOL in both data sets 1 and 2, lending support for hypothesis 2 and indicating that more positive perceptions of health bolster perceptions of overall QOL. Similar findings have emerged in the empirical literature pertaining to older adults (Bowling et al., 2003; Farquhar, 1995; Fisher, 1995; Hapshe, 1994; Hilleras et al., 2001; Raphael et al., 1997b).

Much evidence exists that higher ADL performance is a significant and positive predictor of QOL among older adults (Bowling et al., 2003; Cowan et al., 1992; Farquhar, 1995; Hellstrom & Hallberg, 2001; Hilleras et al., 2001; Nesbitt & Heidrich, 2000; Sarvimaki & Stenbock-Hult, 2000; Tseng & Wang, 2001; Zissi et al., 1998). In this study, despite finding a strong, positive association between perceived health and ADL performance, evidence to the contrary was found in the multivariate analysis of data set 1. Though one might attribute the non-significant role of ADL performance to the absence of a direct measure, in data set 2, it did have a significant and positive direct effect upon overall QOL.

### Emotional Support

Among the few studies exploring the role of all-source emotional support, whether received or perceived, emotional support had a beneficial effect on the QOL of older adults (Kleinpell & Ferrans, 2002; Tang et al., 2004; Tseng & Wang, 2001). Additionally, in one of the few longitudinal studies, Courtens et al. (1996) found that, over time, all-source emotional support strongly and positively predicted QOL among older adults with cancer.

In data set 1, emotional support did not have a significant direct effect upon overall QOL as hypothesized; rather, it had an indirect effect through the two proposed mediating variables - meaning and purpose in life. The indirect effects of emotional support were replicated with data set 2. With regard to purpose in life, it may be that older adults perceive their opportunities to continue achieving in life in relation to those with whom they have a positive emotional connection. Erickson (1968) and Fisher (1995) allude to these manifestations as generative activities and goals. Companions, confidantes and intimate ties may also instill within the older adult a desire or an impetus to be actively engaged in life. In a similar vein, having someone with whom older adults can feel physically close and share their innermost thoughts is analogous to meaningful existence, as suggested by Sarvimaki and Stenbock-Hult (2000).

The findings of this study in relation to emotional support are salient for several reasons. First and foremost, emotional connections are not simply social ties – closeness, intimacy, confiding and companionship may have deeper and perhaps even spiritual connections. While other empirical scholars have tended to focus on direct effects alone, the findings of this study provide greater conceptual clarity by elucidating how emotional support influences QOL. In particular, emotional connections are beneficial to older adults because they are part of a meaningful existence, and purposive goals and activities.

#### Physical Environment

The findings from data sets 1 and 2 indicate that the older adult's surrounding physical environment plays a significant role in QOL appraisals. However, the mechanisms of this effect differed. In data set 1, the effect of the physical environment was indirect in that older adults' positive perceptions of the latter enhanced the meaning of their lives

and their sense of purpose. In contrast, in data set 2, perceptions of the physical environment had both a significant, positive direct effect upon overall QOL and an indirect effect through purpose in life. The indirect effect of the physical environment through purpose in life lends further support to Stuijbergen et al.'s (2000) claim that residing in an environment with few barriers to activity bolsters the QOL of older adults. A healthy physical environment may be one in which opportunities to continue to achieve in life are abundant. Living in a healthy environment was also meaningful to older adults; this effect, however, was not replicated in data set 2.

Overall, the direct effects emerging in data set 2 more closely align with those of previous empirical works pertaining to older adults (Bowling et al., 2002; Farquhar, 1995; Fisher, 1995; Tang et al., 2004). As was noted with emotional support, the replicated indirect effect of the physical environment does, however, provide some clarity around its functional role in QOL appraisals.

#### Meaning and Purpose in Life

With respect to hypothesis 4, two aspects of spirituality, namely meaning and purpose in life, were expected to have a direct, positive effect upon overall QOL and to mediate the effect of health satisfaction upon overall QOL. In data sets 1 and 2, as was noted by Tang et al. (2004), meaning in life had a significant and positive direct effect upon overall QOL; however, only in data set 2 did a similar finding emerge for purpose in life. As such, only partial empirical support was found for hypothesis 4. The replicated significance of meaning lends further support to the findings of Brady et al. (1999) that meaning had a significant, direct influence upon QOL.

As was also noted by Raphael et al. (1997b), perceived health had a direct positive effect upon purpose in life, a finding replicated in this study that provides support for its mediating role in QOL appraisals. Fisher (1995) has long conceived of continued opportunities to achieve as a higher order need for successful aging in which attaining good health is a precursor. In Sarvimaki and Stenbock-Hult's (2000) causal model, subjective health was a moderate and positive predictor of perceived meaning in life. In data sets 1, however, the structural path from perceived health to meaning in life was not statistically significant and in data set 2, further support did not emerge for its mediating role.

Another key finding of this study noted in data set 2 is that opportunities to continue achieving offer greater meaning to the lives of older adults. The significance of this intermediary structural path indicates that in order for purposive goals and activities to have an impact upon QOL, they need also be meaningful to the older adult. Farquhar (1995) and Hilleras et al. (2001) both found meaningful activity to be a significant and positive predictor of QOL among older adults. The link between purpose and meaning also indicates that a propensity to forge new goals and to pursue activities may serve as a psychological resource, impetus or source of motivation for older adults to find some semblance of meaning in their lives (Antonovsky, 1978; Fife, 1994; Sarvimaki & Stenbock-Hult, 2000). Thus, QOL appraisals may reflect older adults' perceptions of meaningful possibilities in life (Lundh & Nolan, 1996; O'Boyle, 1997). Though Fisher (1995) believes that perceptions of past achievements influence QOL, the findings of this study clarify the causal pathways through which ongoing opportunity influences overall QOL.

### Unique Findings

Given the large number of existing QOL models, it seems prudent to ask: what is unique about the Canadian Field Trial Model? Clearly, based upon the discussion of the findings for each predictor variable, the direct effects of perceived health, finances, and meaning in life, of which all were replicated in the Canadian Pilot Model (see Figure 3), have been reported in other QOL studies of older adults. Classic empirical works of QOL among adults of all ages have also yielded models wherein perceived health and financial resources have a direct effect upon QOL (Andrews & Withey, 1976; Cantril, 1965; Campbell et al., 1976; Flanagan, 1978). Further to this, others have chosen global QOL as an outcome variable (Bowling et al., 2002; Cantril, 1965; Campbell et al., 1976; Cowan et al., 1992; Farquhar, 1995; Stuifbergen et al., 2000; Tsang et al., 2004; Tseng & Wang, 2001; Wilder, 1995).

Unique to this study are the intermediary pathways pertaining to the two spiritual variables – meaning and purpose in life. In particular, Figures 2 and 3 depict a mediated model of QOL wherein purpose in life indirectly influences overall QOL through its direct linkage with meaning in life. Spirituality has been conceived of as multidimensional (Atkin, 2000; Bartlett, et al., 2003; Brady, et al., 1999; David, 2001; Fry & Reinert, 1999; Gioiella, et al., 1998; Katsuno, 2003; Raholm, 2002; Robinson-Smith, 2003; Ross, 1995; Tate & Forcheimer, 2002). Had only one dimension of spirituality been used in this study, the added structural path from purpose to meaning would not have been identified. The latter finding implies a causal order between two dimensions of spirituality and provides preliminary evidence of how multidimensionality may manifest at the empirical level.

The inclusion of two dimensions of spirituality yielded two mediated models linking health, emotional support, and the physical environment to purpose and meaning in life. The only intermediary path not replicated pertained to the physical environment in relation to meaning in life (see Figures 2 and 3). The mediating effects yielded in this study are unique in that existing models simply draw attention to the direct effect of purpose in life (Andrews & Withey, 1976; Flanagan, 1978; Tang et al., 2003), the physical environment (Andrews & Withey, 1976; Bowling et al., 2002; Campbell et al., 1976; Cantril, 1965; Farquhar, 1995; Fisher, 1995; Stuijbergen et al., 2000; Tang et al., 2004), and emotional support alone (Courtens et al., 1996) or as part of a composite social support score (Kleinpell & Ferrans, 2002; Tang et al., 2004; Tseng & Wang, 2001). Otherwise, Sarvimaki and Stenbock-Hult (2000) have linked contact with family directly to a precursor to QOL – psychological well-being.

Though the WHOQOL-OLD Group (2002) conceived of spirituality as a dimension of QOL itself, the findings of this study extend the role of spirituality to a causal realm. Additionally, empirical scholars of aging have focused on the mediating effects of autonomy, self-concept, cultural practices, and appraisals of personal resources (Burckhardt, 1985; Leventhal et al., 1997; Ormel et al., 2001; Zissi et al., 1998). Cowan et al. (1992) suggested a mediated model in which global QOL was an outcome variable, however, these authors provide empirical support for the mediating effects of perceived control. In this respect, the Canadian Field Trial Model (see Figure 2) offers a unique conceptualization of non-disease-specific QOL among older adults wherein spirituality played a salient mediating role.

### Conceptual Implications

The findings of this study offer a number of interesting conceptual implications, the first being that QOL is a complex, multifaceted concept that is dependent on more than health alone. Path models of QOL are offered that separate cause from concept. Additionally, the global and complex nature of such appraisals was captured by way of the significant physical, emotional, environmental, and spiritual paths or connections that, directly and indirectly, contributed to overall QOL. A broad conceptualization of QOL was used as called for by Lawton (1991) and Hilleras et al. (2001). Despite the morose portrait of aging with chronic illness painted in Chapter 1, it seems equally prudent to point out that positively skewed scores on QOL and each mediating variable in this study suggest old age offers meaning, purpose, and QOL for many people.

The findings of this study, as a whole, support the WHOQOL-OLD definition of QOL (WHOQOL-OLD Group, 2002). Though ADL performance and the home environment played a significant role as predictors of QOL in data set 2 alone, the replicated findings of this study indicate that the overall QOL of older adults is affected in complex ways by financial resources, perceptions of health, spirituality, and emotional connectedness. In both data sets, the latter four variables had a significant, positive association with the older adult's surrounding physical environment, giving further credence to the WHOQOL-OLD Group's emphasis on relationships salient to the environment.

While attention has been drawn to the presence of empirical support for the WHOQOL-OLD Group's (2002) perspective, it is equally prudent to acknowledge that the definition put forth and the data analyzed in this study situate QOL and what influences it within a subjective frame of reference. At present, there is much debate as

to whether objective or subjective indicators, or a combination of both, need be utilized in QOL research (Benner, 1985; Brown & Gordon, 1999; Browne et al., 1997; Bernheim, 1999; Carr et al., 2001; Cummins, 1996; Dijkers, 2003; Felce & Perry, 1995; Fryback, 2003; Furher, 2000; Lawton, 1991; Lundh & Nolan, 1996; O'Boyle, 1997; Parse, 1994; Prutkin & Feinstein, 2002; Pukrop, 2003; Sullivan, 2003). With the exception of age, the influence of objective indicators was not addressed in this study, a case in point being ADL performance. However, in doing so, the position taken is not one of discounting the importance or relevance of objective indicators, nor is the use of subjective indicators being offered as a prescription for inquiry *proper*. Given the lack of consensus around operationalizing QOL research variables, the adoption of primarily subjective indicators in this study is but one approach to capturing QOL and what may influence it.

Another conceptual implication arising from the findings of this study concerns the sample-dependent nature of post-hoc models. The first stage of analysis in this study consisted of testing and refining the proposed causal model depicted in Figure 1 using data set 1. The refined model depicted in Figure 2 was further evaluated against a second data set consisting of an independent sample of 420 older adults in a subsequent path analysis that yielded a low AGFI and high RMSEA. In the second path analysis, new empirical support emerged for adding structural paths from ADL performance, emotional support, purpose, and each environmental variable to overall QOL itself. Additionally, meaning in life did not play a significant mediating role for the surrounding physical environment.

The sample-dependent nature of post-hoc models limits what the researcher can come to know about what influences QOL and it draws attention to the arguments being made

by methods scholars about the heterogeneity of meaning (Benner, 1985; Hatton, 1998; Parse, 1994; Pukrop, 2003). That is, causal features can mean different things to different people, and what older adults place direct emphasis upon may very well differ when group comparisons are made. In effect, what counts in relation to QOL may be weighted differently and may relate in idiosyncratic ways, manifesting empirically as disparities in the significance of structural paths among causal models (Bernheim, 1999; Cummins, 1996). For example, emotional support had an indirect effect upon overall QOL in data set 1; in data set 2, direct effects were found. Similarly, meaning in life mediated the impact of the surrounding physical environment in data set 1, not 2. Given the arguments offered by some conceptual and methodological scholars that there is no one way to model QOL and what is of central value rests with the individual, points of difference can be expected to emerge between the findings arising from the two independent data sets. Hence, it is not reasonable to expect total congruence.

With post-hoc models, greater caution is required with regard to generalizing causal claims. Given that the findings of this study will be used to offer direction for nursing practice, attention will be given only to those causal relationships found to be significant in both data sets 1 and 2. Having two data sets providing support for causal claims is a stronger position from which to suggest practice implications. The next area of discussion, then, pertains to how the findings of this study can inform nursing practice.

#### Practice Implications

The CGNA's (1996) practice mandate in which the facilitation and enhancement of QOL is an integral part of nursing practice was outlined in Chapter 1. To achieve this objective, interdisciplinary collaboration, and informed assessment, planning and

intervention were deemed essential. Another salient role was that of client advocate, one in which incorporating the client's life experiences, goals, beliefs and values in the planning of care was requisite. A holistic approach to QOL care was also suggested wherein informed assessments were deemed as those comprehensively focussing on physical health, psychological comfort, environmental adaptation, social relationships, and spirituality. These dimensions of assessment also serve as foci for intervention. In keeping with the CGNA framework, I will tap into my own experience as a practitioner, clinical consultant and educator in hospital and community settings to apply the findings of this study to nursing practice.

In this study, health played a pivotal role in shaping the overall QOL of older adults. Considerable attention has been given to the effect of health upon QOL. In this study, not only did health have a direct impact upon overall QOL, it was found to enhance participants' sense of purpose in life. Understanding the impact of health, then, lies beyond the older adult's direct perceptions of their health. Older adults with more positive perceptions of their overall health may also perceive themselves as being well enough to pursue activities and goals; hence, positive beliefs about one's health may be an enabling mechanism. Hence, it would be prudent to explore what, in particular, dampens opportunities to continue achieving. That is, does severity or numbers of chronic illnesses or perhaps, treatment regimens dampen achievement in old age?

The occupational therapist can work with the nurse to assess the older adult's health status, goals and current activity levels. Both practitioners could work in collaboration with the older adult to identify and develop desirable and attainable goals and activities. Given the significant causal link between perceived health and purpose in life, it would

be logical to further explore the client's openness to participation in health promotion programs in the community. I have referred clients to fitness activities including aerobics, Tai Chi, balance training, walking clubs, and daycare programs that provide ongoing support for managing chronic illnesses such as diabetes and asthma.

Given the direct impact of adequacy of financial resources on overall QOL in this study, nurses could work collaboratively with social workers to assess the older adult's financial situation. As a preliminary step, nurses can identify clients who perceive their financial situation to be precarious and then, make a referral to a social worker. Timely referrals upon admission would help determine the older adult's eligibility for support and the options available to them based upon their current needs. Nurses can also do some initial groundwork with respect to determining the older adult's knowledge of agencies such as the Department of Veterans Affairs, the Red Cross and extended benefit plans. Insight into the older adult's financial situation could be garnered by identifying existing sources of income, as well as perceived shortfalls and the impact these currently have upon health and well-being. In community settings, long-term care case managers conduct these types of assessments.

In this study, purpose in life was affected by emotional support and it may be that all-source confidantes, companions and intimate social ties serve as outlets for generative and peer-related activities and goals. Alternatively, the people with whom older adults have a positive emotional connection may motivate and encourage them to be active and to set goals for themselves. Older adults who have the foundation of positive emotional connections may, then, simply strive to achieve more in life. For older adults with fewer emotional connections, nurses can work with occupational therapists to identify seniors'

agencies where participant members could function as intermediaries, introducing their more isolated peer to others and encouraging them to become members. In British Columbia, other outreach services include peer visitation and telephone support programs. In my own practice, pets and neighboring pastoral staff and congregation members have afforded, for more isolated seniors, opportunities to go out and interact with another animate being. Connecting, as something to look forward to, is a lived experience drawing attention to the significant structural path between emotional support and purpose in life.

In this study, having positive emotional connections also enhanced perceived meaning in life - a psychological resource that Antonovsky (1978) believes can help people overcome the problems in life with which they struggle. From my own practice experience, key support persons to whom the older adult feels emotionally connected are not only sources of encouragement and outlets for activity and goals, they are also sounding boards, and offer advice and strategies for managing chronic illness. The findings of this study may indicate that having someone with whom older adults can share their struggles is far more meaningful than going through them alone. The added link between emotional support and meaning provides empirical evidence of the two-pronged function of emotional support. In light of this, involving key support persons from the older adult's informal support network in the planning of activities and goals, and for ongoing support and encouragement may help bolster overall QOL. Forging new and meaningful ties among older adults with few emotional connections would be equally prudent.

A possible hindrance to purposive goals and activities identified in this study was that of living in an unhealthy environment. Older adults living in unhealthy physical environments also perceived that their lives had little meaning. Given these findings and the broad nature of the term 'healthy physical environment', it seems prudent to recommend that nurses liaise and work with occupational and physiotherapists with regard to assessing the older adult's surrounding physical environment and identifying, with them, aspects found to be unhealthy or undesirable. For example, are there threats to the client's physical safety such as crime, poor lighting, uneven pavement, or stairs and steps that are hard to negotiate? Are there reliable neighbors to call on in a time of need? Is the surrounding area lacking in conveniences and outlets for leisure or shopping? In my own practice experience, ameliorative interventions in relation to the surrounding physical environment have included changes in foot wear, extra lighting, portable life-link systems, taxi-saver tickets and handy-dart passes, and referrals to neighborhood watch programs and delivery services.

Occupational therapists and nurses can also act as advocates with regard to making recommendations to strata or city council members about physical barriers in the older adult's surrounding physical environment. Nurses can also collaborate with social workers or long-term case managers to explore alternate living environments that have fewer barriers, if this is something the older adult would desire or see as feasible.

The mediated model arising from the findings of this study indicates that assessments and interventions meant to enhance purpose in life could make older adults' lives more meaningful. Hence, there may be ripple effects when forging emotional connections and reducing physical barriers in the surrounding environment. The added structural path

from purpose to meaning also suggests that while being active or pursuing goals may foster an ongoing sense of achievement in old age, their positive influence upon overall QOL could fall short if they are not meaningful. In this study, being able to share one's innermost thoughts and having companionship held significant meaning for older adults. In addition to helping older adults forge meaningful emotional connections, nurses and occupational therapists can work with them to design structured activity plans that are meaningful. Community activity aides in neighboring agencies could also monitor the progress and concerns of the older adult. Role losses in late life stemming from retirement or the passing of significant others create a need for new sources of occupation, underscoring the importance of volitional activity.

The areas of assessment and intervention offered in this study lend support to the need for collaborative multidisciplinary practice in hospital and community settings where client and practitioner expertise is pooled. Nurses, as client advocates, can facilitate the sharing of expertise, an approach requisite to informed and comprehensive assessments, planning and intervention. Factors that put seniors at risk for low QOL have also been identified. Though the direction offered in regard to collaborative clinical practice is not directly related to the findings of this study, these areas of practice have some empirical rationale arising from replicated findings and align with the nursing practice mandate set forth by the CGNA (1996).

#### Limitations of the Research

In addition to having adequate statistical power in this study, one other major strength lies in the use of two independent survey data sets to test the causal model of QOL being proposed. The findings of this study indicate that the research hypotheses received far

greater empirical support with the Pilot study data (set 2), manifesting as the significant direct structural paths from ADL performance, the home environment, emotional support, and purpose to QOL not found in the analysis of the Field Trial data. These discrepancies may, in part, be due to having twice as many participants in the Pilot Study. That is, having a large sample size makes it is easier to detect significant effects in a causal model or for that matter, to reject a model. An alternative explanation for the differences in findings between the two data sets, as a limitation of this study, is that post-hoc models are, to a certain degree, sample-dependent. In a practical sense, this means that the Field Trial model shown in Figure 2 was created based on the uniqueness of its parent data set; hence, it is not a blueprint for Pilot Study participant QOL. Conceptual QOL scholars have attributed this phenomenon to the heterogeneity of meaning.

Another key limitation of this study is that while data set 1 used a random sample of older adults in British Columbia, data set 2 used a convenience sample, and this may have introduced some degree of bias. For example, far fewer respondents in data set 2 were married or partnered, these individuals were also more likely to have a post-secondary education, less likely to require assistance with ADL's, and were far more satisfied with their health. Though differences in structural path coefficient values were not tested for their significance in this study, it is worth noting that in data set 1, the standardized beta coefficient for health was thrice the size of that noted from the findings of data set 2. In this respect, then, health may simply have more immediacy for overall QOL among respondents in data set 1 than would ADL performance. Additionally, given that only 46% of participants in data set 2, compared to 66% of in data set 1, were married or partnered, evaluating one's position in life in the absence of a spouse or

partner may, in part, explain the direct effect of emotional support upon QOL in data set 2. Respondents with fewer emotional ties may, then, place greater emphasis upon them in QOL appraisals. Additionally, despite fewer Pilot Study participants being married or partnered, their emotional support scores were appreciably as high as those among Field Trial participants (see Table 1), indicating a propensity for seeking out positive emotional connections. The significant covariance between ADL performance and emotional support in the Pilot Study suggests that being physically independent is positively associated with support seeking which may, in part, explain the greater immediacy of ADL performance for Pilot Study participant QOL. The overwhelming majority of Pilot Study participants also reported living in their own homes, a circumstance in which physical independence is likely to play a sustaining role.

Another case in point that also limits the generalizability of the findings of this study is that, overall, field trial participants were satisfied with their overall health and financial resources, and opportunities for emotional support, and resided in highly desirable home environments. Additionally, 54% of the latter group reported having post-secondary education. While having such a rich array of personal assets was beneficial to the overall QOL of study participants, these characteristics speak to a privileged position in later life that may have bolstered meaning, purpose and quality in life. In Chapter 1, given the morose portrayal of living with chronic illness in old age arising from national survey data begs the question of whether the life circumstances of participants in this study reflect those of other chronically ill older adults in Canada. For example, while the prevalence of major depressive episodes among chronically ill older adults is low (Statistics Canada, 1995), more recent survey data released by Statistics Canada draws

attention to the high prevalence of psychological distress or hopelessness and worthlessness, moderate to severe declines in QOL, and significant losses in physical independence among this group (2003a; 2003b; 2003c).

In this study, the proposed causal model was also evaluated using cross-sectional data, thereby raising the question of whether the implied relationships shown in Figures 2 and 3 would hold over time. That is, as seniors grow older and frailer, would incremental losses in physical independence and a lessening ability to remain at home render the effects of ADL performance or the home environment significant? Similarly, would losses of confidantes and companions lead to emotional support having a direct effect upon overall QOL over time?

One other obvious limitation of this study was that survey data being analyzed had already been collected, limiting the operationalization of variables for data sets 1 and 2. With respect to emotional support, definitions from the social support literature draw attention to seeking understanding and venting frustrations, admiration and respect, and esteem building. Items in data set 2, however, capture perceptions of intimacy and physical closeness and contact. In addition to the latter two items, in data set 1, other aspects pertain to companionship and confiding. In this respect, in this study, the effects of a limited number of aspects of emotional support upon overall QOL were explored. For purpose in life, only one indicator was chosen in both data sets and among respondents in data set 1, it did not have a significant direct effect upon overall QOL. What has direct immediacy for the overall QOL for some older adults may, then, lie beyond simply having opportunities to continue to achieve in life. In a similar vein, though much empirical evidence exists to the contrary, ADL performance did not have a

significant effect in data set 1. If QOL is, as the WHOQOL-OLD Group (2002) maintains, affected by the older adult's level of independence, it may be that indicators beyond that of ADL performance need be chosen. A similar argument could be made for the physical environment, a variable found to have direct and significant ties with purpose and meaning, not overall QOL, in data set 1. Bowling et al. (2002) found that the safety of the surrounding environment had a significant and positive direct effect upon overall QOL.

The lack of direct effects emerging in the presence of one indicator lends credence to the idea of testing a measurement model using multiple indicators of purpose, ADL performance, and the surrounding environment. Tapping into more conceptual terrain would also lend itself to a more meaningful interpretation of findings, as was noted with emotional support, on a conceptual and practical level. Having multiple indicators of these variables in the proposed causal model may have also yielded stronger fit indices in the validation phase of analysis in this study. However, a measurement model would not alter the hypothesized causal pathways depicted in Figure 2, each arising from an analysis of covariance structures. On a practical level, then, the Field Trial model generated in this study is a candidate model. Though the Field Trial model was consistent or fit with its parent data set and the vast majority of its core effects replicated, it is not the only model that could. One other limitation of this study, then, is that unexamined or competing models might fit the data equally as well or better. One way to address this limitation is to compare fit among models with different theoretical assumptions, the plethora of possible frameworks, differential applications of the same theory, and need

for supplemental theories and philosophies to model QOL make cross-comparisons difficult and suggest that no one particular theory adequately captures QOL.

#### Future Research

The recommendations for future research being put forth in this study are intended to address some of the limitations of this study. Though a validation phase of analysis was undertaken in this study, in future research, it may be more prudent to survey the same group of older adults at two points in time. With a longitudinal study, over-sampling could be conducted, particularly among old-olds, to address the potential for attrition. The bias introduced by convenience sampling in the pilot study also points to a need for comparing two groups that are randomly selected for participation. These methodological concessions could provide further insight into the degree to which heterogeneity of meaning shapes the significant relationships that emerge in causal models.

The issue of multiple indicators was also raised, in particular for that of purpose, ADL performance and the surrounding physical environment. For future research, a number of additional items from the WHOQOL-BREF and WHOQOL-OLD could be used. Specifically, with respect to purpose in life, possible items could be WHOQOL-OLD Facets 27.1 (how happy are you with the things you are able to look forward to), 28.1 (how satisfied are you with the way you use your time), and 28.4 (to what extent do you have enough to do each day). For level of independence, from the WHOQOL-OLD instrument, these include Facet 26.3 (to what extent are you able to do the things you like to do) and 28.3 (to what extent do you get out as much as you would like to). One other item indicating level of independence is that of Facet 9.1 on the WHOQOL-BREF,

namely “how well are you able to get around”. For the physical environment, one other item would be that of WHOQOL-BREF Facet 16.1 - how safe do you feel in your daily life?

A measurement model could be tested using AMOS 5.0 with corresponding items from the BREF and OLD as indicators of purpose, independence, and the physical environment. The path coefficients yielded could help identify those items loading strongly onto each parent endogenous variable. Selected items could then be further evaluated by modeling them individually or as composite indices in a structural equation model. Alternatively, other instruments could be adopted to capture for example, level of independence such as the Sickness Impact Profile (SIP) or the SF-36; the latter also has items pertaining to the surrounding physical environment. Both instruments have been widely adopted and tested on older adult populations.

Qualitative inquiry would also help to identify other salient indicators of purpose in life by exploring, with greater depth, how older adults themselves define purpose and how it may relate to the meaning their lives hold. It would also be useful to inquire further about the kinds of purposive activities and goals that older adults engage in and which hold significant meaning for them. In this study, emotional connections had significant links with two aspects of spiritual being – meaning and purpose in life. If meaning, as Antonovsky (1978) contends, is a psychological resource for rising above and resolving problems in life, exploring the types of support that are most helpful for older adults may be one other fruitful area to focus on. Similarly, aspects of older adults’ surrounding physical environment that have particular relevance for the purpose and meaning in their lives warrant further empirical attention. In essence, qualitative inquiry

would provide valuable insight into the unexpected mediating effects arising in this study.

Another fruitful area for future research lies in the clinical applications arising from the findings of this study. Though recommendations being posited for practice are preliminary, their effects upon QOL could be further explored in an intervention study in a community or hospital setting. Measurements of QOL taken upon admission could be followed by assessments in the posited areas, and thereafter, negotiated interventions could be evaluated through a subsequent QOL appraisal. A longitudinal study could also be undertaken where older adults appraise their QOL over time, rendering possible the evaluation of length of intervention effects. A randomized controlled trial would not be desirable as this necessitates that potentially beneficial assessments and interventions be withheld from a control group. As such, a quasi-experimental approach wherein older adults already in a home care or acute care program are recruited to participate in an intervention study would be more prudent. In a quasi-experimental design, assessments and interventions already in place could be evaluated for their impact upon QOL; pursuing focal areas not yet explored would give rise to the evaluation of synergistic or additive effects. Doing so would also expose health region advisors to the utility of adopting QOL as an outcome measure to evaluate an older adult's plan of care.

In terms of future WHOQOL work, it would be beneficial to identify additional indicators of spirituality. Scholars have drawn attention to other dimensions of spirituality including hope, faith or belief in a higher power, and the perceived ability to rise above one's troubles or problems in life. As was done in the process of developing the WHOQOL-OLD instrument, a Delphi technique could be employed wherein older

adults generate a pool of items pertaining to spirituality that could, as a test of face validity, be further refined until group agreement emerges.

All of the instruments used in this study also focus on limited aspects of social support. Apart from the items adopted in this study pertaining to emotional support, the BREF contains an additional item, Facet 14.4 - how satisfied are you with the support you get from friends? Facet 28.6 on the WHOQOL-OLD asks: to what extent do you feel isolated from the people around you? The parent instrument of the BREF, the WHOQOL-100, simply captures all source generic received support by way of Facet 14.1 (do you get the kind of support from others that you need). Source-specific Facets include 14.2 (to what extent can you count on your friends when you need them), and 14.3 and 14.4 (how satisfied are you with the support you get from your family ... and friends). While the additional items on the BREF and the 100 allow researchers to explore the effects of perceived and received support, these questions provide little direction in terms the type of support being alluded to. The literature on social support and QOL among older adults draws attention to the significance of tangible, informational, physical, and practical or instrumental support (Hellstrom & Hallberg, 2001; Kleinpell & Ferrans, 2002; Tang et al., 2004; Tseng & Wang, 2001). Focus groups may help to elucidate further, a typology of support relevant to the QOL of older adults that extends empirical inquiry beyond the realm of generic and emotional support.

Cross comparisons of WHOQOL-OLD Group field trial findings among investigators from other partnering countries would also be informative. Shared findings with other researchers may spark an interest in co-developing a model that could be tested among partnering countries such as Australia, England or Norway with health care services

similar to Canada. Given that competing or unexamined models might also fit the Field Trial data equally as well or better, testing the Field Trial model using the same parent data set from the latter three countries seems prudent. Doing so would help determine whether consistent results in models using similar data are found or competing models of QOL arise.

In sum, then, a number of interesting conceptual and practical implications as well as avenues for future research have been described. First and foremost, the adequacy of financial resources, health satisfaction, and perceived meaning in life had a direct effect on overall QOL among the older adults participating in this study. Emotional support and the surrounding physical environment were found to have significant linkages with meaning and purpose in life, rendering a model that provided conceptual direction beyond that of direct effects. The structural paths linking meaning and purpose in life also bring the multidimensional nature of spirituality beyond that of conceptual definitions. The overall findings of this study also provided empirical support for the WHOQOL-OLD Group's definition of QOL, underscored the value and utility of including a broad host of causal factors in QOL models, and illuminated fruitful areas for collaborative practice and future research. While the additional direct effects emerging in the validation phase of analysis drew attention to the sample-dependent nature of post-hoc models, these idiosyncrasies gave rise to methodological concessions and added impetus to re-explore conceptual scholars' arguments around heterogeneity of meaning in future studies on older adults. Additionally, fitting one model to a particular data set does rule out competing models of QOL; in future research, the Field Trial model could be evaluated further against parent data from other countries such as Australia or Norway.

## Chapter 6 SUMMARY AND CONCLUSIONS

As outlined in Chapter 1, the goals of this study were to develop a causal model of QOL of older adults and to test the model. To do so, an extensive review of the conceptual literature on QOL, spanning from 1965 to 2004, was undertaken. From this, conceptual issues were identified that further informed the way in which QOL was modeled. In this study, global or overall QOL was the outcome of interest and the factors expected to influence overall QOL in this study were financial resources, perceived health, ADL performance, emotional support, meaning and purpose in life, and the older adult's home and surrounding physical environment. A definition of QOL was also offered and research hypotheses proposed wherein each posited causal feature was expected to have significant and positive direct effect upon overall QOL. Meaning and purpose in life were hypothesized to mediate the effect of perceived health on overall QOL.

The method used in this study was a secondary analysis of two cross-sectional data sets, the first using the Canadian WHOQOL-OLD Group 2004 Field Trial data (data set 1). The findings from the analysis of the first data set were then further evaluated or validated using an independent sample of 420 older adults who participated in the Canadian WHOQOL-OLD Group 2002 Pilot Study (data set 2). Analyses included a simple correlation analysis and two path analyses.

In the bivariate analysis of data set 1, financial resources, health satisfaction, ADL performance, emotional support, meaning and purpose in life, and the older adult's surrounding physical and home environment were found to be significantly and

positively correlated with overall QOL. Contrarily, age and gender were not found to have a significant effect on overall QOL.

In the multiple regression analysis for data set 1, the non-significant role of ADL performance, emotional support, and the physical and home environment indicated either that they were not related to QOL or their relationship was mediated by another variable. The non-significant effect purpose in life did not provide preliminary evidence of its mediating role in relation to the remaining predictors.

A path analysis of data set 1 was undertaken in which subsequent modification and fit indices suggested an alternative model in which financial resources, perceived health, and meaning in life had significant and positive direct effects upon overall QOL. In light of these findings, Hypotheses 1 and 2 were empirically supported, and Hypothesis 4 partially supported. Though purpose in life alone mediated the effect of perceived health, a model emerged wherein meaning in life further influenced the impact of purpose upon overall QOL. Meaning and purpose in life also mediated the effects of emotional support and the older adult's surrounding physical environment. The structural model arising from the path analysis of data set 1 explained approximately 57% of the variance in overall QOL; corresponding values for meaning and purpose in life were 29.5% and 40.3% respectively.

The model was then further tested using data set 2. Although the squared multiple correlation values for meaning, purpose and overall QOL were statistically significant, the AGFI yielded was greater than .90 and the RMSEA greater than .05. A number of additional significant structural paths emerged from ADL performance, emotional support, purpose in life, and the older adult's surrounding physical and home

environment to overall QOL. All but one of the mediating effects of meaning and purpose in life found in data set 1 were replicated, the being meaning in life not playing a significant mediating role in relation to the older adult's surrounding physical environment. The model arising from the path analysis of data set 2 explained approximately 50% of the variance in overall QOL. The corresponding explained variance for meaning and purpose in life was 23.7% and 24.4% respectively. The model for data set 2, as depicted in Figure 3, provided empirical support for all of the hypotheses being posited in this study, and for the mediating effect of purpose alone upon perceived health.

A discussion of the conceptual implications of the findings arising in this study was also provided with respect to the existing literature on the QOL of older adults, and for causal modeling generally. It was inferred post-hoc that age and gender did not play a significant role in the overall QOL appraisals of older adults. The findings of this study do, however, suggest that old age need not prevent one from having significant meaning, purpose, and quality in life. The mediated models arising in this study and the complex causal pathways through which meaning and purpose further influence the effect of perceived health, emotional support and the surrounding physical environment upon overall QOL makes a salient and novel contribution to the literature pertaining to older adults.

The findings of this study are also pivotal in that they provide empirical support for the nursing practice mandate put forth by the CGNA (1996). The practice implications offered focus on collaborative assessment, planning, and intervention. Key players include the older adult and his or her emotional support network, occupational and

physical therapists, activity aide and social workers, and long-term care case managers. Additionally, it was posited that collaborative efforts to enhance purpose in life could lead to ameliorative effects upon the meaning that older adults perceive their lives to hold.

This study also had a number of limitations. Though the sample-dependent nature of post-hoc models may, in part, be explained by heterogeneity of meaning, in this study, the use of cross-sectional data, sample size discrepancies, possible convenience sampling bias, and competing models of QOL warrant closer attention. Recommendations for future research include that of random samples of comparable size, qualitative inquiry pertaining to the aspects and causal role of spiritual beliefs, and testing the Field Trial model using parent data from other countries having healthcare services similar to Canada. Given the use of primarily single indicators to operationalize independent variables in this study, attention was also drawn to a possible measurement model.

Having reflected on the findings and implications of this study, I have drawn several conclusions. First and foremost, given the complexity of QOL, it is wise to cast a broad conceptual net around QOL and to give further empirical attention to the older adult's financial situation, health perceptions, emotional support, and surrounding environment. Causal modeling need not just focus on direct effects. In the path analyses undertaken in this study, two aspects of spirituality - meaning and purpose in life – helped elucidate the functional role of health perceptions, emotional support, and the physical environment, and gave rise to a mediating role for spiritual beliefs in QOL appraisals. Path models provide more insightful and meaningful interpretations of cause and effect - a beneficial consequence for practice applications. The inclusion of broad factors and mediating

effects in the field trial model explained an appreciable amount of variance in overall QOL perceptions.

The differences arising between the path models in this study draw attention to the sample dependent nature of post-hoc models and a concomitant need for two stages of analysis – model testing and cross-validation. The two stages undertaken in this study yielded two sources of empirical evidence for causal claims, an approach I believe to be requisite to offering defensible direction for nursing practice. Additionally, just as model development had as its basis a wide array of disciplinary perspectives, model testing and cross-validation illuminated the need for multidisciplinary clinical practice. Shared expertise is, then, pivotal to informed conceptualizations, and clinical assessments and interventions.

Despite the limitations of this study, it is the hope of this writer that the findings arising from it will instill a sense of curiosity among researchers and practitioners whose interests lie in explaining and enhancing the QOL of older adults. The graying of the general population and the increasing prevalence of chronic illness in Canada will surely give rise to a focus on caring versus curing. To this end, it is logical and reasonable to approach QOL inquiry, on an empirical and a practical level, with great fervor – after all, we are all aging.

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Appendix A  
Compendium of Quality of Life Models

Generic Models spanning from 1990-2001

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/ (A) antecedent (M) mediator
Oleson (1990)	A cognitive experience manifested by satisfaction with life domains of importance to the individual & an affective experience manifested by happiness with life (p. 188)	Overall perception of happiness & satisfaction in life that reflect the person's own life experience as a whole	None	Physical health & functioning; beliefs about self and surrounding environment; affect; spirituality & faith; social support – domains as causal features/positives could be mediated by cognitive beliefs
Ferrell, Grant, Padilla, Vemuri & Rhiner (1991)	The prevention & alleviation of physical and mental suffering, and the presence of a supportive network of informal relationships (p. 10-11)	<b>Physical</b> (function, sleep, nutrition, elimination), <b>psychological</b> (affect, leisure, personal beliefs), <b>social</b> (roles, relationships, intimacy) & <b>spiritual</b> (religiosity & transcendence) <b>well-being</b> /hierarchical dimensions	None	None
Cowan, Young-Graham & Cochrane (1992)	The extent to which the person's assessed level of satisfaction with life and sense of well-being are positive (p. 19)	Global appraisal of well-being, life quality & satisfaction with life quality	Cognitive adaptation	(A) Illness severity, treatment & socioeconomic background (M1) Perceived symptom-distress & physical function (M2) Cognitive adaptation

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/(A) antecedent (M) mediator
Nordenfelt (1992)	*A state of welfare manifesting as a perception of human happiness that reflects the similarity between the individual's current (have) & desired life circumstances (want)	Overall happiness in life existing on a continuum from completely unhappy to completely happy	Human welfare	External environment, inner physical & mental constituents, behaviors /causal order not established
Cella (1994)	The patient's appraisal of and satisfaction with his or her level of functioning compared to what he or she perceives to be possible or ideal (p. 189). Functioning is thought to operate under the individual's own value system	<b>Physical</b> (bodily function & disruption), functional (performance of ADL r/t ambitions, needs, roles), <b>emotional</b> (affect, distress) & <b>social</b> (perceived support, leisure, family functioning, intimacy, sexuality) <b>well-being</b> /unclear	None	None
Ferrans (1996)	Satisfaction with the aspects of life that are important to an individual (p. 293). Given vast added demarcations of domains, please refer to Ferrans & Powers (1985) Quality of Life Index – examples seen here include ⇒	<b>Physical health &amp; functioning</b> (independence, perceived energy & health, leisure), <b>psychological</b> (satisfaction with self, achieving goals, faith in God, overall happiness), <b>socioeconomics</b> (education, financial status, having a home), <b>family</b> (emotional support, health & happiness, ties with close friends and kin)/hierarchical	None	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/ (A) antecedent (M) mediator
Cummins (1996)	*Domains of life satisfaction & well-being	<p><b>Material well-being</b> (having a home, adequate income, savings &amp; material possessions), <b>health</b> (perceived health &amp; strength, physical function), <b>productivity</b> (vocation, successes), <b>intimacy</b> (quality &amp; number of ties with kin &amp; friends, living arrangements), <b>safety</b> (security &amp; privacy of surroundings, residential stability, autonomy), <b>community</b> (social ties &amp; class, self-perceptions), <b>emotional well-being</b> (having time to oneself, leisure pursuits, recreation, hobbies, self-esteem, religion, spirituality &amp; life opportunity)/unclear</p>	None	None
Leventhal & Coleman (1997)	An individual's evaluation of the level of his or her functioning within a number of life domains, and the value or importance assigned to these domains (p. 754). Two-stages of appraisal: pre-morbid and post-morbid QOL	Physical function, symptoms, psychological function, affect, economics, and social relationships/unclear	Self-regulative processes	<p>(A1) Common-sense representations of illness threat including meanings of symptoms, control versus cure, and affective or emotional reactions to threat  (A2) Procedures or IF-THEN rules of thought, feeling &amp; action that provide feedback to (A)  (M1) Beliefs about one self &amp; cultural practices</p>

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/(A) antecedent (M) mediator
Zissi, Barry & Cochrane (1998)	*A global appraisal of well-being & a subjective appraisal of satisfaction in eight conditions of life	Living situation, social relations, leisure, finances, safety, physical health, family relations, religion/unclear	Self-related constructs & Social comparisons	(A) Age, physical functioning, depression, objective measures of eight life conditions (M1) Self-concept & autonomy (M2) Individual's standards, aspirations, expectations, values & beliefs (comparison of current & past life conditions)
Haas (1999)	A multidimensional evaluation of an individual's current life circumstances in the context of the culture & value systems in which they live & the values they hold. QOL is primarily a subjective sense of well-being ... in some circumstances, objective indicators may supplement or, in the case of people unable to subjectively perceive, serve as proxy assessments (p. 219)	Subjective physical, psychological, social & spiritual well-being along with objective assessments of functioning in each domain/unclear but both depicted as equally important, ie. same conceptual plane	None	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/(A) antecedent (M) mediator
Ormel, Lindenberg, Steverink & Vonkorff (2001)	*Overall psychological well-being. Two stages of appraisal – at (A) and post-tradeoff	A hierarchy of well-being in which physical and social well-being function as basic universal needs that individuals strive to meet in order to produce overall psychological well-being	Social productivity function (SPF)	(A) Impairments & limitations arising from chronic illness (M1) Cost-benefit analysis of resources such as money, time, social support and skills. Tradeoffs to minimize cost of producing (M2) <b>Physical</b> (fed, rested, in a secure & safe environment) & <b>social</b> (acceptable rank or status, behavioral confirmation, affection, friendship & emotional support from others) <b>well-being</b>

## Models of scholars on Aging spanning from 1991-2004

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/ (A) antecedent (M) mediator
Lawton (1991)	A multidimensional evaluation, by both intrapersonal and socioinformative criteria, of the person-environment system of an individual in time, past, current and anticipated (p. 6)	Behavioral competence (external appraisals of biological and functional health, cognition, time use, social behavior), subjectively perceived quality (pain, discomfort, social relationships, self-efficacy, time use), external environment, psychological well-being/ hierarchical universal sectors of good life affecting one another; physical environment appraisal hinges upon competence & quality sectors	None	None
Zhan (1992)	The degree to which a person's life experiences are satisfying (p. 796)	Perceived life satisfaction (goals versus achievements), self-concept (psychological well-being), health (self and external appraisals of physical & social well-being), socioeconomics (occupation, education, income, acquired experience, skills, knowledge and assets, social ties)/unclear but on same conceptual plane	None	(A) Personal & health-related background, social & cultural factors, physical environment (M) Cognitive processing activities & perceived meaning in life

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical framework	Causal Features/causal order/ (A) Antecedent, (M) mediator
Farquhar (1995)	*The good & bad aspects of life	Social contacts & meaningful activities, emotional well-being, material circumstances (home, adequate income, living arrangements), health & functional ability (ADL's & mobility)/unclear	None	Same as what constitutes QOL itself & in no particular order
Felce & Perry (1995)	An overall general well-being that comprises objective descriptors & subjective evaluations of ... well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values (p. 60)	<b>Physical</b> (health, safety, fitness), <b>material</b> (food, transit, possessions, income), <b>social</b> (quality & number of ties) & <b>emotional</b> (esteem, affect, faith) <b>well-being</b> , personal development & purposive activity/affecting one another & weighted by personal values	None	Age, economics, employment, social & material inheritances/no causal order established
Fisher (1995)	*An overall appraisal of the degree to which universal lower order needs are met manifesting as an overall sense of well-being	Attaining good health, securing income & shelter, accepting what one has been able to achieve in life AND these, in turn, afford pursuing higher order needs of autonomy, mastery, personal growth & achievement/hierarchy of need	Human development & needs	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ antecedent (M) mediator (A)
Wilder (1995)	The perceived evaluation of life experience. An individual's functional status & psychological well-being as determined by self-rating of acceptance & enjoyment of past and present status (p. 16)	Overall health & life satisfaction	Systems theory	(A) Age, income & perceived health (M) Personality hardness
Raphael, Brown, Renwick, Cava, Weir & Heathcote (1997)	The degree to which a person enjoys the important possibilities in life (p. 120)	Universal need for <b>physical</b> (health, lifestyle, general appearance) & <b>psychological</b> (spirituality, self-appraisals) <b>being</b> , belonging (connections with the surrounding environment) & becoming (goals & activities that are practical, leisurely, growth-inducing) /affecting one another	Human need theory	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ antecedent (M) mediator (A)
Sarvimaki & Stenbock-Hult (2000)	*A sense of well-being, meaning & value or self-worth	Hierarchical triad of senses – well-being stems from perception that life has meaning and that accomplishments and the self are valued	Human development	(A) External conditions of the physical & social environment (work, housing, social networks) (M) Internal conditions of health & physical functioning, coping behavior, personality
Nesbitt & Heidrich (2000)	The feeling of well-being resulting from satisfaction in aspects of life important to the individual (p. 26)	Health & functioning, socioeconomic conditions, psychological-spiritual status, family situation/unclear	None	(A) Objective & subjective perception of physical health (M1) Individual beliefs of coherence (M2) Illness appraisal (a positive or negative life experience)
Stuifbergen, Seraphine & Greg (2000)	The individual's overall sense of health, well-being & satisfaction with life (p. 126)	Global appraisal of health, well-being & life satisfaction	None	(A) ADL performance, social & environmental barriers & resources (M1) Self-efficacy & illness acceptance (M2) Health-promoting behaviors
Hellstrom & Hallberg (2000)	*An overall perception of happiness & satisfaction with one's present life circumstances	Happiness & satisfaction in life	None	Demographic background factors, health & physical functioning, presence of informal & formal social support for ADL's/no causal order established

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ antecedent (M) mediator (A)
Tseng & Wang (2001)	Subjective perception of happiness & satisfaction (p. 304)	Psychological, spiritual, social, health & functioning, family relations, self-accounting/unclear	None	Socioeconomic background, religious beliefs, social support, perceptions of physical functioning, contact with family/no causal order established
Hilleras, Jorm, Herlitz & Winblad (2001)	*What older adults themselves believe gives them satisfaction and is of personal value	Social freedom, life experience, health, being cared for, self-confidence, financial security, family contact, remaining actively involved in life/unclear	None	Personality, the presence & quality of social relationships, meaningful activity, health perceptions/no causal order established

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ (A) antecedent (M) mediator
WHOQOL-OLD Group (2002; in press)	<p>The individual's perception of their position in life in the context of the culture &amp; value systems in which they live and in relation to their goals, expectations, standards &amp; concerns. It is a broad ranging concept affected in complex ways by a person's physical health, psychological state, level of independence, social relationships, and their relationships to salient features in the environment (p. 6)</p> <p>Given vast added demarcations of facets, please refer to cited references - two examples included ⇒</p>	<p>Physical &amp; psychological being, spiritual &amp; personal beliefs, sensory abilities, autonomy, coming to terms with death &amp; dying, recognition &amp; satisfaction with past, present &amp; future activities, social participation, intimacy/affecting one another &amp; weighted in accordance with one's culture and values</p> <p>Physical being (pain, discomfort, energy, fatigue) &amp; autonomy (freedom to make choices, control, ability to pursue meaningful activity)</p>	None	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ antecedent (M) mediator (A)
Bowling, Gabriel, Dykes, Dowding, Evans, Fleissig et al. (2003)	A multilevel and amorphous concept, which reflects both macro societal & sociodemographic influences, and also, microconceptions such as the individual's experiences, circumstances, health, social well-being, values, perceptions & psychology. It is dependent on the perceptions of the individual & is likely to be mediated by cognitive factors (p. 271)	Social relationships (presence & quality of ties), roles/activities (social, cultural, civic), personal features (health perceptions, psychological well-being: alertness, spirituality & disposition, level of independence), physical environment (quality & safety), financial circumstances /unclear	None	Sociodemographic background & society at large (?) /likely to be mediated by cognitive factors
Klempell & Ferrans (2002)	Ferrans 1996 definition	Ferrans 1996 domains of life/no further clarity on relations between domains	None	Illness severity, social support & financial situation/no causal order established
Higgs, Hyde, Wiggins & Blayne (2003)	*An older adult's appraisal of the perceived degree to which their basic universal needs are met	Hierarchy of need includes the basic universal need for autonomy & control in the surrounding environment. These are basic prerequisites for engaging in pleasurable & meaningful activity so as to realize higher order need for pleasure & self-realization	Human need	None

Author(s) & Type	Quality of Life (*described not defined)	Conceptual features/linkages	Theoretical Framework	Causal Features/causal order/ antecedent (M) mediator/ (A)
Tang, Aaronson & Forbes (2004)	A subjective integration by the patient of aspects of their lives they deem relevant (p. 104).	Physical, psychological, social & existential well-being	None	Existential or spiritual and religious beliefs, physical performance status, social support/no causal order established

Appendix B  
WHOQOL-OLD Group Data Access Guidelines

ACCESS TO THE INTERNATIONAL DATA-SET

Individuals from within the WHOQOL-Old group may follow the procedure below to gain access to the international data-set:

- Requests to access the international data-set should be submitted to the steering committee via the coordinating centre in Edinburgh. A request should take the form of an abstract or summary and include the aims of the project, methods and timelines, and intended use of the data.
- The steering committee should provide feedback after 1 month regarding the outcome of each proposal.
- A progress report should be submitted to the steering committee by the authors after 6 months.
- Normally, access to the data-set will be for a one year period of time. Subsequent requests for the data will be required thereafter and will be treated on merit.
- Data can only be used for the purposes specified. Each new paper or project will require additional review and authorisation.

The main purpose of these guidelines is to provide a protection to all centres against possible misuse or misrepresentation of their own data, but without every centre having to review every proposal made. The Steering Committee therefore agrees to act on behalf of all centres, but in any situation of doubt will approach one or more individual centres as appropriate.

National data-sets may be used by individuals within the WHOQOL-Old group. Individuals from outside the WHOQOL-Old group wishing to use national data-sets may only do so with the expressed permission of the relevant centre's Principal Investigator.

Edinburgh, as the coordinating centre, will record and maintain a register of national and international intentions to publish and the proposed journals and provide feedback to the centres.

## CITATION FORMATS

### INTERNATIONAL PAPERS

Title

Author *and the WHOQOL-Old Group*

(Keyword = WHOQOL-Old)

A footnote should include the funding body (EC Fifth Framework, QLRT-2000-00320), reference to the WHO, and an alphabetical listing of all centres involved.

The WHOQOL-Old Group comprises a coordinating group and collaborating investigators in each of the following field centres: Professor M. Power, Kathryn Quinn, Ken Laidlaw, University of Edinburgh, UK; Dr R. Lucas, Institut Català de l'Envel·liment, Barcelona, Spain; Professor S. Skevington, University of Bath, UK; Mr Y. Ben Ya'acov, Ms T. Narkiss, Department of Behavioural Science and Social Work, Ben-Gurion University of the Negev, Israel; Professor L. Kullman, National Institut for Medical Rehabilitation, Hungary; Ms G. Bech-Anderson, Psychiatric Research Unit, Copenhagen, Denmark; Professor Ji-Qian Fang, Sun Yat-sen University of Medical Sciences, Guangzhou, China; Ms I. Winkler, Klinik und Poliklinik für Psychiatrie, University of Leipzig, Germany; Professor G. Hawthorne, Australian Centre for Posttraumatic Health, University of Melbourne, Australia; Dr M Kalfoss, Faculty of Nursing, Menighetsstøsterhjemmets College, Oslo, Norway; Dr A. Leplege, INSERM, Paris, France; Dr E. Dragomirecka, Prague Psychiatric Centre, Prague, Czech Republic; Dr M. Martin, Health Services Research Associates Inc, Seattle, U.S.A.; Dr M. Tazaki, Department of Science, Science University of Tokyo, Tokyo, Japan; Professor M. Eiseman, Department of Psychology, University of Tromsø, Norway; Mr B. Nygren, Department of Nursing, Umeå University, Sweden; Dr A. Molzahn, Faculty of Human and Social Development, University of Victoria, Canada; Dr J. Ceremnych, Scientific Department of Gerontology Problems, Institute of Experimental and Clinical Medicine, Vilnius, Lithuania; Dr M. Fleck, Department de Psiquiatria e Medicina Legal, Porte Alegre, Brazil; Professor, K-F. Leung, Hong Kong Hospital Authority, Kowloon, Hong Kong; Dr N. Von Steinbuchel, Centre of Neurogerontopsychology, Geneva University of Psychogeriatrics, Geneva, Switzerland; Assoc Professor Erhan Eiser, Celal Bayar University, Manisa, Turkey; Dr L. Schwartzmann, Dept of Medical Psychology, Uruguay; Dr R. Killian, Department of Psychiatry, University of Ulm, Germany.

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A footnote (which can be placed at the end of the paper) should include an acknowledgment of the WHOQOL-Old Project, mentioning specific centres.

Appendix C  
Ethical Waiver