NOTE TO USERS

Quality of Life and its Predictors among the Elderly Chinese People Living in Montreal, Canada

Tianli Liu

School of Physical and Occupational Therapy

Faculty of Medicine, McGill University, Montreal, Canada

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ABSTRACT

While Quality of Life (QOL) among aging populations has been attracting more and more attention in the last few years, little QOL research has been carried out among the elderly Chinese minority. This is a cross sectional study aimed at estimating the Quality of Life (QOL) and exploring QOL indicators among the elderly Chinese people living in Montreal. Forty-one volunteer study participants, 65 years or older were recruited from 12 Chinese community centers in Montreal. Their QOL was measured by the Ferrans and Powers Quality of Life Index (1985). The study results showed that participants generally described a very high level of life satisfaction. Living arrangements, gender, education and social support were found to be important QOL indicators. This study has important implications for health service and policy and raises the need for further future research using a larger random sample.

Abrégé

Quoique les chercheurs prêtent de plus en plus d'attention à la qualité de vie chez les personnes âgées, il existe très peu de recherche dans ce domaine qui traite de la minorité chinoise. Ceci est une étude transversale dont le but est d'estimer la qualité de vie en utilisant des indicateurs parmi une population de chinois âgée qui habitent à Montréal. Quarante et une personnes âgées de soixante-cinq ans et plus ont été recrutées dans douze centres communautaires situés à Montréal. Leur qualité de vie a été mesurée en utilisant l'index de qualité de vie de Ferrans et Powers (1985). Nos résultats indiquent que les participants sont généralement très satisfaits de leur qualité de vie. De plus, nous avons trouvés que la situation domestique, le sexe, le niveau d'éducation ainsi que l'existence d'un soutien social sont des indicateurs de la qualité de vie. Cette étude est importante dans le cadre des services de la santé ainsi que sur le plan politique. De futures recherches utilisant un plus grand échantillon aléatoire seront nécessaires.

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PREFACE

In September 2002, I enrolled in the Master's program in Rehabilitation Science at the School of Physical and Occupational Therapy at McGill University and started to work on this project.

In January 2003, I started writing my research proposal and reviewed literature on the QOL among minority groups. At the time, I was excited to realize that there was a need to conduct a QOL study among elderly Chinese people living in Montreal, as no such study had been carried out. At the same time, I also felt overwhelmed when I faced the huge literature - reviews, critiques, discussions, and arguments on QOL definitions and measurements. There was very little consensus on what QOL was; furthermore, there were hundreds of QOL measurement instruments developed by researchers in different areas. At first, I needed to establish what QOL construct I was going to study and the reason I had chosen one measurement over another. During this process, I learned a lot about QOL theories and measurement. I was so excited when I came across Flanagan's theory that showed that people share common components of QOL; furthermore, I found the Ferrans and Powers Quality of Life Index which was developed based on Flanagan's theory and measured satisfaction with each component of QOL. Flanagan's theory and the Ferrans and Powers QLI became the basis of my thesis.

In September 2004, approval was obtained from Institutional Review Board (IRB) and the data collection work began. During the data collection process, I learned the invaluable research skills of recruiting and interviewing study participants; at the same time, I realized that data collection was a very challenging job for researchers. After 5 months of rigorous and intensive work, I obtained 41 effective questionnaires. This number guaranteed an acceptable statistical power of my study. From the summer of 2005, I started writing my thesis. This process was also a slow one given that English is not my first language and since at the same time I had started full time PhD studies at

Brown University. After more than one year of continuous writing and repeated revisions, the thesis is finally ready for submission.

I can now say that the whole process of working on this project has been an adventure. I have acquired a significant amount of knowledge and research skills while at the same time I have, indeed, enjoyed living through this wonderful experience.

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Chapter 1 INTRODUCTION

With the rapid increase of the aging population, there has been a growing interest worldwide in Quality of Life (QOL) studies as a means of identifying community residents' needs in health care, especially among the elderly. QOL, generally defined as the subjective satisfaction and happiness of an individual with life, is one of the most important goals of healthy aging as highlighted by the World Health Organization (WHO).

While research on the QOL of the aging population has been developing worldwide and has, thus far, provided knowledge and information for improving the health care of the elderly, to date little QOL research has been carried out among the elderly minority groups. The Chinese minority is the largest visible minority group in Canada (2001 census, Canada); thus issues pertaining to the QOL of these individuals are estimated to be within the concerns of the government and of health care service providers. However, very few studies have been carried out in this population, and even the ones that exist are inconsistent in terms of their QOL levels and QOL indicators. Furthermore there is no QOL study among Chinese elderly in Montreal until now. Such absence of information makes it difficult for the service providers and policy makers to understand the health care needs of the Chinese elderly population in Montreal. The present thesis addresses this particular issue. In the following chapters the background and literature review, the

rationale and study objectives, the research methods, the study results and the discussion are presented.

Chapter 2 begins with an introduction of the importance of enhancing QOL among aging groups. This is followed by a detailed literature review of the QOL studies among ethnic groups and, in particular, among the Chinese elderly living in different communities. Then we proceed with the discussion of the definition and the measurement of QOL. Finally, the QOL indicators among the elderly population are summarized and the literature regarding QOL indicators among the Chinese elderly is reviewed.

Chapter 3 outlines the primary and secondary study objectives and states the rationale of this research study.

Chapter 4 describes the methodology used in this study. The study design, study population and data collection method are presented. All the measures used to assess the variables are outlined. Furthermore the statistical analyses carried out to treat the data are explained.

Chapter 5 presents the study results. This includes the descriptive statistical analysis of QOL and the content analysis of the qualitative data, as well as the regression analysis and the final best models of the QOL indicators identified.

Chapter 6 provides an interpretation of the study results and the missing data. Then the study conclusions are presented. In addition, the study limitations and their possible effects on the findings, as well as the directions of future research are discussed. Finally, we end with a summary of the contribution of this study.

Chapter 2 LITERATURE REVIEW

2.1. Aging and Quality of Life

The proportion of individuals aged 60 and over is growing faster than any other age group. Between 1970 and 2025, some 694 million, an increase of 223 percent is expected in this group. By 2025, there will be a total of about 1.2 billion people over the age of 60. The Canadian population is continuing an aging trend that has been on-going since the beginning of the century. In fact, Canada is one of the countries with the highest proportion of aging population, with 27.9% of individuals aged above 60.

Aging is a complex process that affects all of us physically, socially and psychologically. With aging, the elderly experience functional decline of bodily organs, as well as social and emotional changes and loss, for example, loss of a spouse or older relative that may result in grief and sadness. At the same time, the elderly are a very diverse group. Many older people lead active and healthy lives, while some 'much younger' old people have poorer QOL. Differences in education level, income, and in social roles and expectations during all stages of a person's life increase the diversity of aging (World Health Organization, 1999).

Population aging is one of humanity's greatest challenges facing heath care service providers and policy makers. In order to extend healthy life expectancy and quality of life for the aging population, the WHO argues that "active aging" policies and programs

should be enacted. Active aging is defined by the WHO as the process of optimizing opportunities for health, participation, and security in order to enhance quality of life as people age. The concept of active aging has helped to shape aging policies at national and regional levels and to direct academic research on aging; furthermore it has influenced the practical application of policies at the community level. As the major goal of active aging, QOL in the elderly is an increasingly important issue today and is defined as a precursor of successful aging (Chou & Chi, 2002; Fisher, 1995).

2.2. QOL among the elderly Chinese minority living in the community

Despite the importance of improving QOL among the aging population, QOL research within minority groups is very limited, particularly among the Chinese minority. To our knowledge only three studies of the QOL among elderly Chinese minority living in the communities in North America are mentioned in the literature (1990-2004). These are reviewed in detail below:

Chappell et al.(1997) conducted a study of 830 Chinese elderly living in British Columbia (BC) and found that Chinese elderly in BC have less money and suffer from at least as many chronic conditions and as much functional disability as does the general Canadian population of seniors. Nevertheless, Chinese elderly still express high levels of satisfaction with life, in general and in various domains of their lives, similar to other seniors. In this study, participants were asked to rate their feelings about specific life areas from "dissatisfying" to "very satisfying" on a 5-point scale; the specific areas included life in general, health income/assets, transportation, spiritual life, recreation

activities, housing, friends, living partner, communication with children/grandchildren, and family relations. Results showed that eighty-one percent of the elderly rated themselves as very satisfied with life in general. Over ninety percent of Chinese seniors expressed satisfaction with their partner or spouse, and with their housing; over eighty percent expressed satisfaction with family responsibilities, communication with children and grandchildren, and with their income and assets; over seventy percent expressed satisfaction with transportation, and friends. The areas where less satisfaction was expressed included: health; spiritual life; and recreational activities. Since the participation rate was very high (88.5%) and all data in their study had been weighted to reflect the correct proportion of Chinese elderly living in Victoria and Vancouver area, the authors argued that their findings could be generalized to the Chinese elderly living in these two cities in BC.

In contrast, different findings of QOL among Chinese elderly living in Canada were reported by Lai (2004). He conducted a secondary data analysis to compare the health status between elderly Chinese (Lai et al., 2003) and Canadian seniors in general (Hopman et al., 2000). The QOL data of the Chinese seniors and the general Canadian seniors came from two different survey studies. In The Health and Well Being of Older Chinese in Canada study, 2272 Chinese elderly from seven Canadian cities were randomly selected. In The Canadian Multi-centre Osteoporosis study (CaMos), a random sample of 9423 Canadians was selected in nine Canadian cities to estimate prevalence of Osteoporosis. Since the study participants of CaMos are a random sample from the general population, they are thought to represent the general Canadian population instead

of only the Osteoporosis patients. By comparing the SF-36 data of the elderly Chinese and the general population of Canadian seniors in these two studies, Lai (2004) concluded that, overall, older Chinese Canadians reported better physical health, but worse mental health than the Canadian seniors.

Finally, in another study on Chinese elderly living in the US, Ren & Chang (1998) recruited 219 elderly Chinese living in the Boston area, and used the Chinese version of the MOS SF-36 to investigate the QOL in this population. They found that the elderly Chinese people showed similar or better physical health as compared to that of U.S. norms but worse mental health than the U.S. norms. The indicators of their QOL were co-morbid conditions, education level, difficulty in seeking medical care, social support, and belief in Chinese medicine. These findings are very similar to the Lai (2004) study as they concluded that the Chinese elderly perceived themselves to be in better physical health but worse mental health than the U.S. norms.

An issue we must be sensitive to is that QOL may be different across different regions and countries. Pedich (2002) studied the elderly in six chosen rural areas in Poland, and found that the percentage of the individuals dissatisfied is quite different across the various regions, ranging from a few percentage points to over 20%. Li et al. (1998) investigated 8550 subjects from Hunan China, and concluded that individuals living in an urban area had lower QOL scores than individuals living in a suburban area. Thus QOL study results can not be directly generalized from one region to another.

Given the above and especially the different results obtained on the QOL of elderly Chinese immigrants in the two Canadian studies, it is difficult to estimate the QOL among the elderly Chinese minority living in Montreal. Furthermore, the findings of the above QOL studies are difficult to compare since they used different definitions of QOL and different measurement instruments.

2.3. Definitions of Quality of Life

To date, there is no clear definition of QOL, since researchers in various disciplines consider the issue from a variety of perspectives (Spiker 1990, Farquhar 1995). QOL is defined by the WHO as: "an individuals' perception of their position in life in the context of the culture in which they live and in relation to their goals, expectations, standards and concerns" (WHO 1994). It is a broad-ranging concept, incorporating in a complex way the person's physical health, psychological state, level of independence, social relationships, as well as their relationship to salient features of their environment. When comparing across different professions we note that physicians focus on health and illness related variables and define QOL as: the value assigned to duration of life as modified by different deficits, functional status and social opportunities that are influenced by disease, injury, treatment or social and political policy (Farquhar, 1995). Therapists place emphasis on adaptation to good life, and consider the notion of quality of life as the degree of goodness and life during daily living (Dijk, 2000). In the literature, QOL may appear under different terms: health status, physical functioning, subjective health, health perceptions, life satisfaction, individual cognition, functional disability and well being. It

must also be noted that often, the use of these terms depends on the researchers' preference; since there is little clarification of the definition of QOL (Hunt, 1997).

In this study, since QOL is the important outcome variable: it is thus deemed necessary to define it clearly. Although there is no consensus on the precise definition of QOL, as mentioned above, researchers do generally agree that QOL is a subjective phenomenon definable in terms of global happiness or satisfaction with life. Therefore in this study, we adopt a broad definition of QOL as being an individual's subjective perception of life satisfaction.

In spite the lack of agreement on a QOL definition, the basic components of QOL have been summarized in the literature. Flanagan et al. (1978) conducted a qualitative survey study asking nearly 3000 people across the United States to describe important or satisfying experiences, harmful events that had happened to others or to their acquaintance, changes in quality of life over the past 5 years, and events producing pleasure or a strong positive or negative emotional impact. The 6500 critical incidents obtained were further grouped into 15 categories within five domains. (Table 2.3)

Table 2.3: Quality of Life Categories in Five Domains

Physical and material well-being
- Material well-being and financial security
- Health and personal safety

Relations with other people
- Relations with spouse
- Having and raising children
- Relations with parents, siblings or other relatives
- Relations with friends

Social, community and civic activities
- Activities related to helping or encouraging other people
- Activities relating to local and national governments

Personal development and fulfillment
- Intellectual development
- Personal understanding and planning
- Occupational role
- Creativity and personal expression

Recreation
- Socializing
- Passive and observational recreational activities
- Active and participatory recreational activities

In Canada, the Centre for Health Promotion at the University of Toronto developed a conceptual model of QOL based on an analysis of the literature on QOL and qualitative data collected in the context of focus groups and in-depth interviews of persons with or without developmental disabilities. The conceptual framework has three life domains: *being*, *belonging* and *becoming*; each of these has three sub-domains: the physical domain, the psychological domain, and the spiritual domain; Thirty-five QOL components are listed in the model (conceptual frame work of QOL). In fact, these

components are quite similar to the components summarized by Flanagan (1978). (Appendix 2.3.)

Studies with patients from different countries, including stroke survivors in China, cancer patients and bone marrow transplant survivors in the US, obtained consistent results with the QOL components found in Flanagan's study. Lau et al. (2001) conducted a study aimed at identifying the constituents and conceptual characteristics of the QOL of Chinese elderly stroke survivors, living in the community in Hong Kong, China. They compared the QOL components gathered by using three different methods, namely, focus group interviews, review of the literature and the contents of the generic Hong Kong Chinese version of the World Health Organization Quality of Life Scale (CWHOQOL-HK). This study identified 36 components considered to contribute to the QOL of Chinese elderly stroke survivors in Hong Kong. The conceptual characteristics of their QOL generally concurred with those identified in Flanagan's study. In another QOL study conducted by Ferrell et al. (Padilla, 1990; Ferrell, 1992a; 1992b) in the US, 119 bone marrow transplant survivors were interviewed using open ended questions in order to explore the concept of QOL. The findings revealed similar QOL domains as those identified in Flanagan's study. Based on the above, it can be concluded that QOL has the same basic constituents and characteristics across different population.

2.4 Measurements of QOL

According to target population of QOL measures, QOL instruments can be either generic or disease-specific. Generic QOL instruments are used with the general population while

disease-specific QOL instruments are used in patients with special types of diseases. Since the population in this study comprises elderly individuals living in the community, a generic measure is appropriate as it measures a global concept of QOL and not only a specific disease related QOL. A review of the literature revealed that 16 generic QOL instruments are available (appendix 2.4.). Of these, only five of them have a Chinese translation; they are the EQ-5D, the Ferrans and Powers Quality of Life Index (QLI), Flanagan's Quality of Life Scale, the Health Utility Index and the Medical Outcome Short Form (36) Health Survey.

The SF-36 was constructed to satisfy a minimum of psychometric standards necessary for group comparisons comprising generic health concepts, as well as concepts that are not specific to any age, disease, or treatment group. It can be used in clinical practice and research, health policy evaluations, and general population surveys. The SF-36 includes one multi-item scale that assesses eight health concepts: 1) limitations in physical activities due to health problems; 2) limitations in social activities due to physical or emotional problems; 3) limitations in usual role activities due to physical health problems; 4) bodily pain; 5) general mental health (psychological distress and well-being); 6) limitations in usual role activities due to emotional problems; 7) vitality (energy and fatigue); and 8) general health perceptions. It can be self-administrated in adults or adolescents or administrated through interview. The SF-36 has shown promising reliability and validity. The reliability is supported by Cronbach's alphas ranging from 0.70 to 0.93; and studies all over the world have provided strong evidences of the content, concurrent, criterion, construct, and predictive validity of SF-36 (Ware et al., 1993).

Although the SF-36 may be the most widely used QOL instrument, it is not judged to be the appropriate measurement instrument for this study, since the outcome variable here is general QOL among community residents rather than Health Related Quality of Life measured by the SF-36.

The EQ-5D is a standardized instrument that was constructed to assess health outcomes from a wide variety of interventions on a common scale, for purposes of evaluation, allocation and monitoring; it provides a simple descriptive profile and a single index value of health status. The EQ-5D was originally designed to complement other instruments such as the SF-36, NHP, SIP or disease-specific questionnaires but is now increasingly used as a 'stand alone' measure. The EQ-5D self-report questionnaire (EQ-5D) consists of 4 pages. The first page is a cover page indicating the language version. In the second page, health status is described according to 5 dimensions; including mobility, self-care, unusual activities, pain/discomfort, anxiety/depression, and each dimension is divided into 3 levels: no problem, some problems, and serious problems. Then follows the third page EQ VAS, which is a vertical 20 cm visual analogue scale (similar to a thermometer), with endpoints of 100 (best imaginable health state) at the top and 0 (worst imaginable health state) at the bottom. Finally, there is an optional page of demographic questions. Evidence of validity and responsiveness of EQ-5D has been established (Hurst et al., 1997). Although some research suggests that the reliability of EQ-5D among Asian people need further investigation (Luo et al., 2003). The EQ-5D offers a simple method for obtaining a self-rating of current health and health-related quality of life by generating a score; however it does not measure QOL as an individual's satisfaction with life, which

is the operational definition of QOL in this study. Thus, it is not an appropriate instrument to be used in this study.

The HUI is a family of generic health profiles and preference-based systems for the purposes of measuring health status, reporting health-related quality of life, and producing utility scores. In clinical populations, the scores can be used to provide a single summary measure of health-related quality of life. In cost-utility analyses, the scores can be used as quality weights for calculating quality-adjusted life years. In general populations, the measure can be used as quality weights for determining population health expectancy. It currently consists of two systems, the HUI2 and the HUI3. The HUI questionnaires are available in many languages, in self- and proxy assessment versions, in self- and interviewer-administered formats, and suitable for all persons five years of age and older. HUI has shown promising reliability, validity and responsiveness; which are supported by hundreds of studies world wide (http://www.healthutilities.com). However the HUI is not an appropriate measurement instrument for this study as it does not measure QOL in terms of satisfaction with life but focuses on Health Related Quality of Life.

Flanagan's Quality of Life Scale (QOLS) is a self-administered questionnaire designed for use in patients with chronic illness. It consists of 16 items in 6 domains: physical and material well- being; relationships with other people; social, community, and civic activities; personal development and fulfillment; recreation; and independence. Flanagan's original 15-item scale was derived from 6500 critical incidents reported in

interviews with 3200 American adults of all ages and health status (Flanagan, 1978). Burckhardt et al. (1989) added one item that of 'independence' after interviewing 204 people with chronic illnesses (diabetes, ostomy, osteoarthritis, rheumatoid arthritis) They also suggested that QOLS showed good reliability and validity; with Cronbach's alpha coefficients averaging 0.87 and acceptable validity coefficients for both convergent and divergent construct validity. Flanagan's QOLS could be one of the appropriate measurement instruments in this study, since it measures QOL as satisfaction with life and covers the common components of QOL, as we defined earlier in this chapter.

The Quality of Life Index (QLI) was developed by Ferrans and Powers to measure quality of life in terms of satisfaction with life (Ferrans & Powers, 1985). Quality of life is defined by Ferrans as "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her" (Ferrans, 1990). The QLI measures both satisfaction and importance of various aspects of life. Importance ratings are used to weight the satisfaction responses, so that scores reflect the respondents' satisfaction with the aspects of life that they value. Items that are rated as more important have a greater impact on scores than those of lesser importance. The instrument consists of two parts: the first measures satisfaction with various aspects of life and the second measures the importance of those same aspects for the individual. Scores are calculated for quality of life overall and in four domains: health and functioning, psychological/ spiritual, social and economic, and family (Ferrans, 1996; Ferrans & Powers, 1985; Ferrans & Powers, 1992; Ferrans, 1990; Warnecke et al., 1996). A number of versions of the QLI have been developed for use with various disorders and

for the general population, and have been reported in more than 100 published studies. QLI showed promising reliability and validity. Reliability is supported by high levels of Cronbach's alphas, ranging from 0.84 to 0.98. Content validity of the QLI is supported by intensive literature review and its construct validity is supported by a factor analysis and a strong correlation between the QLI total score and the Campbell, Converse, and Rodgers' (1976) measure of life satisfaction. The Ferrans and Powers QLI (1985) include more QOL components (33 QOL components) than Flanagan's QOLS (16 QOL components). The QLI not only addresses "how satisfied" an individual is with each QOL component, but also "how important" each component is for the individual. In addition, the QLI has different versions to be used with different populations, including the generic version being appropriate for the general population, such as the elderly Chinese community residents in this study. We thus reached the conclusion that the QLI is the best available QOL instrument for this study.

2.5. Quality of Life (QOL) indicators among the elderly population

In addition to estimating the QOL, it is necessary to explore the QOL indicators among the study population. By investigating the indicators of QOL, we may uncover useful information to health service providers and policy-makers as to which subpopulation is more likely to have lower QOL and which factors are correlated with QOL among the elderly Chinese. Research on QOL indicators has been conducted all over the world. One of the most significant projects on the QOL indicators is the quality of life project in New Zealand. The researchers conducted a series of survey studies beginning in 2001; they conducted telephone interviews of thousands of people living in the large cities in New

Zealand on a yearly basis and summarized 56 key quality of life indicators in the general population, these indicators are listed in the Appendix 2.5.

In this study, only seven QOL indicators including social support, functional status, socioeconomic status (SES), age, education, gender and living arrangements were tested as potential QOL indicators since these 7 indicators are most frequently suggested as important QOL indicators among the elderly. The literature reports of these seven QOL indicators are reviewed and discussed below.

2.5.1. Social support and QOL (appendix 2.5.1)

Social support is frequently reported in the literature as a QOL indicator and strong evidence suggests that there is a positive relationship between social support and QOL. Social support is defined by public health researchers as "that assistance available to individuals and groups from within communities which can provide a buffer against adverse life events and living conditions, and can provide a positive resource for enhancing the QOL". This definition shows us the correlation between social support and QOL. Social support may buffer the influence of stress on QOL by changing the stressful situation, giving information on how to avoid problems, reinterpreting stressors as less threatening, and influencing coping strategies (Pinquart, 2000; Antonucci & Akiyama, 1991; Thoits, 1986).

Substantial amounts of literature have shown evidence that social support predicts QOL. A meta-analysis of 286 empirical studies concluded that social support is positively

related to life satisfaction. Furthermore the quality of social contact shows stronger association with life satisfaction than does quantity of social contacts (Pinquart, 2000).

There is also literature that reports on the relationship between social support and QOL among elderly Chinese immigrants living in Canada. Chappel et al. (2003) examined Chinese elderly living in Shanghai, China, Chinese Canadians living in BC, and Canadian natives living in BC. They concluded that social support predicts subjective QOL among all these three groups in spite of the many differences in the life situation of seniors living in mainland China and those living in Canada. Among community residents, strong evidence has been reported that social support is positively related to QOL (Chappell et al., 2003; Tak et al., 2003; Wang, 2002; Cummings, 2002; Bosworth et al., 2000; Kim et al., 1999; Silvira & Ebrahim, 1998; Bienenfeld et al., 1997; Cheung, 1997; Mathieson et al., 1996; Newsom & Schulz, 1996; Tell et al., 1995; Ho et al., 1995; Bowling et al., 1993; Levitt et al., 1987; Decker & Schulz, 1985). The components of social support have also been reported as predictors of life satisfaction including social interaction and social network (Sparks et al., 2004; Adams et al., 2000; Svensson et al., 1999; Kim, 1997; Kim et al., 1996; Farquhar, 1995; Kataoka et al., 1995; Gray et al.,1992; Chappell & Badger, 1989), and Good relationship with others (Isaacowitz, 2003; Tesch-Romer et al., 2002; Adams et al., 2000; Allain, 1996; Miller et al., 1998; Allain, 1996; Warren et al., 1996; Iwastsubo et al., 1996; O'connor, 1995).

In addition, social support has been reported to predict QOL among unhealthy populations with different conditions including patients with Traumatic Brain Injury

(TBI) or Spinal Cord Injury (Huebner et al., 2003; Post et al., 1998; Warren et al., 1996; Decker & Schulz, 1985), patients with Osteoarthritis (Tak et al., 2003), patients with cardiac conditions (Bosworth, 2000), assisted living residents (Cummings, 2002), head and neck oncology patients (Mathieson et al., 1996), Hansen's patients (Kataoka et al.,1995), dialysis patients (Tell et al., 1995), and stroke survivors (Astrom et al., 1992).

In accordance with the consistent reports on the positive correlation between social support and QOL among people from all over the world, we hypothesize that the correlation between social support and QOL also exists among our study population, the elderly Chinese immigrants living in Montreal.

2.5.2. Functional status and QOL (appendix 2.5.2.)

A positive correlation has been shown in the literature between functional status and QOL. Being functionally independent and active is generally regarded as an important precursor to QOL (Atchley, 1991). In Western societies the individual is seen as a centre of choice for action, and there is an expectation that high control, autonomy, and competence are necessary for optimizing the human potential (Pinquart & Sorensen, 2000). This has been illustrated in existing theories. For example, the Activity Theory of Aging (Havighurst & Albrecht, 1953) posits that the elderly have the need to stay active, resist role losses, and compensate for lost activities with new roles. From this perspective, being active and independent should be an important precursor to QOL whereas losing one's independence due to illness should endanger the maintenance of a positive QOL (Whitbourne, 1985). The subjective importance of functional independence is also

apparent in empirical research; some studies have suggested that reduced function and future care needs are common worries among seniors (Scarborn & Nicki, 1996). In addition, it was reported that reduced competence may restrict preferred activities (Pinquart & Sorensen, 2000), worsen the quality of social relationships (Rook, 1990) and reduce the capacity to defend the self against deterioration (Atchley, 1991).

Both cross-sectional and longitudinal studies of elderly community residents have confirmed the correlation between functional status and QOL. Sugai et al. (1996) investigated 531 elderly community residents aged 75-80 years in Japan and found that life satisfaction of the indoor group (defined as people whose daily activities were limited to those carried out inside their home) tended to be lower than the outdoor group (defined as people whose daily activities extended into their community). These results thus indicate that daily activity in the community elderly residents is crucial to increasing their global life satisfaction. Asakawa et al. (2000) conducted a longitudinal prospective study of 692 Japanese elderly, aged 65 years or older, with high functional capacity at baseline and found that during a two-year period of follow up, 12.3% of the study participants experienced functional decline. They also found that the individuals who experienced functional decline showed a larger decline in life satisfaction. Thus they concluded that functional health status is a prerequisite for high quality of life in old age. The positive correlation between functional status and QOL among the elderly population has also been confirmed by several other studies (Chang et al., 2001; Backman & Hentinen, 2001; Bienenfeld et al., 1997; Kataoka, 1995; Ho et al., 1995; Astrom et al., 1992; Viitanen et al., 1988; Lohr, 1988; Osberg, 1987).

2.5.3. Socioeconomic Status (SES) and QOL (appendix 2.5.3.)

Socioeconomic Status (SES), especially income, is generally suggested by the literature to positively correlate with QOL. SES is defined as an individual's position within a hierarchical social structure. SES depends on a combination of variables, including occupation, education, income, wealth, and place of residence. SES may contribute to QOL through good housing conditions and the use of commercial leisure activities. Several studies have shown the influence of higher income on QOL is evident in the participation in different activities (e.g. volunteering or other leisure activities; George, 1992). Furthermore previous research has also shown that in the case of low material resources, economic strain contributes to low life satisfaction (Pearlin et al., 1981; Pinquart & Sorensen, 2000).

Pinquart et al. (2000) has reported the positive correlation between SES and QOL. They found that elderly individuals with high SES, especially higher income, described high levels of life satisfaction. However, the author also suggested that the correlation between income and QOL in the elderly was relatively weak (with only 3.2 to 4.4% of the variance of QOL that can be attributed to income). The strength of the relationship between these variables may be limited by the fact that older adults often adjust their needs and desires to their financial situation. Herzog & Rodgers (1986) found that in fact seniors reported few discrepancies between their income and their financial aspirations. Thus, if the influence of income on QOL is mediated, in part, by the extent to which

financial needs are met (George, 1992), adjusting those needs to fit income would weaken the association between income and QOL.

The correlation between SES and QOL has also been confirmed by some empirical studies. Choi (2001) analyzed the effects of post-retirement employment on older women's life satisfaction and found that financial resources and especially the older women's concerns about their own financial situation were potent determinants of their life satisfaction. Lu & Chang (1998) investigated 172 elderly people with chronic conditions and found that individuals, who were female, single and financially dependent, reported lower life satisfaction. Ho et al. (1995) recruited a random sample of 843 men and 714 women to estimate life satisfaction and its indicators among these elderly. They concluded that adequate income to meet living expenses was one of the indicators of life satisfaction. Silveira & Ebrahim (1998) investigated 274 elderly people of different ethnic groups in a cross-sectional survey and found that income may be one of the factors which partly explained differences in life satisfaction. Usui et al. (1985) presented an interesting conclusion based on the analysis of data from a 1980 community survey of persons 60 years or older: the better off financially, the respondents perceived themselves to be compared with the relative to whom they felt closest, the greater the QOL.

2.5.4. Age and QOL (Appendix 2.5.4.)

Age is often suggested to correlate with QOL. However, this relationship is not as clear as the one between QOL and the above three indicators (social support, functional status and SES). In old age, there is an increasing risk of health problems and disabilities that

endanger independent living and contribute to lower QOL (Atchley, 1991). At the same time, loss of spouse, relatives, and friends may lead to a decrease in the number of contacts and social networks (Lang et al., 1998). Furthermore, the aged population (especially women) is more likely to live in poverty (Arber & Ginn, 1991), a fact that may impact on their QOL. Nevertheless, it must kept in mind that, overall, adults placed less value on money and more value on the intrinsic rewards of their work, independent of power or salary (Pearlin & Schooler, 1978).

Although age is frequently reported as a potential indicator of QOL, different studies have reported different relationships between age and QOL among the elderly. Some concluded that QOL was consistent across age groups (Hamarat et al., 2002; Hollis 1998); some found an inverse relationship such that the older people who reported the lowest QOL (Beute et al., 2002; Nunley et al., 2000; Lu & Chang, 1998); while other studies found that the elderly enjoyed higher levels of life satisfaction (Kitamura et al., 2002; Hamarat et al., 2001; Li et al., 1998). Chinese older people were reported as more likely to point out that they had acquired greater wisdom and experience with age and that this helped them in their relationships with others (Lau et al., 2003).

2.5.5. Education and QOL (Appendix 2.5.5.)

The relationship between education and QOL is controversial. Some studies suggested that higher education may contribute to a positive appraisal of one's life and a better knowledge of activities, such as participation in organizations, level of involvement in preferred leisure activities that may improve one's QOL (Pinquart & Sorensen, 2000).

Alternatively, some studies found that, in subjects with different levels of education, the more educated participants were more likely to regard self-value, good psychological health and adequate recreation as their main needs in life and compare their present lives to a self-ideal standard for life. Conversely, the less educated participants more often selected having wealth and good physical health as their main needs in life. They compared their present lives with their own previous conditions (Li et al., 1998). As a result, QOL could be negatively correlated with education levels. This negative correlation between education and life satisfaction has been shown in some Chinese studies. Li et al. (1998) investigated 8550 Chinese people living in the Hunan province in China and found that more educated individuals reported lower levels of life satisfaction. An explanation for this finding may lie in that educated people were significantly more inclined to compare their present lives with conditions of other people, whereas less educated study participants were more likely to select their own previous conditions as their reference standard.

Different conclusions were obtained from other studies: Ho et al. (1995) investigated 1557 elderly community residents living in Hong Kong, China and Meeks & Murrell (2001) investigated 1177 US residents. Both studies concluded that educational attainment related to higher life satisfaction. They suggested that the advantage of education might be accounted for by its mediating effect of negative affect between health and successful aging. Higher educational attainment is related to lower levels of negative affect and lower negative affect results in better health and life satisfaction.

2.5.6. Gender and QOL (Appendix 2.5.6.)

The evidence of whether there are gender differences with respect to QOL and how QOL may be different across genders is not consistent. Some evidence suggests that the QOL level of elderly women is lower than that of elderly men. It must be noted that first, women have to live with morbidity and disability longer than men (Katz et al., 1983); second, elderly women are more likely to be widowed than men (Hobbs & Damon, 1996). Finally, elderly women have, on average, lower material resources due to inequities experienced earlier in life (Golombok & Fivush, 1994; Moen, 1996; Arber & Ginn, 1991; 1994). However, there is also evidence showing that women may not have lower QOL than men. Discrepancies between aspirations and success have been suggested as an important source of dissatisfaction among men (Brandtstädter et al., 1993). Since elderly women have lower aspirations as compared to men, this reduces gender differences in life satisfaction. In addition, elderly men and women have different criteria for life satisfaction. For example, women's life satisfaction is primarily based on factors such as having close relationships whereas men's life satisfaction is more strongly tied to their career, including their education attainment and income (Golombok & Fivush, 1994; Whitbourne & Powers, 1994). As a result, elderly women with lower career success may not have lower life satisfaction (Pinquart & Sorensen, 2001).

Findings on gender differences in life satisfaction are not consistent. Some studies concluded that the female gender is significantly associated with lower well-being (Cummings et al., 2002), while others did not find any difference between the satisfaction scores of males and females (Hollis, 1998). There also exist studies that have concluded

that females tended to manifest greater life satisfaction than males (Coke et al., 1992). Pinquart & Sorensen (2001) did a meta-analysis trying to synthesize findings from 300 empirical studies on gender differences in life satisfaction and some other subjective well-being variables. They found that older women reported significantly lower life satisfaction than men, however, gender only accounted for less than 1% of the variance in the overall well being.

2.5.7. Living arrangements and QOL (Appendix 2.5.7.)

Living arrangements have been reported by some studies as one of the indicators of QOL although their relationship is far from clear. For the elderly, the question "who lives with you?" is an important one (Zyzanski et al., 1989). Individuals living with a spouse have access to regular companionship, emotional support, and instrumental assistance (Pillemer et al., 2000). Furthermore living arrangements also influence the elderly's QOL by affecting their health services use, functional independence, psychological adaptation, social adaptation, morbidity and mortality (Hays, 2002).

For the elderly immigrants, the influence of living arrangements may be more complicated. Older immigrants often arrive with cultural expectations for co-residence with family, which are reinforced by the immigration experience (Olson, 2001). At the same time, intergenerational conflicts can arise among co-residential family members. This process could be magnified in multigenerational immigrant households where a communication gap often exists between immigrants and their children, as the younger generation is more acculturated than their parents. Generational differences in proficiency

of English and culture identity can cause a decline in the intergenerational relationship quality (Gelfand, 1994; Thomas, 1995). The elderly who live with a spouse are often reported as having better life satisfaction, functional status, and mental health than the elderly living with children without a spouse (Yeh, 2003; Wilmoth & Chen, 2003; Waite & Hughes, 1999; Zyzanski et al., 1989)

In order to understand the above 7 potential indicators of QOL- social support, functional status, SES, age, education, gender, and living arrangements among Chinese elderly we further reviewed the literature on QOL indicators among this minority group.

2.6. QOL indicators among the elderly Chinese minority

Five studies of QOL indicators targeting elderly Chinese immigrants have been identified in the literature review. (Table 2.6.).

Gee et al. (2000) examined the role of living arrangements in QOL in community dwelling Chinese elderly individuals aged 65 in British Columbia. Based on data from a random sample of 830 persons, three dimensions of QOL- satisfaction, well-being and social support- were estimated among married men and women (living with spouse vs. living intergenerational) and widowed women (living alone vs. living intergenerational). The study found that widows living alone were significantly less satisfied with their health, accommodations, food, spiritual life, and self. In addition, regression analyses indicated that living arrangements were not a significant predictor of life satisfaction or well-being for married men and women, while for widows living arrangements determine

well-being but not life satisfaction. Overall, they found that age, health status, and social support (having friends/confidantes) were better predictors of QOL for elderly Chinese Canadians than were living arrangements.

In another Canadian study of QOL among Chinese elderly, gender differences were found in the SF-36 scores. Daniel et al. (2004) analyzed the secondary data obtained from a multi-site study, Health and Well Being of Older Chinese in Canada. In this study, 2272 Chinese elderly from seven cities were randomly selected and QOL was measured using the SF-36. Results showed that despite the existing age differences, Chinese women reported statistically poorer health than the Chinese men in all of the eight health domains of the SF-36. Similar gender differences were observed in all three age groups: 55 to 64, 65 to 74 and for those 75 years and older. The study results indicate that gender may be an indicator of QOL among Chinese elderly.

More QOL indicators were explored in a US study conducted by Ren & Chang (1998) that investigated 219 elderly Chinese living in Boston. Their QOL was measured using the Chinese version of the SF-36; the multivariate relationship between the exploratory variables and the SF-36 general health perception was explored using the ordinary least square regression analysis. It was found that the number of co-morbid conditions, education, difficulty in seeking medical care, social support, and belief in Chinese medicine are explanatory variables of QOL among the Chinese elderly. Among them, co-morbid conditions and difficulty in seeking medical care have a significant, negative impact on general health while education attainment, social support and belief in Chinese

medicine have positive effects on general health. Furthermore, it was discussed that the positive association between the belief in Chinese medicine and general health perception maybe the result of a selection process. It is possible that those who are sicker are more likely to turn to western medicine.

In addition, as are the special problems among minority groups, language difficulty and under use of health services have been reported as potential indicators of QOL among Chinese elderly. Liao et al. (1995) explored the health problems and health needs in the local Chinese community living in Glasgow in a cross-sectional study. Several data collection methods were used in this study, including face-to-face and telephone structured interviews, postal and hand delivered questionnaires. A total of 800 questionnaires were processed, and 493 were completed, giving an overall response rate 61.6%. The results indicated that the health status of Chinese residents in Glasgow was poorer than that of the local population. An important finding of the study was that the Chinese immigrants living in Glasgow under-use health services and thus they have health needs that are unmet. Language difficulties appear to be the main barrier to effective use of existing health services and benefiting from the health promotion and health education programs. These results suggest that language difficulties and under use of health services may be the main indicators of well-being among these Chinese elderly living outside of China.

In addition, the influence of ethnicity and SES on QOL was studied by Thumboo et al. (2003) in a multi-ethnic urban Asian population. In this disproportionately stratified,

cross-sectional, population-based survey, the QOL of 4122 Chinese, Malays and Indians were investigated using the SF-36. Multiple linear regression models were used to analyze the influence of ethnicity and SES on SF-36 scores while adjusting for the influence of other determinants of Health Related Quality of Life (HRQoL). The results showed that ethnicity and SES independently influenced HRQoL, with mean differences in SF-36 scores due to ethnicity ranging from 1.4 to 13.1 points. SES, that was measured by the educational level and housing type, was also associated with the SF-36 scores (0.5–0.6 point increase per year of education and 3.5–4.0 point increase with better housing type, respectively). They also found that better HRQoL was associated with better family support while poorer HRQoL was associated with acute and chronic medical conditions and sick days. This study concluded that ethnicity and SES were associated with clinically important differences in HRQoL in the study population. Social support and health status may also be important indicators of QOL among the elderly Chinese minority.

In the table that follows, a summary of the indicators identified in the studies addressing the Chinese elderly is presented. These indicators are age, gender, SES, level of education, living arrangements, difficulty in seeking medical care, language difficulties, health status, social support, ethnicity and belief in Chinese medicine. Co-morbid conditions as an indicator explored by the Boston study can be included in the construct "health status".

Table 2.6. : Indicators of QOL among Chinese elders

Author	year	Sample size	Study design	measurement	location	Indicators
Ren & Chang	1998	219	Cross sectional survey	SF-36	Boston USA	Co-morbid conditions; education; difficulty in seeking medical care; social support; belief in Chinese medicine.
Thumboo et al.	2003	4122	Cross sectional survey	SF-36	Singapore	Ethnicity, SES social support and health status
Liao & McIlwaine	1995	493	Cross sectional survey	------	Glasgow. Scotland	language difficulties
Gee et al.	1999	830	Cross sectional survey	Questionnaire designed in this study	Vancouver, Victoria, Canada	Age, health status, social support, Living arrangements
Daniel et al.	2004	2272 Chinese 9423 Canadian	Secondary data analysis	SF-36	7 cities of Canada	gender

Finally, it is necessary to mention a study done in Taiwan which shares the same QOL measurement and study design with our study. Tseng et al. (2001) explored the subjectively perceived QOL and its indicators among elderly nursing home residents in Southern Taiwan. In this study, 161 participants 65 years or older were recruited from 10

nursing homes in Kaohsiung City in Taiwan. The outcome variable in this study was QOL and the indicators were demographic characteristics including sex, age, marital status, education level, SES, religious beliefs, previous residential status before being admitted to a nursing home, and the length of residence in a nursing home, health status, social support, and frequency of interaction with family. Quality of Life was measured by the Ferrans and Powers Quality of Life Index-Nursing Home Version. Health status was measured by the Physical Function Scale (Shyu et al. 1993) and the Activity of Daily Living (ADL) Function Index (Shyu et al.1993). Social support was measured by the Social Support Scale (Chang 1996). Interaction with family was measured by an Interaction with Family Scale that was generated in this study. Statistical methods included frequency, mean, standard deviation, standard score, one way ANOVA, Scheffe's comparison procedure, Pearson correlation, and stepwise multiple linear regression analyses. The results showed that the average standard total QOL score among the study population was 52.87, lower than the standard score of nursing home residents in the US (around 70) (Oleson 1992). The significant predictors of QOL were ADL, SES, social support, and physical functions. In our study we used a similar study design and measurement methods as those in the Taiwan study. However the target population of our study was different from the Taiwan study. The target population in the Taiwan study was Chinese elderly living in long term care facilities in their home town; while in our study, the target population was elderly Chinese community residents living in Montreal that happens to be far away from their hometown. In spite of the differences, the Taiwan study could serve as a good reference for our study in terms of study design and measurement tools.

Chapter 3 RATIONALE AND OBJECTIVES

According to Canada Census 2001, there are around 52,110 Chinese immigrants living in Montreal. One can presume that the QOL of this large minority group is a concern of health service providers and policy makers. To our knowledge, there is no QOL study conducted among this minority group in Montreal until now. Although the BC study of Chinese elderly (Chappell et al.,1995) can provide us some information on life satisfaction among Chinese elderly living in BC, we are still not clear about the QOL among Chinese elderly living in Montreal due to the regional differences that may exist (Chappell et al. 2000). In the absence of any information on the QOL of the Chinese elderly living in Montreal, it is difficult for health service providers and policy makers to establish health policy and health programs for improving the QOL among this population. The present study was designed to investigate the QOL among the elderly Chinese immigrants from several community centres in Montreal. It can provide information on the QOL and its indicators among Chinese elderly; at the same time, it is a starting point of QOL research of the largest visible minority living in Montreal.

Primary goal: To estimate the QOL of the elderly Chinese minority living in Montreal.

By collecting quantitative and qualitative data of QOL among the study participants, we not only aim at estimating the overall QOL and the sub domains of QOL, including the health and function domain, the psychological/spiritual domain, the social and economic

domain, and the family domain, but also at investigating how satisfied and how important each common component of QOL is for each of the participants. We believe that this information can help us to identify common problems among Chinese elderly living in Montreal.

Secondary goal: To explore the indicators of QOL among elderly Chinese people.

The following potential indicators of QOL among the Chinese elderly were examined as possible correlates of QOL of the study population: Age, gender, SES, education level, ADL, social support, language difficulties and living arrangements. These potential indicators were identified based on an extensive literature review.

Chapter 4 METHOD

4.1. Study Design:

This is a cross-sectional survey of the QOL status and of its indicators among the elderly Chinese minority living in Montreal. All the study participants were interviewed and filled out questionnaires containing demographic questions, the Ferrans and Powers Quality of Life Index (QLI), the Dukes Social Support questionnaire and the Lawton-Brody's Instrumental Activity of Daily Living scale. The data was analyzed using both descriptive and inferential statistical methods.

4.2. Study Population:

The target population of this study is elderly immigrants of Chinese origin living in Montreal. The Chinese minority is defined as those individuals born in China (including Hong Kong and Taiwan), speaking Chinese, living in Canada and having no intention of moving back to their country. Volunteers who satisfied the inclusion criteria outlined below were recruited in the study.

Inclusion criteria:

- Age≥65 years.
- Chinese elderly living in Montreal and having no intention to leave permanently.
- Born in China
- Speaking Chinese

- Having the ability to answer a questionnaire.
- Having Good cognitive function to provide reliable information; this is determined by a score of more than eight in the Short Portable Mental Status Questionnaire.

The cognitive function of the participants was evaluated using Pfeiffer's (1975) "The Short Portable Mental Status Questionnaire". This scale includes 10 items. Scaled responses range from 0 to 10. The higher the score, the higher the cognitive function is estimated to be. The individuals who had a score of more than eight were deemed as having good cognitive function.

4.3. Study Variables:

The outcome variable of this study was the QOL of the elderly Chinese minority living in Montreal; the indicators tested were age, gender, SES, education level, ADL, social support, language difficulties and living arrangements.

In the present study, we included Activity of Daily Living Function as an indicator, instead of health status that has been used in the literature because health status is a broad construct that may refer to everything related to health. According to the WHO definition, health is composed of physical heath, mental health and social health. In this study, mental health has been measured using the Short Portable Mental Status Questionnaire and only elderly showing good cognitive function and scoring more than 8 were included. Social health is related to social support and has been included as an

indicator of QOL. Therefore, among the three components of "health status", physical health is the only one that has not been measured. With regard to physical health, Activity of Daily Living (ADL) function has been found to be crucially important for the elderly in order to maintain their QOL (Katz et al., 1983; Mor, 1998); we thus measured ADL as a QOL indicator in this study.

Several potential indicators mentioned in the literature were not tested in this study. "Belief in Chinese medicine" was not included since it could have been introduced by a selection process as mentioned in the study report; it is possible that those who are sicker are more likely to turn to Western medicine. "Unhealthy lifestyle" was also not included since it was found in only one study done in China while no similar report exists in North America. For the variable "difficulty in seeking medical care", although it was mentioned in the studies conducted in America and Scotland as a factor that could indicate the QOL of Chinese elderly, in the Canadian studies, it was found that the use of health services within the Canadian Medicare system by Chinese elderly was very similar to what was reported for the general Canadian senior population (Chappell et al., 1998; 1997). Thus, "difficulty in seeking medical care" was not listed as an indicator of QOL here. The indicator ethnicity mentioned in the Singapore study was not tested as a potential indicator in our study. As in the Singapore study, not only Chinese, but also Malay, and Indian participants were included. The QOL in these three ethnic groups was compared and ethnic differences were defined. However, in our study, the Chinese minority was the only ethnic group being investigated. It was thus impossible to study the effect of ethnic differences in this thesis.

4.4. Measurement:

The measurement instruments were selected based on the following criteria: (1) the concepts measured by the instruments were indeed what we investigating in our study. For example, QLI measures QOL as life satisfaction, which fits our definition of QOL used in this study. (2) The measurements were appropriate for our study population - Chinese elderly. (3) The psychometric properties were known with acceptable levels of reliability and validity.

The Ferrans and Powers Quality of Life Index (QLI) (Ferrans, 1985) was chosen as the measurement instrument of QOL (Appendix 4.4a.). The QLI was developed based on the life domains identified by Flanagan to measure QOL in terms of satisfaction with life. It is a unique instrument whose scores reflect satisfaction with the aspects of life that are valued by the individuals and that weight satisfaction responses using importance ratings. It covers all the components of QOL that are needed for this study and it measures QOL as "subjective satisfaction", in line with the definition used in this study. The instrument consists of two parts: the first measures satisfaction with various aspects of life and the second measures importance of those same aspects for the individual. Examples of the items are: "How satisfied are you with your taking care of yourself without help?" "How important is it to you to take care of yourself without help?" Responses range from a score of one (very dissatisfied/very unimportant) to six (very satisfied/very important). The items include four domains of quality of life: health functioning, psychological/spiritual, social and economic, and family. The overall score and subscales

scores are computed by using the established procedure (Ferrans, 1996; Ferrans & Powers, 1985; Ferrans &Powers, 1992; Ferrans, 1990; Warnecke et al., 1996). This procedure includes 4 steps: 1) recode satisfaction scores; 2) weight satisfaction responses with the paired importance responses; 3) obtain preliminary sum for the overall score; 4) obtain finally overall QLI score. According to this procedure, the item scores range from -15 to +15; and the total and subscale QOL scores range from 0 to 30. The QLI is a well-established instrument with substantial evidence of reliability, validity and sensitivity. Internal reliability has been demonstrated by Cronbach's alphas ranging from .84 to .98 across 26 studies. Content validity of the QLI is supported by the fact that items were based both on an extensive literature review of issues related to quality of life and on reports of patients regarding the quality of their lives (Ferrans & Powers, 1985). Construct validity of the QLI was highlighted by strong correlations between the overall (total) QLI score and the Campbell, Converse, and Rodgers' (1976) measure of life satisfaction. (Bliley & Ferrans, 1993; Ferrans & Powers, 1985; Ferrans & Powers, 1992; Anderson & Ferrans, 1997; Ferrans 1990). It is also supported by the factor analysis and the contrasted groups' analysis (www.uic.edu/orgs/qli). QLI has been translated into Chinese. There exist a number of versions addressing the general population and individuals with various disorders. The generic version of this instrument was chosen for this study given that the study population comprises community residents without specific disorders.

Age was self-reported by the participants themselves. SES was measured based on their family income that was also self reported; the participants were asked to choose from five

categories: income less than 25,000 a year, 25,000—50,000 a year, 50,000—75,000 a year, 75,000—100,000 a year, and more than 100.000 a year. Educational level was self-reported in terms of years of formal education. Regarding language difficulties, the participants were asked to rate their language abilities in Chinese, English, and French as being poor, fair, or good. As for the living arrangements, individuals were asked to choose among the following options: living with their children, living with their spouse, living with their spouse and children, or living alone. (Appendix4.4d)

Activity of Daily Living Function was measured using Lawton-Brody's Instrumental Activity of Daily Living scale (IADL) (Appendix 4.4b.). It comprises 8 items, inquiring on the ability to use a telephone, shop, prepare food, do housework, do laundry, transport, take medication, and handle finances. It has been used widely to assess functional capabilities of elderly persons (Lawton & Brody, 1969). Lawton's IADL has shown great reliability with Intraclass Correlation Coefficients (ICC) range from 0.901 to 0.95 (Hokoishi et al. 2001). The validity of IADL was supported by its correlation with Physical Classification scale (PC), Physical Self-maintenance Scale, Mental Status Questionnaire (MSQ), Behaviour and Adjustment Rating scales (BA) (Lawton & Brody, 1969).

Social support was measured using the Dukes Social Support Questionnaire (Appendix 4.4c.); which was developed to measure an individual's perception of the amount and type of personal social support. The instrument includes 11 items, grouped into four subscales: quality of support, confidant support, affective support, and instrumental

support. An example is: "Do you know what is going on with your family and friends?" the choices range from "none of the time" to "all of the time". The score of each item is related to a different choice. Higher scores reflect higher perceived social support. This instrument has been widely used and has shown to have good reliability and validity (Bellon Saameno et al., 1996). It can be administered by the interviewer or be self-administrated.

Both Lawton-Brody's Instrumental Activity of Daily Living scale (IADL) and the Dukes social support questionnaire were created in the English language. Since the Chinese version of the questionnaires was necessary in this study, they were translated into Chinese by a certified translator while another translator performed a back translation into English. Finally, the original English questionnaires and the back translated questionnaires were compared to verify content convergence.

We also asked each participant one open question: "What is important for your quality of life?" By analyzing the data collected from this question, we were seeking to obtain points that were not necessarily elicited through the QLI questionnaire.

4.5. Data Collection:

At a first step, this study was submitted for ethics approval (Appendix 4.6.). Upon obtaining the ethics certification, the investigator visited the Montreal community centers for Chinese elderly to identify individuals who would like to participate in this study. After explaining the study process, the consent form and the interview questions, the

participants who agreed to participate were asked to sign the consent form (Appendix 4.5.) and answer the interview questions at their convenience. The participants were interviewed on an individual basis by the primary investigator in the Chinese community centers. During the interview process, the participants were asked questions about their demographic characteristics, an open question on QOL, their satisfaction with each component of quality of life, their activity of daily living function, and their social support. The interview lasted about 15-30 minutes. Forty participants were interviewed by the investigator, and one participant completed the questionnaires by self-administration.

4.6. Statistical analysis:

To estimate the QOL among the elderly Chinese minority living in Montreal, descriptive statistics were used; means and SD were calculated for each item, each subscale and the total QOL scale. The data of the open question was analyzed by content analysis method. As for exploring the indicators of QOL, we first performed multiple correlation analysis between two independent indicator variables to estimate collinear relationships, since we could not put the strongly correlated independent variables together into the multiple regression models. We then ran a simple linear regression analysis by adding the indicator variables one by one into the regression model. In order to identify the best models of QOL indicators, we further ran stepwise regressions with the QOL scores as the dependent variables and the QOL indicators as the independent variables.

4.7. Power Analysis and Sample Size Justification:

Given the descriptive nature of the study, and the type of statistical analyses used for the analysis of the primary goal, there were no specific restrictions with respect to sample size for the primary objective. As for the secondary goal, since we ran the stepwise regression models exploring the indicators that significantly contributed to the variance of the QOL among the elderly Chinese participants, the sample size needed to be sufficiently large to have adequate statistical power. A rule of thumb for sample size calculation in stepwise regression procedure is that one needs to have 6 – 10 study participants for each independent variable in the model; given that there were only 3 to 5 variables in our five final models, the sample size of 41 participants was considered to be adequate. We also calculated the power According to Cohen's (1988) method. Except for the QOL health and function subscale model, all the other four regression models had power more than 80%; we thus concluded that the sample size was acceptable to detect the statistical significance in the multiple regression analysis.

Chapter 5 STUDY RESULTS

5.1. Description of the study sample

This is a cross-sectional survey study to estimate the QOL of the elderly Chinese minority living in Montreal and to explore the QOL indicators. From September 2004 to January 2005, forty-one participants were recruited into this study and completed the questionnaire successfully. Most of the participants had a very low family income less than $25,000 a year (73%); only a few participants described that they were fluent in English (9.8%) or French (7.3%). The mean age of the participants was 72 years; their formal education was on average 11 years; more than half of them were female (58.5%); and more than one third of them were widowed (36.6%). Most of them (78%) lived with spouse and/or children. Thirty-four participants were interviewed in Mandarin Chinese, while seven participants were interviewed in Cantonese by the investigator and an interpreter. (Table 5.1.):

Table 5.1. : Demographic characteristics of study sample

Variables	N (%)
Gender	
Male	17 (41.5)
Female	24 (58.5)
Marital Status	
Single	1 (2.4)
Married	24 (58.5)
divorced	1(2.4)
Widowed	15 (36.6)
Income	
less than 25,000 a year	27 (73.0)
25,000—50,000 a year	5 (13.5)
50,000—75,000 a year	3 (8.1)
75,000—100,000 a year	1 (2.7)
more than 100.000 a year	1 (2.7)
Living Arrangements	
living alone	9 (22.0)
living with their spouse	11 (26.8)
living with their children	10 (24.4)
living with their spouse and children	11 (26.8)
Chronic Conditions	
With	21 (51.2)
Without	20 (48.8)
Ability to communicate	
English	
Good	4 (9.8)
Fair	14 (34.1)
Poor	23 (56.1)
French	
Good	3 (7.3)
Fair	8 (19.5)
Poor	30 (73.2)
Chinese	
Good	39 (95.1)
Fair	2 (4.9)
Poor	0 (0.0)
	Mean (SD)
Age	72.4 (5.2)
Immigration Years (since immigrating)	14.3 (9.1)
Education Years	11.0 (5.8)

In this study, Age, gender, SES, education level, ADL, social support, language difficulties and living arrangements were tested as potential predictors.

The data on age, gender, SES, education level and language difficulties has been reported in Table 5.1. Briefly the study participants' ages range from 65 to 85 years old and their Education level ranges from illiterate to 23 years of formal education. However, their ADL show little variation with the scores ranging from 6 to 8, with 70.7% of the study participants obtaining the full score (8). Their language ability also shows limited variability as a large number of them could not speak English or French fluently. The mean (SD) on the Dukes social support total score was 35.9 (5.8), with a range from 24 to 47. The means and (SD) of the Dukes social and the satisfaction subscale scores, respectively, were 9.3 (1.9) and 26.6 (4.6).

5.2. Description of the study sample on the outcome variable

5.2.1. Quantitative data of the QLI

Overall, the participants described a very high level of QOL. All their total and subscale QLI mean scores were higher than 24 (out of a full score of 30); which are higher than the US norms. The mean (SD) scores in this study and US norms are presented in Table 5.2. No Canadian norm exists for this Scale.

Table 5.2: QLI total and subscale mean scores in this study and in the US norms:

QLI total and subscales	**Scores in this study** Mean (SD)	**US norms** Mean (SD)
Total QLI	25.0 (3.4)	23.0 (4.0)
Health & Functioning Subscale	24.8 (3.8)	23.2 (4.5)
Social & Economic Subscale	24.6 (3.9)	21.8 (4.1)
Psychological/Spiritual Subscale	25.1 (3.9)	23.0 (5.2)
Family Subscale	25.7 (4.4)	25.6 (4.5)

Since part of our primary goal was to identify common QOL problems among the participants by looking at their satisfaction with each QOL component, we further

checked the item scores as in the QLI where each item represents a QOL component. Overall, we find that some participants may be suffering from pain since the average item score of "How satisfied are you with your pain" was the lowest (4.4 ± 11.0); at the same time this item also showed the largest variation, which suggests that the participants varied greatly in satisfaction with pain. In fact, 16 individuals stated that pain did not bother them at all, while 5 individuals stated that they were very dissatisfied with their pain problem. In addition some of the participants might have been worrying about their health as their mean (SD) item score on "how satisfied are you with your health" was very low (6.4±10.2). Two other low scoring items were "How satisfied are you with your sex life?" (5.3 ±3.9) and "How satisfied are you with your personal appearance?"(6.1 ±7.9). However, it must be noted that the participants' satisfaction with their sex life is difficult to estimate since 33 of the participants did not answer this question.

Some other low-scoring items include "How satisfied are you with your education?" 7.4±(8.7) and "How satisfied are you with your achievement of personal goals?" 7.6 ±(7.1). Furthermore, there were some items that had several missing data, they are: "How satisfied are you with your spouse, lover, or partner?" (20 missing); "How satisfied are you with your job?" (30 missing); "How satisfied are you with your chances of living as long as you would like?"(16 missing); "How satisfied are you with not having a job?" (14 missing); and "How satisfied are you with your faith in God?" (11missing).

Although the participants showed low score for some specific items, they never the less obtained very high scores, overall, for most of the other items. The high scoring items included: "How satisfied are you with your ability to take care of yourself without help?" 13.5±(3.2) and "how satisfied are you with the amount of control you have over your life?" 13.9±(2.3). This indicates that the Chinese elderly participating in this study have the capacity of taking care of themselves and enjoy their independent lives. (see Table 5.2a.)

Table 5.2a. : Summary of QLI scores

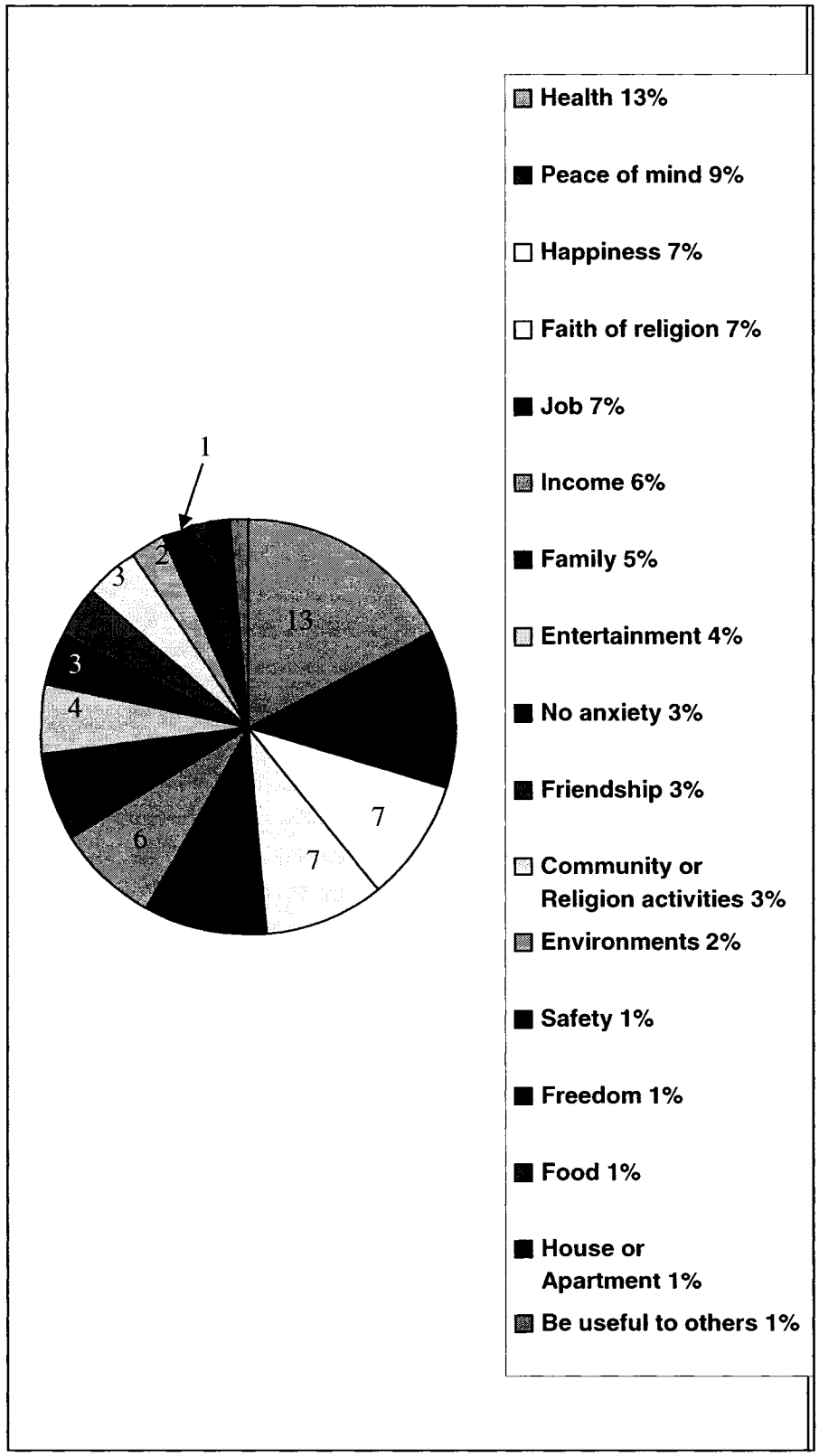
QLI scores	Mean (SD)
Health and Functioning Subscale	
Item 1: Health	6.4 (10.2)
Item 2: Health care	9.7 (6.8)
Item 3: Pain	4.4 (11.0)
Item 4: Energy (fatigue)	10.5 (5.7)
Item 5: Ability to take care of yourself without help	13.5 (3.2)
Item 6: Control over life	13.9 (2.3)
Item 7: Chances for living as long as you would like	10.9 (6.8)
Item 11: Sex life	5.3 (3.9)
Item 16: Ability to take care of family responsibilities	10.8 (6.1)
Item 17: Usefulness to others	10.9 (4.7)
Item 18: Worries	10.0 (6.9)
Item 25: Things for fun	8.2 (8.7)
Item 26: Chances for a happy future	11.1(7.4)
Subscale score	24.8(3.8)
Social and Economic Subscale	
Item 13: Friends	11.8 (5.3)
Item 15: Emotional support from people other than your family	10.0 (6.2)
Item 19: Neighborhood	10.4 (7.6)
Item 20: Home	11.0 (6.7)
Item 21: job	8.6 (5.3)
Item 22: not having a job	9.6 (5.7)
Item 23: Education	7.4 (8.7)
Item 24: Financial needs	10.3 (5.8)
Subscale score	24.6 (3.9)
Psychological/Spiritual Subscale	
Item 27: Peace of mind	12.9 (6.4)
Item 28: Faith in God	12.3 (6.9)
Item 29: Achievement of personal goals	7.6 (7.1)
Item 30: Happiness in general	11.4 (5.5)
Item 31: Life satisfaction in general	11.3 (5.0)
Item 32: Personal appearance	6.1 (7.9)
Item 33: Self	9.8 (5.1)
Subscale score	25.1 (3.9)
Family Subscale	
Item 8: Family health	10.0 (7.3)
Item 9: Children	11.4 (7.0)
Item 10: Family happiness	11.4 (5.3)
Item 12: Spouse, lover or partner	11.1 (7.1)
Item 14: Emotional support from family	9.8 (6.8)
Subscale score	25.7 (4.4)
QOL total score	25.0 (3.4)

It is worthwhile to note that both the highest and the lowest item scores occurred in the QOL Health and Functioning subscale with some item scores showing a very large variation. This is in agreement with the known phenomenon whereby, generally, the elderly have a large variability in their health and function status.

5.2.2. Qualitative data from the QOL open question:

In order to collect qualitative information on the participants' perception of their QOL, each participant was asked an open question: "What is important for your QOL?" According to the responses, 17 themes were generated as follows: health, peace of mind, happiness, faith or religion, job, income, family, entertainment, no anxiety, friendship, community or religious activities, environment, safety, freedom, food, house or apartment, and being useful to others. By reviewing these themes together with the QOL components in QLI, we conclude that all these themes are subsumed within the QOL components listed in the QLI. We also analyzed the relative importance of the 17 themes by counting the number of times a particular theme was mentioned. Clearly, "health" was the most important QOL component based on its high frequency of occurrence in the answers provided. "Peace of mind" was the second most important. Chart 5.2. illustrates the themes in a pie graph, listed in the order of their relative importance.

Chart 5.2.: The QOL components summarized from the qualitative responses:



5.3. Description of possible final models of QOL indicators

To address the secondary goal of the study, separate univariate and multiple regression analyses were performed for each of the outcome measures. Residual plots were examined to verify linearity, normality and homoscedasticity assumptions. For the nominal independent variable "living arrangements" dummy variables were created with the "living alone" category acting as a reference group. Additionally, given the severely skewed data distribution for SES and language difficulty, we dichotomized the responses of these variables in the regression analysis. For example, in our questionnaire, SES had five categories: less than 25,000 a year; 25,000—50,000 a year; 50,000—75,000 a year; 75,000—100,000 a year; more than 100.000 a year. However, we found that 73% of the study participants were in the first category 'less than 25,000 a year'. So we dichotomized SES into two categories in the data analysis as less than 25,000 per year and more than 25,000 per year in order to balance the sample size in each category.

Stepwise selection procedures were applied using a significance level of 0.15 for entry and 0.25 for elimination as an assisting tool in selecting final regression models. At a final stage all the results were analyzed and compared to determine the best models for the QOL total and subscale scores, separately. The final set of the determinants identified to make up the best linear regression models for each of the outcome measures is presented in the table 5.3a. These five final models explained 32%, 11%, 41%, 28% and 43%, respectively, of the variation in the QOL total, health and function, social and economic, psychological and spiritual and family subscale scores. It is worthwhile to note that for the QOL health and function subscale score none of the combinations of the potential determinants turned out to be statistically significant and the most "promising" model is reported in the table 5.3a as a final selection based on the highest coefficient of determination (R^2).

It is interesting to note that living arrangements turned out to be a very important predictor in four of the five final models and the living alone group always showed a better QOL outcome compared to the other living arrangements groups. In the final model with the QOL total score as the dependent variable, the QOL score of the living

with spouse group was, on average, 4.7 lower than the living alone group and the QOL score of the living with spouse and children group was, on average, 4.6 lower than the living alone group. Similar differences were found in the final models with QOL health and function, QOL social and economic, and QOL family subscale scores as the dependent variables. (Table 5.3a.)

Table 5.3a. : Possible final models of QOL indicators:

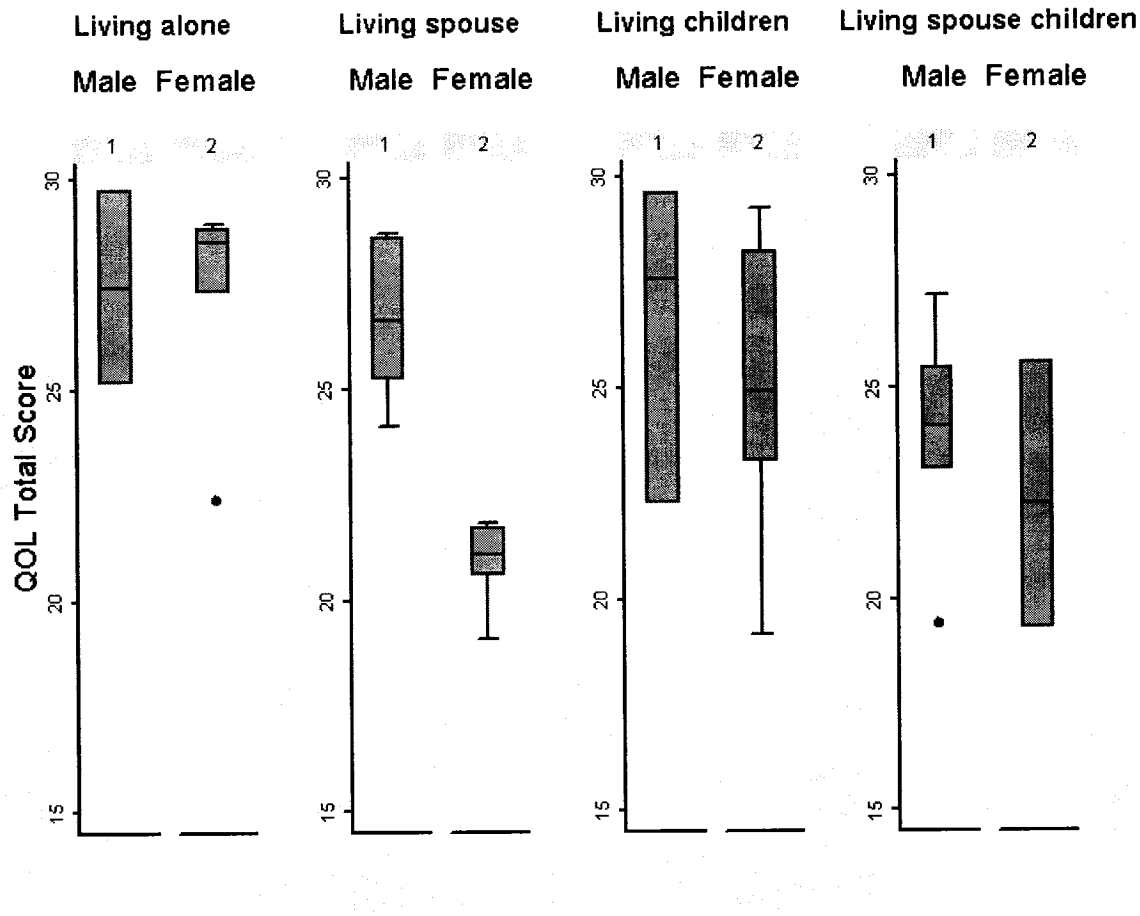
Dependent variable	Indicators	β	p	r^2
QOL total score				0.32
	Living arrangements			
	Living alone	0		
	Living spouse	- 4.7	0.001	
	Living children	- 2.3	0.097	
	Living spouse children	- 4.6	0.002	
	gender	- 2.3	0.029	
QOL health and function subscale score				0.11
	Living arrangements			
	Living alone	0		
	Living spouse	-3.1	0.078	
	Living children	-1.8	0.298	
	Living spouse children	-3.1	0.071	
QOL social and economic subscale score				0.41
	Social support			
	Duke satisfaction subscale	0.2	0.040	
	Living arrangements			
	Living alone	0		
	Living spouse	-5.7	0.000	
	Living children	-2.2	0.142	
	Living spouse children	-3.4	0.027	
QOL psychological and spiritual subscale score				0.28
	Social support	0.3	0.009	
	Duke satisfaction subscale	-0.2	0.019	
	Education	-3.0	0.016	
	Gender			
QOL family subscale score				0.43
	Living arrangements	0		
	Living alone	- 4.7	0.006	
	Living spouse	- 4.2	0.016	
	Living children	- 6.6	0.000	
	Living spouse children	- 0.3	0.003	
	Education	- 2.8	0.028	
	Gender			

* 3 dummy variables generated for the categorical variable living arrangements – reference group "alone" category

5.4. The relationship between gender and living arrangements

It is very interesting to note that the living alone group obtained the highest QOL score in this study. It is also very interesting to note that although 'gender' as a QOL indicator appeared in three of the regression models with the QOL total score, QOL social and economic subscale score and QOL family subscale score as the dependent variables, it did not emerge as significant in the univariate regression analysis. In order to clarify the relationship between gender and living arrangements, box plots were generated to compare QOL among the male and female participants in different living arrangements groups (Graph 5.3). It was found that women living alone obtained higher QOL scores than men living alone and women living with spouse and/or children. However in all the other three living arrangements groups, the QOL score of women was lower than that of men. The highest QOL score difference appeared in the living with spouse group, with men rating 5.6 higher than women.

Graph 5.3: QOL among male or female participants in different living arrangements groups



Chapter 6: DISCUSSION

In the present study we conducted a cross sectional survey of the QOL among Chinese elderly 65 years or older. Forty one volunteer study participants were recruited from 12 Chinese community centers in Montreal. There are two important findings from this study: 1). the Chinese elderly in our study are very satisfied with their late life; 2). living arrangements and gender interact with each other to predict QOL among the study participants. The study results showed that women living alone enjoy higher level of QOL than men living alone and women living with spouses and/or children.

6.1. Interpretation of QOL among the Chinese elderly

The high level of QOL described by our study participants is similar to the findings of the BC study as mentioned in the background section (2.2) despite the fact that the SES was very low in both studies. SES has been suggested as an important predictor of life satisfaction among immigrants (Silveria & Ebrahim 1998) and even among Chinese people living in mainland China (Beydoun & Popkin, 2005). Given this discrepancy, we are questioning why these Chinese elderly expressed high level of life satisfaction in spite of their low SES.

In the following section, we attempt to interpret the high QOL level among the low income Chinese elderly from different perspectives. One of the most important mechanisms could be their low expectation from life that had been described by them in the open QOL question. Since QOL was measured as subjective life satisfaction in this study, the level of satisfaction could be measured by the gap between life experience and life expectations. Although generally SES among our study participants is low, they can still feel satisfied given their low life expectations. Some life events could have contributed to the low life expectations among these study participants. Some of them might be victims of the war between Japan and China and may have suffered from starvation and epidemics when they were young; a large number of them might have immigrated to Canada for pure survival reasons or in order to work as 'cheap' laborers. It is thus not surprising that they now love their peaceful late life and that their life

expectations are very low. At the same time, this implies that our results may not be generalizable to the new generation of Chinese immigrants due to a cohort difference. Younger Chinese immigrants are usually 'technical' immigrants and they enjoy high SES in China. After they immigrated to Canada, they usually experience difficulty of finding job, and their educational credentials in China could not be recognized by Canadian employers (Wang & Lo, 2005). So the subjective QOL among these young immigrants might be very different from the Chinese elderly in our study. A future study of life satisfaction among these young Chinese immigrants is needed.

Furthermore since our study participants were recruited from community centers, their particular characteristics may have contributed to the high QOL. First, all these elderly could walk, drive or take buses to arrive to the community centers. It must be noted that they reported very high IADL function in this study. Indeed, their physical health and independent functional status could be crucial in determining their high level of QOL. It has been reported that functional status is a prerequisite for higher QOL (Asakawa 2000) and functional independence is crucial to increasing global life satisfaction in community elderly residents (Sugai 1996). Second, our study participants enjoyed their social activities and social interactions in the Chinese community centers. Leisure activity participation and social interaction have been reported as strong predictors of life satisfaction (Sparks 2004; Menec & Chipperfield 1997). Third, more than half of the participants were recruited from churches and temples. Their religious activities and spiritual beliefs might have also contributed to their QOL. Religious activity has been reported as being positively associated with life satisfaction (Ayele et al., 1999). Finally, quite a few participants were working as volunteers in community centers. Unpaid work is thought to be of intrinsic value to an individual's mental health (Dyer, 1993), that may contribute to the high QOL among some of the participants.

The Chinese culture may have also played a role in their high QOL. In this study, when the participants were asked "what is important to your QOL?" Many elderly mentioned a Chinese saying: "people who are satisfied with their current lives and don't expect too much are always happy." Satisfaction is a concept that measures the distance between

life experience and life expectations. This Chinese saying fosters the philosophy that people can enjoy satisfaction by lowering their expectations.

Age may have also contributed to the high QOL level among the study participants. The high level of life satisfaction among Canadian elderly had been reported by the 1995 Physical Activity Monitor survey where it was found that the older the Canadian adults, the more satisfaction they enjoy. Among the Canadian adults 18 years old and over, elderly 65 and older expressed the highest level of life satisfaction with home life, social life, leisure activities and physical activities. Chinese elderly have been reported in the literature as more likely to point out that they had acquired greater wisdom and experience with age and this helped them in their relationships with others (Lau et al. 2003).

In addition, some high and low scored QLI items merit further interpretation. The QLI item measuring "satisfaction with the ability for self care" obtained the highest average score. This implies that the elderly Chinese individuals in our study were able to take good care of themselves. This finding is also confirmed by the high score of Activity of Daily Living Function among the participants. At the same time, we must point out that this result may not be generalizable to all the Chinese people living in the community, since the participants in this study were those who visited the community centers regularly and may thus have been healthier than those who have had to stay at home. The scores of the QLI items "satisfaction with pain" and "satisfaction with health" were the lowest as compared to the other item scores in this study. This finding is similar to the BC study results, suggesting that Chinese elderly, in general, may be suffering from health problems and body pain as much as the other Canadian seniors.

6.2. Interpretation of QOL indicators

It seems surprising that the study participants living alone described higher life satisfaction than the other living arrangements groups, since previous research has suggested that older adults living alone had lower levels of morale and higher depressive symptoms, mental health service use, and suicide risk (Dean Kolody, Wood, & Matt,

1992; Florio et al., 1997; Mindel & Wright 1982). We further noted that there were only two men in the living alone group and the median QOL score of men is lower than that of women. This is different from all the other three 'living arrangements' groups in which men scored higher than women. So, indeed, it is the women that determined the high average QOL score in the living alone group.

We further examined QOL scores among women in different living arrangements groups. Women living alone described the highest level of QOL as compared to women living with spouse or/and children. As a result, we are questioning why women who live with their family perceive themselves as having lower life satisfaction. One possible reason could be that these women have to take care of their whole family when they live with spouse or/and children. There exist certain studies suggested that caregiver burden may affect both physical and mental health among women. Pizzetti et al. (2005) investigated 57,830 elderly in Italy and found that women living alone experienced lower mortality than those living with partners. They suggested that being married provided a protective role against mortality in late life only for men. They also pointed out that those elderly women who took care of their husbands or relatives may not have taken equally good care for themselves. Hahn (2002) argued that many widows perceived their age and widowhood as less of a burden and more as a form of liberation from the social and economic restrictions of married life. In addition, the Chinese culture might also contribute to the low QOL level of Chinese women living with family. Friedemann (2005) described older Chinese women as victims of Confucianism in that they had internalized the duty to serve their husband and shaped their identity accordingly. They had strong feelings of obligation to provide care in their family. When these Chinese women lived with other family members especially their husbands, they had to serve their family members everyday which may cause deterioration of their own health.

The social role of women within their families merits further study and discussion. Usually women are expected to take care of their families. However, it seems that the social role of women as caregivers is exhausting them in their own families. Women as

care givers also need care. This carries important health service implications. Some community or respite services are necessary to relieve caregiver burden among women.

Furthermore, some researchers (Krieger, 1995) argued that gender should not only be constructed biologically but also socially. A social construct of gender regards culture-bound conventions, roles, and behaviors for, as well as relations between, women and men and boys and girls. Social norms and social inequality, such as the one that states that women should be caregivers and serve their husbands in their family, could shape unequally distributions of determinants of health, disease, and well-being between men and women. This could be the fundamental reason why marriage provides a protective role against mortality in late life only for men while widowed women living alone enjoy a high level of QOL. Further studies on caregiver burden of women living with their family and the impact of gender as a social construct on women's health and life satisfaction are needed.

In addition, that fact that women living alone seems to have enjoyed higher life satisfaction could also be associated with their high level of social interaction. It seems that women who live alone are more likely to have a higher level of social interaction; such social contacts can improve QOL. Perren et al. (2004) pointed out that among women, living alone increases the likelihood of both providing and receiving favors.

Several women who lived alone in our study worked as volunteers in community centers which may have contribute to their life satisfaction. The literature suggests that social contact and social support are beneficial especially to women living alone. Yvonne et al. (2001) found that contact with friends and relatives and level of social engagement were significantly protective against a decline in mental health among women living alone but not among women living with a spouse.

In this study, we found that education was negatively correlated with the QOL total score, the QOL social and economic subscale score, the QOL psychological and spiritual subscale score, and the QOL family subscale score. This indicates that the higher the

education level, the lower the participant's satisfaction with life. Although the literature reports regarding the relationship between education and QOL are controversial, the negative correlation between education and QOL has been reported in a Chinese study of 8550 Chinese people. Li et al. (1998) found that individuals with a higher education level reported lower levels of life satisfaction. In addition, they pointed out that the more educated participants were more likely to regard realization of self-value, good psychological health, and adequate recreation as their main needs in life and to compare their present lives with a self-ideal standard for life or conditions of other people. Conversely, the less educated participants more often selected having wealth and good physical health as their main needs in life; they compared their present lives with their own previous conditions. According to Maslow's hierarchy of needs (Maslow, 1954), these high educated people have high life expectations and show high level of needs such as self-actualization, which is very difficulty to fulfill. While low educated people only have low level needs such as biological and safety needs, these needs are easier to satisfy comparing to the high level needs. Different levels of expectation and needs could be the reason that highly educated people experience low level of life satisfaction.

As we hypothesized, social support is positively correlated with the life satisfaction of the Chinese elderly in our study. In fact, this is true not only for Chinese elderly but also for all the other ethnic groups. A generalized effect of social support could occur because large social networks provide persons with regular positive experiences and a set of stable, socially rewarded roles in the community (Thoits, 1983, 1985). Social support can also buffer stress to improve wellbeing by providing necessary resources, bolster one's perceived ability to cope with imposed demands, and reduce the stress reaction (House 1981). The important and universal role of social support on well being suggests that improving social support among community residents is necessary.

6.3. Interpretation of missing data

There were several missing data in the QLI item 7 (satisfaction with the chances for living long), 11 (satisfaction with sex life), 12 (satisfaction with spouse), 21 and 22 (satisfaction with job or not having a job), 28 (faith in god), 32 (satisfaction with personal

appearance). Some missing data can be explained by the Chinese culture. Regarding satisfaction with sex and spouse, it must be noted that usually Chinese people do not like to talk about such issues in public. It could also be true for women in the other ethnic groups (Ojanlatva et al. 2003). Regarding the personal appearance question, Chinese people, especially the elderly, do not like to say "I am good looking" although they may enjoy it if others say it. As for the "faith in god" question, many Chinese people did not answer it since they did not have religious convictions. The missing data in the items concerning satisfaction with job or not having a job is understandable, since some individuals were retired. Furthermore, satisfaction with the chance of living long seems to be difficult to understand in many of the participants. This implies that although the QLI is an appropriate measure of QOL in this study and has shown great content validity, further cross culture adaptation is needed.

6.4. Study Conclusions

Overall we have found that elderly Chinese people living in Montreal enjoyed high levels of QOL which may be partially explained by their low life expectations. We also found that living arrangements, gender, education and social support are important QOL indicators among the study participants. It is very interesting to note that women living alone obtained the highest QOL score, which may be explained by their low caregiver burden within families and the high level of social interaction.

As there is no consensus on definition of QOL and different measurement instruments focus on different perspectives of QOL, the study findings reported in this thesis might have been different if a different QOL measurement had been used. In this study, we defined QOL as the subjective perception of life and selected QLI to measure life satisfaction of the elderly Chinese participants. Although generally they described high levels of satisfaction with life, dissatisfaction was also reported with respect to health and pain. As health was ranked to be the most important factor of QOL by our study participants, it was considered that it would be very informative to also include an objective measurement of health and pain. If we had used the SF-36, which is a well known measurement of health related quality of life, our study participants might have

reported lower level of QOL since they described dissatisfaction with health problems. Given above discussion, we suggest the use of multiple QOL measurements in future research that will provide not only subjective but also objective information on QOL.

6.5. Strength and weakness

Our study has a number of strengths. To our knowledge, this is the first study of QOL among Chinese elderly living in Montreal. We have acquired interesting quantitative and qualitative data which has increased our understanding of this minority group. In this study, we have a clear definition of QOL and we select a widely used QOL measurement which is appropriate for the specific definition of QOL in this study. This is very important since QOL studies have been criticized for the absence of a clear definition and the measurement of QOL aimed at the wrong target (Gill & Feinstein, 1994). In addition, the QOL instrument used here is well structured by measuring satisfaction with each component of QOL. This has brought a unique feature to the study – we have obtained information on how satisfied the participants are with each component of QOL. At the same time, we have identified the common problems of QOL as these were described by most of our study participants. In addition, the QOL indicators were included following an extensive literature review and several of them were verified as very strong indicators of QOL in this study. In particular, living arrangements and gender appear to act jointly to affect QOL. This is an issue that deserves further investigation.

In this study, we have had to overcome the extreme difficulty of recruiting study participants. The Chinese elderly were very reluctant to communicate with strangers. Only few individuals from the Chinese community centers would like to participate in our study. As a result, we have had to use a convenience sample instead of a random sample and a selection bias was unavoidable. It is possible that QOL among randomly selected Chinese elderly in Chinese community would be lower than what we have found in this study since all our study participants were functionally independent and enjoyed a high level of social interaction. Disabled people who can not visit community centers may have described their life satisfaction differently. A future study with a large random sample of Chinese elderly living in community would be desirable.

Another limitation is that little variance was found in Activity of Daily Living Function among the study participants. All of them were relatively healthy and could take care of themselves. As a result, we could not find a relationship between QOL and Activity of Daily Living function, although a positive correlation has been reported in the literatures (Sugai 1996; Asakawa 2000).

6.6. Study Contributions

The findings of this study increased our knowledge on the QOL and of its indicators among elderly Chinese immigrants living in Montreal. We found that QOL of our study participants was very high despite of the low level of their SES. One of the interpretations of the high life satisfaction among these Chinese elderly could be their high levels of social activities and social interactions. It indicates that nurses and rehabilitation therapists may use psychosocial interventions to improve life satisfaction of elderly living in community. For example, we can encourage them to regularly visit community centers and participate in community activities and voluntary jobs. This study also carries implications for rehabilitation. The issue of chronic pain has been repeatedly raised by the participants. We can thus stress the importance of making available to the Chinese elderly programs that can help them deal with chronic pain. In addition, we have noticed that there was an important number of missing data in the items concerning "satisfaction with spouse" and "satisfaction with sex"; we have attributed this to the particularities of the Chinese culture where individuals do not like discussing such matters. This issue deserves attention from the health care providers and rehabilitation therapists. We believe that it is important that health care professionals and care givers in rehabilitation settings be knowledgeable and sensitive to the specifics of their clients' cultural issues. At the same time, the health care programs could make certain provisions to accommodate the special culture and health care needs of Chinese clients.

This study also carries policy implications. Respite services to relieve caregiver burden among Chinese women may be necessary to improve their QOL. Some research

questions have been initiated from our study, including: What is the QOL among Chinese elderly who do not visit Chinese community centers? How does female gender as a social construct impact on women's health and QOL? How does the Chinese culture impact on the perception of QOL among Chinese people? Future research in this direction will be interesting and fruitful.

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Appendix 2.3. The conceptual Framework developed at University of Toronto

being	**who one is**
Physical Being	• physical health • personal hygiene • nutrition • exercise • grooming and clothing • general physical appearance
Psychological Being	• psychological health and adjustment • cognitions • feelings • self-esteem, self-concept and self-control
Spiritual Being	• personal values • personal standards of conduct • spiritual beliefs
belonging	**connections with one's environments**
Physical Belonging	• home • workplace/school • neighbourhood • community
Social Belonging	• intimate others • family • friends • co-workers • neighbourhood and community
Community Belonging	• adequate income • health and social services • employment • educational programs • recreational programs • community events and activities
becoming	**achieving personal goals, hopes, and aspirations**
Practical Becoming	• domestic activities • paid work • school or volunteer activities • seeing to health or social needs.
Leisure Becoming	• activities that promote relaxation and stress reduction
Growth Becoming	• activities that promote the maintenance or improvement of knowledge and skills • adapting to change.

Appendix 2.4. : Generic QOL measurement instruments

name of the questionnaire	Author	objective	population	Health conditi-on	number of items	Chinese Translation
EQ-5D	The EuroQol Group	To assess health outcome from a wide variety of interventions on a common scale, for purposes of evaluation, allocation and monitoring	Adult	all	5	yes
Global Quality of Life scale	Michael Hyland & Samantha C. Sodergren	To assess patients' overall perspective on quality of life	adult	all	1	No
HUI		The Health Utilities Index (HUIR) measurement systems are a family of generic health status and health-related quality of life (HRQL) measures	Adult Adolescents	all	13-39	yes
McMaster Health Index Questionnaire	Larry W. Chambers	To supplement clinical ratings of health status, with QoL measures based on physical, social and emotional functions	Adult Adolescents	all	59	no
Nottingham Health Profile	S Hunt, J McEwen, SP McKenna	Generic health-related quality of life measure. The instrument is used to evaluate perceived distress across various populations.	Adult	All	38	no
Perceived Quality of Life Scale	Donald L. Patrick, Marion Danis.	To assess quality of life of patients with chronic diseases with various levels of wellness and disability.	adult	all	20	no
Ferrans and Powers Quality of Life Index	CE Ferrans and MJ Powers	To measure quality of life in terms of satisfaction with life	adult	all	66	yes
Quality of Life Questionnaire-Evans	David Evans, Wendy Cope	To assess the quality of an individual's life across a broad range of specific areas	adult	all	192	no
Quality of Life Inventory	Michael B. Frisch	To measure life satisfaction and outcome with a single score based on 16 key areas	Adult Adolescent	all	36	no

		of life including love, work and recreation and to show problems in living and strength in each of the 16 areas				
Flanagan's Quality of Life Scale	John C. Flanagan (deceased); modified by Carol S. Burckhardt	To assess quality of life for chronic illness populations. It is also valid for healthy populations	adult	all	16	yes
Quality of Well-being Scale	RM Kaplan	To measure symptoms, mobility, physical activity and social activity. Scores can be translated into economic evaluation for cost-effectiveness studies or quality of adjusted life years.	adult	all	4	no
Satisfaction Profile	G Majani and S Callegari	To assess subjective satisfaction in daily life in clinical settings	all	all	32	no
Schedule for the Evaluation of Individual Quality of Life	O'Boyle CA, McGee H, Hickey A, Joyce CRB, Browne J, O'Malley K, Hiltbrunner B	To assess quality of life from an individual perspective in healthy or ill individuals	SEIQoL and SEIQoL-DW are not suitable for cognitively impaired persons	all	46/15	no
MOS Short Form - 36 Items	John E.Ware Jr., Ph.D., Cathy D. Sherbourne , Ph.D., Ron D. Hays, Ph.D., Anita Stewart, Sandy Berry, Barbara Gandek, M.S.	To satisfy minimum psychometric standards necessary for group comparisons involving generic health concepts — that is, concepts that are not specific to any age, disease, or treatment group	Adult & Adolescent (age 14 and older)	all	36	yes
Subjective	Alice	To assess Quality of Life in	adult	all	29	no

Quality of Life Profile	Dazord	various diseases and in therapeutic trials			(core) + optiona l items availab le	
World Health Organization Quality of Life assessment instrument						

Appendix 2.5.: QOL indicators among general population:

People	Population Growth Ethnicity Age Family and Households
Knowledge & Skills	Suspensions & Stand-downs Early Childhood Education School Decile Ratings Community Education Qualification Levels
Economic Standard of Living	Household Expenditure Social Deprivation Income Costs
Economic Development	Growth in Business Building Consents Economic Growth Employment Retail Sales Tourism
Housing	Housing Costs & Affordability Government Housing Provision Urban Housing Intensification Household Crowding Household Tenure
Health	Mental Health & Wellbeing Modifiable Risk Factors Low Birth Weights Teenaged Parents Life Expectancy Infant Mortality Access to GPs Health Status Disease
Natural Environment	Waste Management and Recycling Beach, Stream & Lake Water Drinking Water Quality Bio Diversity Air quality
Built Environment	Look and feel of the City Traffic and Transport City Green Space Public transport Noise pollution

	Graffiti
Safety	Perceptions of safety Child safety Road causalities Crime Levels
Social connectedness	Community Strength & Spirit Electronic Communication Quality of life Diversity
Civil & Political Rights	Involvement in Decision Making Representation Voter turnout

Appendix 2.5.1. Literature Review: Social Support and QOL

Author	Year	Sample	Location	Social support and QOL
Sparks M. et al	2004	70 community elders	US	Social interaction was a significant predictor of life satisfaction.
Isaacowitz DM. Et al	2003	3 adult samples	US	Among community-dwelling older adults loving relationships positively and uniquely predicted life satisfaction,
Chappell NL. Et al	2003	Chinese elders in Shanghai and Canadians	China Canada	Social support predict life satisfaction
Tak SH. Et al	2003	107 women with osteoarthritis aged 60 years or older.	US	Social support predicts life satisfaction
Huebner RA. Et al	2003	25 adults after traumatic brain injury	US	More community participation is related to higher quality of life
Menec VH.	2003	Aging in Manitoba Study Sample	Manitoba Canada	Social activities were positively related to happiness
Wang CW.	2002	142 older adults	Tohoku Japan	Life satisfaction was related to social support in males
Cummings SM.	2002	Elderly assisted living residents	US	Social support is associated with well-being
Othaganont P. et al	2002	73 matched pairs of elderly people who perceive themselves as life satisfied or life dissatisfied	Thailand	Good relationship with others resulting in life satisfaction
Adams VH 3rd. et al	2000	Aging African Americans	US	increased frequency of contact with friends and family help were the most important contributors to high satisfaction.
Adler G. et al	2000	60 elderly persons of the general population	German	Positive correlations between the dimensions of the social situation and the respective domains of life satisfaction were found.
Pinquart M. Sorensen S.	2000	286 empirical studies (meta-analysis)	German	Social network is positively related to subjective well being
Laubach W. et al	2000	2948 German population	German	Persons belonging to a lower social class show a minor life satisfaction,
McCamish-Svensson C. Et al	1999	a single cohort of eighty-year-old persons living in Lund, Sweden	Sweden	satisfaction with sibling contact are related to total life satisfaction at age eighty-three
Lu L.	1999	systematic random sample, 581	Taiwan	social support still predicted overall happiness, and positive

		residents of Kaohsiung, Taiwan, completed questionnaires at Time 1; 105 returned valid questionnaires 2.5 years later, at Time 2.		life events predicted life satisfaction. Furthermore, there was a consistently strong bidirectional relationship between overall happiness and life satisfaction.
Kim H.. Et al	1999	Japanese elderly aged 60 and over (N = 1,285)	Japan	Social support predicts life satisfaction among elders
Miller AM. Et al	1998	midlife black (n = 51) and white (n = 56) women employed in occupations varying by socioeconomic status (SES).	Chicago US	Partner role quality and parents role quality relate to life satisfaction
Post MW. Et al	1998 ???	318 people with spinal cord injury aged 18-65	The Netherlands.	Social and psychological functioning predict life satisfaction
Menec VH. Chipperfield JG.	1997		Los Angeles, USA	Exciting and leisure activity participation predict life satisfaction
Kim O.	1997	174 older Korean immigrants living in a metropolitan area	Korea	Lioness predicts life satisfaction
Bienenfeld D. et al	1997	a group of retired Catholic sisters	US	Life satisfaction is related to social support and physical function
Cheung CK.	1997	138 married couples in Hong Kong	Hong Kong China	Social support contribute to well being
Allain TJ.	1996	278 subjects aged 60 to 92 years Randomly selected villages and two urban areas in north eastern Zimbabwe.	US	declining family support and diminishing respect from children will have a negative effect on happiness and life satisfaction
Warren L et al	1996	one year post-discharge persons with a spinal cord (SCI) or traumatic brain injury (TBI).	US	Closeness to family associate with life satisfaction
Kim H. et al	1996	740 community residents aged 60 and over living in a rural area in Korea	Korea	the elderly group who exchanged support frequently with their spouses, children and friends showed the highest QOL score
Mathieson CM. Et al	1996	Forty-five head and neck oncology	Canada	Social support contributes to better QOL

		patients		
Newsom JT. Schulz R.	1996	national sample of 4,734 adults age 65 and older	US	Physical impairment associate with lower social support, lower reported social support is an important reason for decreases in life satisfaction
Iwatsubo Y. et al	1996	627 subjects took part in the first phase of the survey (1982-1983, T1), and 464 in the follow-up phase (1987-1988, T2) retired men and women living in the Paris Metropolitan area	Paris French	Significant relationships were found between life satisfaction and the number of physical impairments and leisure activities, marital and mental health status and family relations.
Kataoka M. et al	1995	293 patients with Hansen's disease	Japan	Having networks with family members and having resources other than family were associated with life satisfaction. Going out and positively spending their daily lives were associated with life satisfaction, too. These associations were significant for men. Similar patterns of association were observed for women, but were insignificant.
Tell GS. Et al	1995	256 dialysis patients; 72 black women, 59 black men, 61 white women, and 64 white men at Piedmont Dialysis Center	North Carolina US	Social support is associate with QOL, HRQOL was consistently rated better among blacks than among whites
O'Connor BP.	1995	Eighty-two independently-living older adults and ninety-one younger adults	Ontario Canada	Quality of relationship predicts life satisfaction
Ho SC. Et al	1995	A total of 843 men and 714 women 70 years and older were selected by random sampling, stratified by age and sex	Hong Kong China	Education, Income, Social support, and functional independence are related to life satisfaction.
Bowling A. et al	1993	people ages 85+ living in the East end of London	London U.K.	Social networks and support contribute to life satisfaction
Gray GR. Et al	1992	60 community-living aged	Denton	Persons' feelings of loneliness and isolation from their families

		individuals		and a measure of socio-cognitive skill, accounted for 49 percent of the variability in elderly life satisfaction.
Astrom M. et al	1992	50 long-term survivors of stroke	Sweden	Major depression early after stroke, functional disability, and an impaired social network interact to reduce life satisfaction for the long-term survivors of stroke.
Chappell NL. Badger M.	1989		Winnipeg Canada	When controlling for demographic, economic, and health factors, having no confidants and no companions were significantly and independently related to subjective well-being.
Steinkamp MW. Kelly JR.	1987	A random sample of 400 persons ages forty through eighty-nine residing in a demographically typical midwestern city	US	Leisure activity related to life satisfaction
Levitt MJ. Et al	1987	Elderly residents of an area targeted for massive redevelopment.	US	Social support emerged as an independent predictor of life satisfaction
Decker SD. Schulz R.	1985	100 spinal cord-injured people, ranging in age from 40 to 73 years		people experiencing high levels of well-being reported high levels of perceived control, had higher levels of social support, and judged their health status to be good.

Appendix 2.5.2. Literature review: Functional Status and QOL

Author	Year	Sample	Location	Functional status and QOL
Chang M. et al	2001	123 older men and women	Japan	It is important for older people to maintain their functional fitness in order to manage a high quality of life.
Backman K. Hentinen M.	2001	home-dwelling elderly persons (n=40) aged 75 or more	Oulu Finland	Poor life satisfaction and self-esteem correlated with abandoned self-care behavior.
Asakawa T. et al	2000	692 Japanese elderly, aged sixty-five years or older	Japan	Functional status is a prerequisite for higher quality of life in old age
Bienenfeld D. et al	1997	a group of retired Catholic sisters	US	Life satisfaction was best explained by a four-factor model that included mastery, social support, physical functioning, and religious commitment.
Sugai K. et al	1996	531 community elderly residents aged 75-80 years	Japan	daily activity in community elderly residents is crucial to increasing their global life satisfaction,
Kataoka M.	1995	293 patients with Hansen's disease	Japan	Dependence on activities of daily living (ADL) was associated with life satisfaction in some ADL items. Care and aid provided by the staff of the sanatorium may modify the relationship between ADL impairment and life satisfaction.
Ho SC. Et al	1995	843 men and 714 women aged 70 years and older were selected by random sampling	Hong Kong China	Functional independence is related to life satisfaction
Astrom M. et al	1992	50 long-term survivors of stroke	Sweden	Major depression early after stroke, functional disability, and an impaired social network interact to reduce life satisfaction for the long-term survivors of stroke.
Viitanen M. et al	1988	60 healthy individuals	Sweden	Persisting motor impairment and ADL-disability had a negative effect on several aspects of life satisfaction.
Lohr MJ.	1988	281 older women ??	US	physical conditions directly contributed to functional impairment, and both indirectly lowered life satisfaction through their direct negative effects on subjective health assessments.
Osberg JS. Et al	1987	97 patients discharged from three medical rehabilitation facilities in metropolitan Boston	Boston US	functional capacity is the most important predictor of QOL

Appendix 2.5.3. Literature Review: SES and QOL

Author	Year	Sample	Location	SES and QOL
Choi NG.	2001		US	The findings show that postretirement employment in itself does not contribute to older women's life satisfaction, but financial resources and especially the older women's concerns about their own financial situation are potent determinants of their life satisfaction.
Pinquart M. Sorensen S.	2000	Meta-analysis of 286 empirical studies	Germany	SES is positively related to Subjective Well-being.
Lu L. Chang CJ.	1998	172 elderly subjects	Taiwan China	Female, single and financially dependent elderly avowed lower life satisfaction.
Landau R.	1995	A stratified random sample of 150 Israeli widows, under the age of 54.	Israel	both locus of control and socioeconomic status are related to depression and life satisfaction independently,
Ho SC. Et al	1995	843 men and 714 women aged 70 years and older were selected by random sampling	Hong Kong China	Adequate income to meet living expenses is related to life satisfaction.
Gray GR. Et al	1992	60 community-living aged individuals	Denton	Financial satisfaction is significantly correlated with life satisfaction.
Usui WM. Et al	1985	Data from a 1980 community survey of persons 60 years of age and older		The better off financially respondents perceived themselves to be compared with the relative to whom they felt closest, the greater the life satisfaction.

Appendix 2.5.4. Literature Review: Age and QOL

Author	Year	Sample	Location	Age and QOL
Hamarat E. et al	2002	98 participants represented healthy, socially active, community-residing adults across 3 older-adult age groups (45-64, 65-74, and 75 years and older)	US	Similar consistencies in life satisfaction were found across the 3 age groups.
Mehlsen M. et al	2003	Four cohorts born with an interval of five years, 62 to 77 years old (N = 3207)	Denmark	The years from 30 to 39 were most frequently chosen as the most satisfying decade, followed by the adjoining decades. A decade in old age was chosen as the least satisfying by 24% of the participants, while only 8.5% of the participants evaluated old age as the most satisfying period of life.
Wang CW. Et al	2002	142 older adults	Sendai Japan	life satisfaction was related to mental health and age in females,
Hamarat E. et al	2002	3 older-adult age groups (45-64, 65-74, and 75 years and older) 98 participants	Atlanta US	Similar consistencies in life satisfaction were found across the 3 age groups.
Kitamura T. et al	2002	220 inhabitants in a rural community	Japan	Life satisfaction and self-confidence were better in people aged 55 or over than in those under 55.
Beute ME. Et al	2002	Two stratified random samples of the German male population (total of 2,182 men)	German	They found a continuous increase of physical, mental and general fatigue, and a reduced activity and motivation associated with age. Exhaustion, cardiovascular and musculoskeletal complaints also increased. This was accompanied by a reduced health satisfaction and increased depression scores.
Hamarat E. et al	2001	189 adults across 3 age groups (18 to 40 years, 41 to 65 years, and 66 years and above)	US	Significant age differences in life satisfaction is found, Older adults perceived highest satisfaction with life
Nunley BL. Et al	2000	37 community-dwelling older adults	US	the older the individual was, the greater the depressive symptoms were and the lower life satisfaction became.
Hollis LA.	1998	78 older adults (n = 39	US	There were no significant

		females) were recruited from independent-living retirement communities located in Pennsylvania		age-level differences in mean Life satisfaction scores.
Lu L. Chang CJ.	1998	172 elderly subjects (108 outpatients from a family medicine clinic and 64 community residents) with chronic conditions living in Kaohsiung city	Taiwan China	Older adults avowed lower life satisfaction
Dugan E. et al	1998	435 adults aged 60 years or older with Urinary Incontinence	US	QOL outcomes was predicted by age
Post MW. Et al	1998	A nationwide sample of 318 persons with spinal cord injury	The Netherlands	Several relationships between life satisfaction and age and marital status existed,
Li L. et al	1998	8,550 participants from Hunan, China	Hunan China	Young, urban, or more educated participants with higher scores on objective status often had lower subjective satisfaction scores
Morganti JB. Et al	1988	a noninstitutionalized life-span sample of males and females in six age groups (fourteen to ninety-four).	Buffalo US	lower levels of self-concept and life satisfaction and a more external orientation characterized adolescents and young adults while, with notable exceptions, the remaining age samples were more positive in self-concept and life satisfaction and were more internally controlled.

Appendix 2.5.5. Literature Review: Education and QOL

Author	Year	Sample	Location	Educational Level and QOL
Cubo E. et al	2002	158 Parkinson's Disease patients	Spain	Educational background is one of the most important predictors of QOL. Lower education associated with poor QOL.
Meeks S. Murrell SA.	2001	1,177 participants (age 55 and older)	US	Education and negative affect both were directly related to health and life satisfaction. Higher educational attainment is related to lower levels of trait negative affect; lower negative affect results in better health and life satisfaction.
Dugan E. et al	1998	435 adults aged 60 years and older with Urinary Incontinence	US	Life satisfaction was predicted by Education. Higher ratings of life satisfaction were related to having more education.
Li L. et al	1998	8,550 participants	Hunan China	Young, urban, more educated individuals had lower subjective satisfaction
Ho SC. Et al	1995	Territory-wide random sample of persons aged 70 years and older, 843 men and 714 women	Hong Kong China	Educational attainments is associated with higher life satisfaction score
Gray GR. Et al	1992	60 community-living aged individuals	Denton	Education is significantly correlated with life satisfaction

Appendix 2.5.6. Literature Review: Gender and QOL

Author	Year	Sample	Location	gender and QOL
Cuellar I et al	2004	A randomly stratified sample of 353 Hispanics aged 45 and older were interviewed	US	Income, age, gender, and acculturation were significant predictors of well-being
Wang CW. et al	2002	One hundred and forty-two older adults (86 females and 56 males) who completed a self-administered questionnaire and participated in a health examination in 1998 or 1999 comprised the study participants.	Japan	life satisfaction was related to mental health and age in females, while it was related to mental health status and social support from others in males. Gender differences in the variables associated with life satisfaction were observed among the community-dwelling older adults
Cummings SM et al	2002	Participants were nondemented elderly residents of an assisted-living community in the urban southeast.	US	Female gender, self-reported health, functional impairment, perceived social support, and participation in activities were significantly associated with well-being.
Xavier FM. et al	2002	A random representative sample (sample=77 subjects/county population of oldest-old =219--35%) aged 80 years or more was selected from the county of Veranopolis in the Brazilian rural southern region.	Brazil	Female gender and the concurring presence of generalized anxiety disorder were both significantly associated with the presence of minor depression diagnosis.
Kitamura T et al	2002	220 inhabitants in a rural community in Japan	Japanese	Health perception was better among men than among women. Life satisfaction and self-confidence were better in people aged 55 or over than in those under 55.
Pinquart M. Sorensen S.	2001	Meta-analysis was used to synthesize findings from 300 empirical studies on gender differences in life satisfaction, happiness, self-esteem, loneliness, subjective health, and subjective age in late adulthood.	Germany	Older women reported significantly lower SWB and less positive self-concept than men on all measures, except subjective age, although gender accounted for less than 1% of the variance in well-being and self-concept.
Kim H. et al	1999	Japanese elderly aged 60 and over (N = 1,285), using the longitudinal data of a national representative	Japanese	The findings of this study suggest that the effects of social support on life satisfaction differ by sex and the impacts of changes in support are strong determinant predicting

		sample. An initial survey was carried out in 1987, and a follow-up was conducted in 1990.		life satisfaction of the elderly.
Chipperfield JG. Havens B et al	2001	using data from a large-scale, longitudinal study we assessed life satisfaction as measured in 1983 and 1990 among 2,180 men and women between the ages of 67 and 102	Canada	Among those individuals whose marital status remained stable over the 7 years, women's life satisfaction declined and men's remained constant. Among those who experienced a transition--in particular, the loss of a spouse--a decline in life satisfaction was found for both men and women, decline being more predominant for men. In addition, men's life satisfaction increased over the 7-year period if they gained a spouse, whereas the same was not true for women.
Hollis LA.	1998	Seventy-eight older adults (n = 39 females) were recruited from independent-living retirement communities located in Pennsylvania.	US	Results indicated that females in the sample were not significantly different in mean life satisfaction scores but were significantly lower in mean psychosocial adjustment scores than males in the sample. There were no significant age-level differences in mean scores.
Livingston G. et al	1997	Follow-up of 165 subjects age 65 or over, initially identified in a community study in inner London as depressed or having an anxiety disorder.	UK	Female gender is the predictor of continuing depression and phobic anxiety.
Kim H. et al	1996	A total of 740 community residents aged 60 and over living in a rural area in Korea were interviewed from July 12 to July 15, 1993.	Japanese	Analysis showed that the female elderly with greater support from their husbands had higher life satisfaction score. On the other hand, the male elderly group who provided support to their spouses but did not receive equal support in return from their spouses had low life satisfaction score. Providing support to their children was found to relate to high life satisfaction in both males and females, while receiving support from their children improved life satisfaction only in the females.
Mathieson CM. et al	1996	Forty-five head and neck oncology patients (33 men, 12 women) who came for follow-up appointments at the clinic.	1996	Four main factors predicted quality of life: satisfaction with family physician support, severity of cancer, sex of patient, and type of cancer.

Reinhardt JP.	1996	241 elders experiencing age-related vision loss	1996	Close relationships were perceived as providing greater attachment in females and greater instrumental assistance and social integration in males.
Kataoka M. et al	1996	293 patients with Hansen's disease	Japanese	Dependence on activities of daily living (ADL) was associated with life satisfaction in some ADL items. Care and aid provided by the staff of the sanatorium may modify the relationship between ADL impairment and life satisfaction. For social aspects of life at the sanatorium, both having networks with family members and having resources other than family were associated with life satisfaction. Going out and positively spending their daily lives was associated with life satisfaction, too. These associations were significant for men. Similar patterns of association were observed for women, but were insignificant.
Coke MM. et al	1992	The sample consisted of 166 African Americans ranging in age from 65 to 88 years. There were 87 males and 79 females.	New York US	Females tended to manifest greater life satisfaction than males. Females also had higher mean scores on hours of church participation per week, scored higher on family role involvement, and were more likely than males to consider their incomes adequate. Separate correlation and regression analyses were run for male and female respondents. These analyses indicated that among males, family role involvement and hours of church participation were related significantly to life satisfaction, as were self-perceived adequacy of income, actual household income, educational level, and self-rated religiosity. Among females, only self-rated religiosity was a significant predictor of life satisfaction. This finding was attributed to the generally high levels of family role involvement and church participation among female respondents.

Appendix 2.5.7. Literature Review: Living Arrangements and QOL

Author	year	Sample	Location	Living arrangements and QOL
Simon JM.	1990	a nonrandom sample of 73 noninstitutionalized adults over age 55	----	Living arrangements is predictive of life satisfaction
Wilmoth JM. Chen PC	2003	National representative sample of 6,391 primary respondents who were aged 51 to 61	US	Depressive symptoms are higher among those who live alone, particularly among immigrants.
Waite LJ. Hughes ME.	1999	cross-sectional data from the Health and Retirement Study	US	Married couples living alone or with children show the highest levels of functioning, whereas single adults living in complex households show the lowest levels.
Yvonne L. Michael et al	2001	Longitudinal study of 28324 women aged 60-72.	US	Women living alone had lower risk of decline in mental health and vitality compared with those living with a spouse. Contact with friends and relatives and level of social engagement were significantly protective against a decline in mental health among women living alone but not among women living with a spouse.

Appendix 4.2.

Short portable mental status questionnaire

1. What is the date today? (month/day/year)
2. What day of the week is it?
3. What is the name of this place?
4. What is your telephone number? (if no telephone, street address)
5. How old are you?
6. When were you born? (month/day/year)
7. Who is the current president/prime minister of this country?
8. Who was the prime minister/president before this one?
9. What was your mother's maiden name?
10. Subtract 3 from 20 and keep subtracting 3 from each new number all the way down.

Score: __/10

No partial marks may be given

Allow 1 more error if no grade school education

Allow 1 fewer if education beyond high school

测试神智清醒程度的若干简短问题

一、今天是几号？（请回答年、月、日）

二、今天是星期几？

三、请说出这个地方的名称。

四、请说出您家里的电话号码。假如没有电话，请说出您的地址

——街道名称与门牌号码）

五、您多大年纪了？

六、您的出生年、月、日？

七、这个国家的现任总统/总理是谁？

八、该国前任总理/总统是谁？

九、您母亲婚前的姓名？

十、20 减 3，从余数中再减 3，依此递减。

得分：_____/ 10

不给部分分。

如果没有学历，允许多犯一个错。

如果文化程度高于高中，只允许比规定标准少犯一个错。

Appendix 4.4a.

Ferrans and Powers
QUALITY OF LIFE INDEX©
GENERIC VERSION - III

PART 1. For each of the following, please choose the answer that best describes how ***satisfied*** you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

HOW *SATISFIED* ARE YOU WITH:	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied
1. Your health?	1	2	3	4	5	6
2. Your health care?	1	2	3	4	5	6
3. The amount of pain that you have?	1	2	3	4	5	6
4. The amount of energy you have for everyday activities?	1	2	3	4	5	6
5. Your ability to take care of yourself without help?	1	2	3	4	5	6
6. The amount of control you have over your life?	1	2	3	4	5	6
7. Your chances of living as long as you would like?	1	2	3	4	5	6
8. Your family's health?	1	2	3	4	5	6
9. Your children?	1	2	3	4	5	6
10. Your family's happiness?	1	2	3	4	5	6
11. Your sex life?	1	2	3	4	5	6
12. Your spouse, lover, or partner?	1	2	3	4	5	6
13. Your friends?	1	2	3	4	5	6

14. The emotional support you get from your family?	1	2	3	4	5	6
15. The emotional support you get from people other than your family?	1	2	3	4	5	6
16. Your ability to take care of family responsibilities?	1	2	3	4	5	6
17. How useful you are to others?	1	2	3	4	5	6
18. The amount of worries in your life?	1	2	3	4	5	6
19. Your neighborhood?	1	2	3	4	5	6
20. Your home, apartment, or place where you live?	1	2	3	4	5	6
21. Your job (if employed)?	1	2	3	4	5	6
22. Not having a job (if unemployed, retired, or disabled)?	1	2	3	4	5	6
23. Your education?	1	2	3	4	5	6
24. How well you can take care of your financial needs?	1	2	3	4	5	6
25. The things you do for fun?	1	2	3	4	5	6
26. Your chances for a happy future?	1	2	3	4	5	6
27. Your peace of mind?	1	2	3	4	5	6
28. Your faith in God?	1	2	3	4	5	6
29. Your achievement of personal goals?	1	2	3	4	5	6
30. Your happiness in general?	1	2	3	4	5	6
31. Your life in general?	1	2	3	4	5	6
32. Your personal appearance?	1	2	3	4	5	6
33. Yourself in general?	1	2	3	4	5	6

PART 2. For each of the following, please choose the answer that best describes how ***important*** that area of your life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

HOW *IMPORTANT* ARE YOU WITH:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
1. Your health?	1	2	3	4	5	6
2. Your health care?	1	2	3	4	5	6
3. Having no pain?	1	2	3	4	5	6
4. Having enough energy for everyday activities?	1	2	3	4	5	6
5. Taking care of yourself without help?	1	2	3	4	5	6
6. Having control over your life?	1	2	3	4	5	6
7. Living as long as you would like?	1	2	3	4	5	6
8. Your family's health?	1	2	3	4	5	6
9. Your children?	1	2	3	4	5	6
10. Your family's happiness?	1	2	3	4	5	6
11. Your sex life?	1	2	3	4	5	6
12. Your spouse, lover, or partner?	1	2	3	4	5	6
13. Your friends?	1	2	3	4	5	6
14. The emotional support you get from your family?	1	2	3	4	5	6
15. The emotional support you get from people other than your family?	1	2	3	4	5	6

HOW *IMPORTANT* ARE YOU WITH:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
16. Taking care of family responsibilities?	1	2	3	4	5	6
17. Being useful to others?	1	2	3	4	5	6
18. Having no worries?	1	2	3	4	5	6
19. Your neighborhood?	1	2	3	4	5	6
20. Your home, apartment, or place where you live?	1	2	3	4	5	6
21. Your job (if employed)?	1	2	3	4	5	6
22. Having a job (if unemployed, retired, or disabled)?	1	2	3	4	5	6
23. Your education?	1	2	3	4	5	6
24. Being able to take care of your financial needs?	1	2	3	4	5	6
25. Doing things for fun?	1	2	3	4	5	6
26. Having a happy future?	1	2	3	4	5	6
27. Peace of mind?	1	2	3	4	5	6
28. Your faith in God?	1	2	3	4	5	6
29. Achieving your personal goals?	1	2	3	4	5	6
30. Your happiness in general?	1	2	3	4	5	6
31. Being satisfied with life?	1	2	3	4	5	6
32. Your personal appearance?	1	2	3	4	5	6
33. Are you to yourself?	1	2	3	4	5	6

Ferrans and Powers

生活品质指标（QUALITY OF LIFE INDEX©）

一般版本3（GENERIC VERSION – III）

第一部分. 请针对下列问题，选择您认为最适合的答案（您对自己各方面生活的**满意程度**）。清圈选代表您答案的数字，所有的答案并没有所谓的"对"或"错"。

您对下列各方面生活有多满意：	非常不满意	中等程度的不满意	稍微不满意	稍微满意	中等程度的满意	非常满意
1. 您的健康	1	2	3	4	5	6
2. 您所获得的健康照顾	1	2	3	4	5	6
3. 您身体上的疼痛	1	2	3	4	5	6
4. 您日常生活的精力	1	2	3	4	5	6
5. 您自我照顾的能力 （无需其他帮助）	1	2	3	4	5	6
6. 您对您自己生活的掌控	1	2	3	4	5	6
7. 能够活到 '您所想活岁数' 的机会	1	2	3	4	5	6
8. 家人的健康	1	2	3	4	5	6
9. 您的孩子	1	2	3	4	5	6
10. 家庭的和谐	1	2	3	4	5	6
11. 您的性生活	1	2	3	4	5	6
12. 您的配偶，爱人，亲密伴侣	1	2	3	4	5	6
13. 您的朋友	1	2	3	4	5	6
14. 家人所给予您的情绪支持	1	2	3	4	5	6
15. 他人（除家人）所给予您的情绪支持	1	2	3	4	5	6

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您对下列各方面生活有多满意：	非常不满意	中等程度的不满意	稍微不满意	稍微满意	中等程度的满意	非常满意
16. 您负担家庭责任的能力	1	2	3	4	5	6
17. 您认为您自己对别人有用的程度	1	2	3	4	5	6
18. 生活中的忧虑	1	2	3	4	5	6
19. 您居住的四周环境	1	2	3	4	5	6
20. 您的房屋，公寓，或住所	1	2	3	4	5	6
21. 您的工作（若就业中）	1	2	3	4	5	6
22. 无工作（若您无就业，退休，或残障）	1	2	3	4	5	6
23. 您的教育	1	2	3	4	5	6
24. 您自己处理财务需求的能力	1	2	3	4	5	6
25. 您的娱乐活动	1	2	3	4	5	6
26. 您有个'快乐未来'的机会	1	2	3	4	5	6
27. 您心灵上的平安	1	2	3	4	5	6
28. 您的宗教信仰	1	2	3	4	5	6
29. 您的成就（达成个人目标）	1	2	3	4	5	6
30. 您整体的快乐	1	2	3	4	5	6
31. 您整体的生活	1	2	3	4	5	6
32. 您的外观	1	2	3	4	5	6
33. 整体来说，您自己本身	1	2	3	4	5	6

（请转下页）

第二部分. 请针对下列问题，选择您认为最适合的答案(各方面生活对您的**重要程度**)。请圈选代表您答案的数字，所有的答案并没有所谓的"对"或"错"。

下列各方面生活对您有多重要：	非常不重要	中等程度的不重要	稍微不重要	稍微重要	中等程度的重要	非常重要
1. 您的健康	1	2	3	4	5	6
2. 您所获得的健康照顾	1	2	3	4	5	6
3. 身体上无疼痛	1	2	3	4	5	6
4. 拥有足以日常生活的精力	1	2	3	4	5	6
5. 能够自我照顾（无需其他帮助）	1	2	3	4	5	6
6. 对您自己生活能够掌控	1	2	3	4	5	6
7. 能够活到您想要活的岁数	1	2	3	4	5	6
8. 您家人的健康	1	2	3	4	5	6
9. 您的孩子	1	2	3	4	5	6
10. 家庭的和谐	1	2	3	4	5	6
11. 您的性生活	1	2	3	4	5	6
12. 您的配偶，爱人，亲密伴侣	1	2	3	4	5	6
13. 您的朋友	1	2	3	4	5	6
14. 家人所给予您的情绪支持	1	2	3	4	5	6
15. 他人（除家人）所给予您的情绪支持	1	2	3	4	5	6

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下列各方面生活对您有多重要：	非常不重要	中等程度的不重要	稍微不重要	稍微重要	中等程度的重要	非常重要
16. 能负担家庭责任的能力	1	2	3	4	5	6
17. 自己能够对别人有用	1	2	3	4	5	6
18. 生活中无忧无虑	1	2	3	4	5	6
19. 您居住的四周环境	1	2	3	4	5	6
20. 您的房屋，公寓，或住所	1	2	3	4	5	6
21. 您的工作（若就业中）	1	2	3	4	5	6
22. 有个工作（若您无就业，退休，或残障）	1	2	3	4	5	6
23. 您的教育	1	2	3	4	5	6
24. 能够处理财务需求	1	2	3	4	5	6
25. 有娱乐活动	1	2	3	4	5	6
26. 有个快乐的未来	1	2	3	4	5	6
27. 心灵上的平安	1	2	3	4	5	6
28. 您的宗教信仰	1	2	3	4	5	6
29. 能有所成就（达成个人目标）	1	2	3	4	5	6
30. 您整体的快乐	1	2	3	4	5	6
31. 足够的生活满意度	1	2	3	4	5	6
32. 您的外观	1	2	3	4	5	6
33. 您自己本身对您有多重要	1	2	3	4	5	6

（问卷结束）

第四页

Appendix 4.4b.

INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (IADL)
M.P. Lawton & E.M. Brody

A. Ability to use telephone		E. Laundry	
1. Operates telephone on own initiative; looks up and dials numbers, etc.	1	1. Does personal laundry completely 2. Launders small items; rinses stockings, etc.	1 1
2. Dials a few well-known numbers	1	3. All laundry must be done by others.	0
3. Answers telephone but does not dial	1		
4. Does not use telephone at all.	0		
B. Shopping		F. Mode of Transportation	
1. Takes care of all shopping needs independently	1	1. Travels independently on public transportation or drives own car.	1
2. Shops independently for small purchases	0	2. Arranges own travel via taxi, but does not otherwise use public transportation.	1
3. Needs to be accompanied on any shopping trip.	0	3. Travels on public transportation when accompanied by another.	1
4. Completely unable to shop.	0	4. Travel limited to taxi or automobile with assistance of another.	0
		5. Does not travel at all.	0
C. Food Preparation			
		G. Responsibility for own medications	
1. Plans, prepares and serves adequate meals independently	1		
2. Prepares adequate meals if supplied with ingredients	0	1. Is responsible for taking medication in correct dosages at correct time.	1
3. Heats, serves and prepares meals or prepares meals but does not maintain adequate diet.	0	2. Takes responsibility if medication is prepared in advance in separate dosage.	0
4. Needs to have meals prepared and served.	0	3. Is not capable of dispensing own medication.	0
D. Housekeeping		H. Ability to Handle Finances	

1. Maintains house alone or with occasional assistance (e.g. "heavy work domestic help")	1	1. Manages financial matters independently (budgets, writes checks, pays rent, bills goes to bank), collects and keeps track of income.	1
2. Performs light daily tasks such as dishwashing, bed making	1	2. Manages day-to-day purchases, but needs help with banking, major purchases, etc.	1
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness.	1	3. Incapable if handling money.	0
4. Needs help with all home maintenance tasks.	1		
5. Does not participate in any housekeeping tasks.	0		

Source: Lawton, M.P., and Brody, E.M. "Assessment of older people: Self-maintaining and instrumental activities of daily living." Gerontologist 9:179-186, (1969).

日常生活能力

M.P. Lawton & E.M.Brody

A. 使用电话的能力			E. 洗衣	
1. 能独自拨打电话，查电话号码、拨号，等等。	1		1. 个人衣物全部自己洗涤	1
			2. 洗些小东西，漂洗、叠放等等	1
2. 只打少数常用电话	1		3. 所有衣物都需要别人洗。	0
3. 能接听电话，但是不会拨打	1			
4. 从来不用电话	0		F. 所选交通工具	
B. 购物			1. 乘坐公共交通车辆 独自出门，或者自己驾车	1
1. 能够独立购买全部所需商品	1			
2. 能独立购买部分商品	0		2. 自己叫出租汽车，不坐公交车辆	1
3. 每次购物需人陪	0		3. 当有人陪同时，乘坐公交车辆	1
4. 完全丧失购物能力	0		4. 仅限乘坐出租车或小汽车在人陪同下外出	0
			5. 从不出门	0
C. 做饭			G. 服药自理	
1. 能够独自筹划、烹饪和用餐	1			
2. 如果配好佐料，能够做饭	0		1. 能自觉按照正确剂量，在正确的时间服药	1
3. 会做饭、加热饭菜、用餐，但是不懂均衡进食	0		2. 如果需要服用的药物事先按剂量准备好，能够自觉服用	0
4. 需要别人做饭、帮助进餐	0		3. 不能自己服药	0
D. 保持住宅清洁			H. 理财能力	
1. 独自打扫房屋或者偶尔有人帮忙（比如说，“繁重家务劳动帮工”）	1		1. 能够独立管理财务（拟订预算、出具支票、缴纳房租、银行转帐）接收并保管各项收入	1
2. 从事轻微家务劳动，象洗碗、整理床铺	1			
3. 可做轻微家务活，但是不能保持可以接受的干净程度	1		2. 能够管理日常购物开支，但是办理银行业务，买大件商品等，仍然需要帮助	1
4. 所有家庭清洁工作都需要别人帮忙	1			
5. 从不参加任何家庭清洁工作	0		3. 没有能力管理现钱	0

资料来源：Lawton, M.P., and Brody, E.M. « Assessment of older people : Self-maintaining and instrumental activities of daily living. » Gerontologist 9 :179-186, (1969). 美国老年学学会版权所有，经出版者允许方可使用

Appendix 4.4c.

Dukes Social Support Questionnaire

**** Please note the layout can change but the order of the items and the wording should remain as they are presented here. ****

Questions

1) How many persons in this area within one hour's travel (from your home/here) do you feel you can depend on or feel very close to? Do not include people in your own family.

2) How many times during the past week did you spend some time with someone who does not live with you. For example, you went to see them or they came to visit you, or you went out together?

a) none
b) one time
c) two times
d) three times
e) four times
f) five times
g) six times
h) seven times or more

3) How many times did you talk to some friends, relatives or others on the telephone in the past week (either they called you, or you called them)?

a) none
b) one time
c) two times
d) three times
e) four times
f) five times
g) six times
h) seven times or more

4) About how often did you go to meetings of social clubs, religious meetings or other groups that you belong to in the past week?

a) none
b) one time
c) two times
d) three times
e) four times
f) five times
g) six times
h) seven times or more

5) Does it seem that your family and friends (ie people who are important to you) understand you?

a) none of the time
b) hardly ever
c) some of the time
d) most of the time
e) all of the time

6) Do you feel useful to your family and friends (ie people important to you)?

a) none of the time
b) hardly ever
c) some of the time
d) most of the time
e) all of the time

7) Do you know what is going on with your family and friends?

a) none of the time
b) hardly ever
c) some of the time
d) most of the time
e) all of the time

8) When you are talking with your family and friends, do you feel you are being listened to?

a) none of the time
b) hardly ever
c) some of the time
d) most of the time
e) all of the time

9) Do you feel you have a definite role in your family and among your friends?
a) none of the time

b) hardly ever
c) some of the time
d) most of the time
e) all of the time

10) Can you talk about your deepest problems with at least some of your family and friends?

a) none of the time
b) hardly ever
c) some of the time
d) most of the time
e) all of the time

11) How satisfied are you with the kinds of relationships you have with your family and friends?

a) extremely dissatisfied
b) very dissatisfied
c) somewhat dissatisfied
d) satisfied most of the time
e) satisfied all of the time

Scoring

The Social Interaction subscale contains item numbers 1-4. The satisfaction subscale contains items 5-11.

Sum totals for each subscale, and then add these subscales to form the total Duke Social Support Index score.

The score range for the Social Interaction subscale is 4-12. The score range for the Satisfaction subscale is 7-35. The score range for the overall Duke Social Support Index is therefore 11-47.

«社 会 联 系 给 您 的 帮 助» 问 题 选 答

请注意，版面安排可以变动，但是，下列选项的顺序以及措辞必须与英文版保持一致。

问题		记分
1）	在此不超过一小时路程的区域内（从您的寓所或这里），您认为有几个人可以依靠，或者与您非常亲近？ 请勿将您的家人包括在内。	0 人 = 1 1-2 人 = 2 >2 人 = 3
2)	上个星期，您与不和您共同生活的人，相聚多少次？譬如说，您去看望他们，或者他们来看您，或者结伴外出？	
	a) 零次 b) 一次 c) 两次 d) 三次 e) 四次 f) 五次 g) 六次 h) 七次	0 = 1 1-2 = 2 >2 = 3
3）	上个星期，您给亲戚、朋友或者其他人通过多少次电话（不论是您打给他们，或者他们打给您）？	
	a) 零次 b) 一次 c) 两次 d) 三次 e) 四次 f) 五次 g) 六次 h) 七次	0-1 = 1 2-5 = 2 >5 = 3
4）	上个星期，您参加过几次您加入的社团组织、宗教团体或者其它团体的聚会？	
	a) 零次 b) 一次 c) 两次 e) 四次 f) 五次 g) 六次	0-1 = 1 2-5 = 2 >5 = 3

d) 三次　　h) 七次

5） 是否可以认为，您的家人与亲朋好友（即对于您来说至关重要的人）能够理解您？

a) 一次也不　a = 1
b) 几乎不　b = 2
c) 有时　c = 3
d) 大部分时间　d = 4
e) 总是　e = 5

6) 您是否感到自己对您的家人与亲朋好友（即对于您来说至关重要的人）是有用的人？

a) 一次也不　a = 1
b) 几乎不　b = 2
c) 有时　c = 3
d) 大部分时间　d = 4
e) 总是　e = 5

7） 您了解您的家人与亲朋好友安康与否？

a) 一次也不　a = 1
b) 几乎不　b = 2
c) 有时　c = 3
d) 大部分时间　d = 4
e) 总是　e = 5

8） 当您与您的家人与亲朋好友交谈的时候，您是否感到他们注意倾听您的意见？

a) 一次也不　a = 1
b) 几乎不　b = 2
c) 有时　c = 3
d) 大部分时间　d = 4
e) 总是　e = 5

9） 您的家人与亲朋好友中间，您是否感到自己说了算？

a) 一次也不　a = 1

b) 几乎不 b = 2
c) 有时 c = 3
d) 大部分时间 d = 4
e) 总是 e = 5

10) 您是否至少可以向部分家庭成员和亲朋好友倾吐自己最深层次的问题?

a) 一次也不 a = 1
b) 几乎不 b = 2
c) 有时 c = 3
d) 大部分时间 d = 4
e) 总是 e = 5

11) 您对自己与家人与亲朋好友的关系的满意程度?

a)	极不满意	a = 1
b)	很不满意	b = 1
c)	不满意	c = 3
d)	大部分时间满意	d = 4
e)	任何时候都满意	e = 5

记分说明

问题 1-4 关于社会联系的作用。问题 5-11 有关满意程度。

将每一类问题的得分相加，得小计分，然后它们全部加起来，就是“社会联系给您的帮助”问答表的总分指数。

有关社会成员的相互关系的分数是 4-12。满意程度的分数 7-35。“社会联系给您的帮助”问答表的指数总分 11-47。

Appendix 4.4d.

Demographic Questions and the open question of QOL

What is your name? _____

What is your gender? _____

What is your birth date? _____

What is your telephone number? _____

What is your family address?

_____

What is your postal code? _____

How is your marital status?

A. Single
B. Married
C. Divorced
D. Widowed

How many years have you immigrated to Montreal? _____years

How many years of formal education had you received? _____years

How much is your family income each year?

A. equal or more than $10,000 Canadian dollars, less than $25,000 Canadian dollars;
B. Equal or more than $25,000 Canadian dollars, less than $50,000 Canadian dollars;
C. Equal or more than $ 50,000 Canadian dollars, less than $75,000 Canadian dollars;
D. Equal or more than $ 75,000 Canadian dollars, less than $100,000 Canadian dollars;
E. Equal or more than $ 100,000 Canadian dollars.

How many family members are living together in the same household?

How is your living arrangement?

A. live alone
B. live together with your spouse
C. live together with your son or/and daughter
D. live together with your spouse and your child(ren)
E. others living arrangements

How is your language ability?

English good ☐ fair ☐ poor ☐

French good ☐ fair ☐ poor ☐

Chinese good ☐ fair ☐ poor ☐

Do you have any chronic condition? _____

If you have, please write down the name(s) of the illness (for example: hypertension, diabetes)

_____

Please describe: What is important for your quality of life?

您的姓名：_____
您的性别：_____
您的出生年月：_____年_____月_____日
您的联系电话：(　)_____
您的家庭住址：_____邮政编码:_____
您的婚姻状况：
A. 未婚
B. 已婚
C. 离婚
D. 丧偶
您移居到蒙特利尔多少年了？_____年
您曾经接受过多少年的正规教育？_____年
您的家庭月总收入是多少 (与您居住在一起的家庭成员的收入之和)?
A. 不足 25,000 加元
B. 等于或多于 25,000 加元, 不足 50,000 加元
C. 等于或多于 50,000 加元, 少于 75,000 加元
D. 等于或多于 75,000 加元, 少于 100,000 加元
E. 等于或多于 100,000 加元。
您家里共有几位家庭成员居住在一起?_____
您是怎样安排自己的居住的?
A. 独居
B. 与配偶居住在一起
C. 与子女居住在一起
D. 与配偶和子女共同居住在一起
E. 其它类型居住安排
您的语言能力如何?
英语: 好 □　　一般 □　　不好 □
法语: 好 □　　一般 □　　不好 □
汉语: 好 □　　一般 □　　不好 □
您有无慢性疾病？　_____
如果有, 请列出病名 (比如:高血压,糖尿病) _____
请您描述一下您对生活质量的理解:

Appendix 4.5.

CONSENT FORM

Project Title:

QUALITY OF LIFE OF THE CHINESE ELDERS LIVING IN MONTREAL

Investigators:

Tianli Liu, Dr. Eva Kehayia.

Objectives of the study:

The objective of this study is to estimate the Quality of Life (QOL) of the elderly Chinese minority living in Montreal and to explore the indicators of the QOL of Chinese elders.

Introduction:

We are asking for your participation in a research study. Your participation will help us to increase our understanding of the quality of life and of the indicators of QOL among Chinese elderly individuals living in Montreal. The results generate from this study will be reported in Tianli Liu's thesis, and they are also expected to provide health service providers and policy makers with preliminary information for future intervention programs in this area.

Procedures:

In this study, you will be interviewed at your convenience by a researcher, who will ask you questions to assess your mental function, your quality of life, your social support, your activity of daily living function, and some questions about your age, income, education, language abilities and living arrangements. These questions will take up about 15-30 minutes of your time.

Possible benefits:

There are no direct benefits to you if you participate in this study. This research will allow the researchers to understand more about the QOL and its indicators of the Chinese elders living in Montreal, which may help to improve QOL of this population in future.

Possible risks:

There is no more than minimal risk to you if you participate in this study. This study requires a time commitment on your part.

Participation and withdrawal:

Your participation in this study is entirely voluntary. It is understood that you may withdraw from the study at any time, and may refuse to answer any question you wish. There is no penalty or benefits lost if you refuse or withdraw. At all times your best interests are more important than the goals of this study.

Confidentiality:

All information collected is confidential and your identity will not be divulged at any time. You will be identified by a code in research report and during process of data analysis. All personal details recorded will be kept in a filing cabinet under lock and key for a period of five years following the end of the project. Following this period the records will be destroyed. Only the investigators will have access to your file. You may also request at any time that these files be destroyed. The information about you will be used for research purposes only.

Contact information:

If you have further questions regarding this study, you may contact Tianli Liu at (514)768-2175, email: tianli.liu@mail.mcgill.ca; or Dr. Eva Kehayia at (514) 398-5867, e-mail: eva.kehayia@mcgill.ca.

Signature:

Participant's signature:

Your signature signifies that the study has been explained to you, that your questions have been answered to your satisfaction and that you agree to participate.

_____ _____ _____

Participant's name Participant's signature Date (mm/dd/yy)

Witness' signature:

Your signature signifies that the study has been explained to the participant, that their questions have been answered and that their participation is voluntary and the consent is free.

_____ _____ _____

Witness's name Witness's signature Date (mm/dd/yy)

同意意见书

项目主题 :旅居蒙特利尔的老年华人的生活质量

调查人员 :刘天俐女士, Eva Kehayia 博士

研究目的 :

本项研究课题是评估作为少数族裔生活在蒙特利尔的华人老人的生活质量，考察老年华人的生活质量指数。

绪言：

希望您参与我们的调查研究活动。您的参与将有助于增进我们对定居在蒙特利尔的华裔老年人个体生活质量及其有关指数的了解。研究成果将由刘天俐写入她的论文，同时，研究人员希望，该市提供医疗卫生服务和制订医疗卫生政策的部门，将来在拟订工作计划的时候，能够参考他们事先了解到的情况。

调查程序

在本次研究工作中，调查人员将在您方便的时候，向您提些问题，对您的神智清晰程度、生活质量、社会联系和日常生活能力进行评估，还会问及您的年龄、收入、文化程度、语言能力和居住情况（独居或与家人合住）。这些问题也许会占用您十五至三十分钟时间。

有无报酬

如果您参加这项研究工作，并没有直接的好处。研究人员通过调查可以更好地了解生活在蒙特利尔的老年华人的生活质量和有关指数，以便将来改善这部分人的生活质量。

有无风险

假如您参加本项研究，一般不会给您带来什么风险，只是需要您奉献一点时间。

参与和退出

加本项研究，纯属志愿。您随时可以退出，也可以拒绝回答任何问题。如果您拒绝接受调查，或者中途退出，无需支付罚金，也不会遭受什么损失。

在任何时候，对您有所裨益，比此次研究的目的更为重要。

保守秘密

我们所有搜集到的情况，都予以保密，在任何时候，都不会透露您的身份。在研究报告里，以及在分析数据的过程中，您的身份是以代码表示的。在研究工作完成以后的五年内，全部个人详细资料将保存在上锁的文件柜内。期满五年，资料销毁。只有调查研究人员有权查阅资料。您在任何时候都可以要求销毁与您有关的材料。关于您的情况，仅用于研究目的。

联系信息

倘若您想进一步了解有关此次研究的情况，请与刘天俐女士联系，电话：(514) 768-2175, 电子邮件：tianli.liu@mail.mcgill.ca； 或与 Eva Kehayia 博士联系，电话：(514) 398-5867, 电子邮件：eva.kehayia@mcgill.ca

签署姓名

参加人签字：

您一旦签名即表示，这次研究项目业已向您解释清楚，调查研究人员对于您的问题，已经给予令人满意的答复，您同意参加这一项目。

_____	_____	_____
参加者姓名	参加者签名	日期（月/日/年）

证明人签名：

您的签名表示，这次研究项目业已向参加者解释清楚，他们的问题已经得到令人满意的回答，他们自愿自觉同意参加此项研究。

_____	_____	_____
证明人姓名	证明人签名	日期（月/日/年）

Appendix 4.6.

MUHC Institutional Review Board Approval