# Factors Contributing to Wellness of the Aging Population in Thunder Bay

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## Abstract

The purpose of this three year sequential study was to examine factors contributing to the wellness of 32 self-professed healthy seniors aged 65-74, 75-84, and 85 years of age and older, living in Thunder Bay based on their; patterns of physical activity; factors contributing to health and well-being; and lifestyle habits. In an attempt to better understand wellness over time, these respondents were visited each year from 1993 to 1995. Since the number of participants in the oldest group declined from 11 to three by the third year of the investigation, their responses are not included where they would violate rules of statistical inference. Walking and gardening were the most popular activities. Participants in the youngest age group were consistently active in the largest number of activities of the most vigorous nature over the three year period. The middle and oldest age groups reported a change by doing less vigorous physical activity over the three year study. However, further analysis indicated that the middle and oldest age groups engaged in compensatory behaviour. They replaced vigorous physical activity with less intense activity and practiced over a longer duration. Participants uniformly perceived themselves as more active than their peers during adolescence, and also in each year of the study. Each age group identified regular physical activity, diet, and rest as the most important factors contributing to health and well-being. Despite their positive perception of personal health status, all three age groups indicated functional difficulty with: standing, bending, and hearing. Participants also indicated that they were coping with chronic conditions such as: arthritis, heart disease, and high blood pressure. The seniors in this study shared similar lifestyles. Each age group acknowledged the importance of reaching specific goals such as: independence, fitness, having fun, and relaxation. Each group reported doing various leisure activities such as reading, visiting with friends, and family. Even though the choices that the seniors made in the three age groups demonstrated some variability, their responses indicate positive aging, and give us an understanding of wellness. The behaviour of these seniors indicates that they exhibit the components of successful aging as illustrated by Rowe and Kahn (1998): low risk of disease, high mental and physical function, and active engagement with life.

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## Introduction

It is evident that there will be a significant increase in the 65 plus age group going into the next century. According to Brown (1992), in 1951 only 3% of the Canadian population was older than 65 years of age, while in 1971 some 8% of the population was over 65. Specific demographics indicate that current 65 year old individuals account for 10% of the national population. Within two decades, this age group is expected to increase to 15% of our national population (Corroll, 1987). In Thunder Bay this is already a reality. The Thunder Bay District Health Unit 1996 census report estimated that the 65+ population was 15% of the total population.

As early as 1975 Neugarten pointed out that the downward trend in the age of retirement would continue into the next century. More recently, this point was reinforced by Brown (1992) when he noted that more and more workers have retired between 50 and 55 years of age, especially in industries plagued by recession and low profitability.

The relevance of these statistics and predictions is that retired people regardless of chronological age, share a similar status in society, which is directly affected by health status or wellness. Wellness factors in young, middle and older age groups contribute to longevity and overall well-being in the later part of the life span. By studying the factors contributing to well-being now researchers may be able to prepare individuals to make positive choices for future adaptations. In fact, knowledge gained through the longitudinal and cross-sectional study of aging and wellness as vitality can be perceived as important in the district of Thunder Bay (Kelly & Lorch, 1990) where provincial and federal norms for people over 65 are already exceeded.

## Wellness

As a result of Thunder Bay's older population growing in such significant numbers, researchers are interested in obtaining vital information about this particular population. Chodzko-Zajko (1994) indicated that the increasing number of research studies examining various aspects of the aging process have been accompanied by an expansion of interest in methodological issues regarding design and analysis of experiments.

Specifically, in the field of physical activity, it is advantageous to investigate people in various cohorts and over time to determine changes in physical activity patterns, goal setting, and factors relating to health. This rationale can also be applied to the elderly when identifying trends in patterns of behaviour. Within the study of aging, the inclusion of longevity and overall wellness has become one of the fastest-growing, multi-disciplinary areas of study in our time (Gayle & Gayle, 1987). Recently, McPherson (1994) noted that attitudes and values learned in early life exert a profound influence on subsequent lifestyle choices. One way of testing this theory is to study groups (young, middle and old) across age cohorts and over time.

Bokovoy and Blair (1994) note that the present increasing size of elderly populations raises numerous on-going public health and social concerns. While the health care system within Ontario undergoes dramatic shifts from institutional to community care, professional growth and understanding must occur to support the needs of the elderly while their independence remains. Bokovoy and Blair reinforce that the impact on both the health care system and on society in general is likely to be profound with increasing life expectancy for both male and females alike. Professionals in the health care field must try to better understand healthy aging and quality of life if they want to reduce morbidity.

According to Spirduso (1995) it is believed that the elderly live better when they are comfortable and can experience their maximal level of independence. If an expanded knowledge base and proactive involvement regarding the aging population does not occur, services and care will not be optimally used in an efficient manner. Studying the characteristics of the current aging population can influence future knowledge concerning; chronic disease, mortality and the level of functioning, loss of independence, and the needs for long-term care of those living to the oldest ages (Spirduso, 1980).

The Campbell's Survey on Well-being (CSWB) (Stephens & Craig, 1988; CSWB) indicated what Canadians were doing from ages 10 to 65 over a 7 year period in Canada. The CSWB objective was to provide a follow-up for the 1981 Canada Fitness Survey in which more than 23,000 Canadians aged 7 and older participated. The data generated from the CSWB were cross-sectional by design, although some cohorts were revisited a second time. The report yielded much information about how Canadians lived their lives concerning physical activity, health and well-being, illnesses, goal setting, smoking, and alcohol consumption.

Unfortunately, little emphasis was placed specifically on cohorts over the age of 65 years (Stephens & Craig, 1988; CSWB). Individuals beyond 65 years of age were grouped together and considered the same. Although the CSWB provided a clear picture as to what Canadians were doing, it did not identify changes in the behaviour of seniors. A clearer description of changes in physical activity patterns over time might help to identify the steps to wellness.

Research has stressed the importance of a physically active lifestyle for all concerned (Spirduso, 1995). Recommendations for research, interventions, and policies have evolved to evaluate and promote exercise specifically with elderly populations. For example, the Healthy Fit 2000 report emphasized the need to

prolong the period in which the elderly can live their lives independently. According to the Public Health Services (1990) particular attention has focused on the quality of life through goal setting, and the need to increase participation of adults over 65 years of age in regular, appropriate physical and leisure activities by the year 2000.

## Health and the Aging Population

Conrad (1976) suggested that many older adults acquire excessive fears about participating in moderate physical activity, especially those elders who have never really been physically active. Conrad further adds that as a result of this phenomenon, elderly people tend to underestimate their own physical ability, capabilities, and over estimate the benefits of light sporadic exercise. If the benefits of physical activity are well documented, then why might people down-play what activity they do get, or resist additional pursuits?

Spirduso (1980), and Stacey, Kozma and Stones (1985) have indicated that physical activity will promote self-image, social skills, cognitive functioning, positive moods, and reduce symptoms of stress. McPherson (1987) reinforced that there does seem to be evidence that physical activity at a moderate level can alleviate some symptoms associated with mild to moderate depression, boredom, or feelings of withdrawal.

Aging is an individualistic event for many, and therefore should be researched with much emphasis on personal factors, patterns, and characteristics. Spirduso (1995) adds that aging is an individualized process, and averages of function and behaviours for different chronological age groups are just that - averages. However, to health promotion specialists, there is a need to estimate abilities for various age groups to maximize (health care) services. Researchers

who study aging from a person's biological age rather than chronological age may readily highlight the individual aging process.

The identification of specific factors which contribute to healthy aging and well-being is the focal point of this study. An early attempt to conceptualize wellness was provided by Hoeger (1986) in his Wellness Continuum (see Figure 1). The inadequacy of the detail provided in this schematic is evident when we note the absence of the identification of any internal or external factors contributing to one's state of wellness.


**Figure 1**. The Wellness Continuum
(adapted from Hoeger, W., 1986)

If researchers accept that life and all the 'realities' that make it so are interconnected and valid, then research must reach beyond this simple approach to identify the connections in peoples' lives that make wellness a reality. For example, what factors (internal/ external) connect the attributes of positive aging, and how is this 'positive' outlook maintained when it is clear that the body is undergoing physiological decline? What, therefore, is healthy aging from the individual's point of view? It is clear that Hoeger's continuum is missing many of the ingredients.

Health care professionals and researchers have been in search of the ingredients of successful aging, when actually those who are aging themselves have seldom been asked to report and identify these factors of wellness. Models that are discussed in this paper are predominantly concerned with varying means of adapting to reach a desired goal. A clearer analysis of how productive and rewarding the aged years can be should drive researchers to focus on the outcome

of the adaptive process. Atchley (1989) notes that the internal adaptive process is successful if the person has a high degree of life satisfaction, is able to remain relatively autonomous at least psychologically, and maintain a personal sense of continuity.

## Statement of the Problem

The purpose of this three year sequential study was to examine factors contributing to the wellness of self-professed healthy participants living in Thunder Bay based on their; patterns of physical activity; factors contributing to health and well-being; and lifestyle habits. In an attempt to better understand wellness over time, these participants were visited each year from 1993 to 1995. This study attempted to answer how wellness is defined by those who perceive themselves as fit, healthy and happy.

## Review of Literature

In North America, demographic reports indicate that people are living longer. Just recently the average life expectancy for both male and female citizens was extended to 75 and 81 years of age respectively (Statistics Canada, 1998). According to Novak (1985), there are more elderly people in Canada than ever before. With an increasing aging segment within Canadian society, health care professionals must augment their knowledge about aging and health promotion aimed at older adults. One way of increasing ones' knowledge about aging is to study the models which have developed in attempts to explain it.

Traditionally, our society as a whole has adopted negative ideas of what growing old means. For example, one predominating view of aging is that aging is synonymous with decline and barriers. Osgood (1987) outlined studies of older individuals that have highlighted several categories of problems affecting the elderly including; physical, economic, and sociopsychological. Some might argue that problems associated with the elderly's sociopsychological state result from diminished social participation, loss of employment, and the sense of meaninglessness.

Hyman (1969) noted that loneliness is very common in the elderly and can have a profound influence in aggravating the emotional components of an illness by leading to feelings of insecurity and, later, apathy. According to Seligman (1975) the aged are the most susceptible to helplessness because they have experienced the greatest loss of control and choice. Kastenbaum (1964) discussed old age not only as an unexpected event, but also as a profound misfortune in which individuals

are faced with the difficult task of explaining to themselves and to others how it comes to pass that they are not what they used to be.

Katz termed these approaches the problematizations of old age (1995). Each discipline, biology, sociology and psychology has attempted to explain the issues of aging from its own point of view. Although most of these models run into difficulty in their application, they have all had a profound influence and made a major contribution to our understanding of the aging process.

## Models of Aging

Biological models of aging have historically dwelt on the deterioration of the body systems as chronological age increases. Since many of the participants in studies were drawn from frail or ill populations, the biological impact of aging became a self-fulfilling prophecy. More recently, Yates and Benton have distinguished between the terms aging and senescence (1995), or chronological or biological age.

Although all human cells undergo the process of apoptosis, or programmed cell death which eventually ends in total system death, this process actually allows the regeneration of aging systems throughout the life span (White, 1994). Each individual has a genetic determination or internal time clock which does not necessarily match our reference to external time or chronological age. It is senescence, not aging, which describes the damage, harm, loss or failure associated with aging of the human being (Yates & Benton, 1995).

It is important to emphasize that stability of the organism in biological terms, actually involves a dynamic process of loss and recovery from a range of perturbations or insults to the system. This resilience, of the organism to maintain its characteristics, has recently been termed homeodynamics (Spirduso, 1995).

Although stability has often been associated with terms like health, vigor, and well-being, most biological models of aging do not provide a recipe for positive aging.

Social models of aging, on the other hand, have attempted to place the person in a social context and describe the adjustments an individual makes to the problems of aging (Marshall, 1981; Marshall & Tindale, 1978). Disengagement theory (Cumming & Henry, 1961) represents the most profound application of structural functionalism to the condition of the elderly in terms of their social and psychological reactions to aging. Essentially, the theory states that elderly people may feel the need to withdraw and disengage from society, when their so-called functional time has ended. The disengagement variable encompasses the psychological and social process, including a trend toward fewer, less frequent, and less intense social contracts. Hochschind (1975) argues that the use of psychological and social processes to explain adjustment to old age obscures the diverse process that the variables represent.

Despite the limitations of the disengagement theory, it does have profound effects on the field of social gerontology because it attempts to explain the product of growing old. Unfortunately, the disengagement theory offers a product in the aged rather than describing the process. Birren and Bengtson (1988) indicate that the disengagement theory's challenge to what was termed "activity theory" resulted in an enduring interest in explaining the "life satisfaction" or "morale" of older people in social gerontological research.

Activity theory, on the other hand, argues that the more active elders are, the greater their satisfaction with life. Cavan (1962) noted that the theory has undergone transformation since its original formulation. Recently, it has been more directly tied to symbolic interactionism, placing a greater emphasis on continued social interaction rather than withdrawal and, promoting the development of a self-

concept among the elderly. The theory does imply that physical activity may revolve around social events, and that older persons need and desire high levels of social activity. Moreover, researchers have indicated that the effect of activity on an older individuals' life satisfaction is linked to the environment in which a person may live (Bultena, 1971). The theory does not address the potential relevance that this may have on the process of aging.

The activity perspective also overlooks variations in the meaning of particular activities in the lives of older people. Lemon (1972), for example, has indicated that the relationship between well-being and physical activity in old age depends on the type of activity: formal, informal or solitary. According to Birren and Bengtson (1988), an accurate attempt to illustrate patterns of healthful aging among the elderly must account for interactions that are rewarding to them and, conversely, those interactions that are too demanding physically and mentally. Essentially, elderly people, like many, naturally engage in physical activity for a variety of intrinsic and extrinsic reasons that are meaningful, and likely because the activity promotes their perception of a healthy approach to life.

In the search for a more definitive and comprehensive model of aging, social gerontology in the early 1970's turned to negotiation models for explaining peoples' adequate role performance in later life. According to Marshall (1995) much of the evidence to support this approach came from ethnographic studies, and was based on identity: continuity with work (Atchley, 1989); political identities in later life; affinity with pre immigration identities; and the maintenance of self-esteem in the face of the stigma of old age and approaching death.

This particular type of model draws on symbolic interactionist sociology, where an individual aging is seen as a career that is constructed or negotiated by the individual, interacting with others of his/her own free will. This model does not

imply that external socialization is a prerequisite for being able to negotiate with life, rather it indicates one of the choices available to the specific individual. An independently living elderly person chooses and decides (internally) what path to walk on, when to walk on it, and how. Given a reasonable (self definition) level of physical and mental wellness, an elderly person may adhere to some arbitrary (but personally satisfying) level of stability throughout the aging process.

Hendricks (1992, p. 1) states, "through negotiation with those around us (external), we realize who we are and launch ourselves toward who we want to become (internal)". If this then attempts to define socialization, Marshall (1995) indicates that life-long socialization; is interactive, has positive and negative role models, and presents reference groups which are actively considered by the aging individual in relation to identity. However, constructs based on theoretical models of aging must identify what the aged are doing, and address their stability during the so-called negotiation - career phase.

Atchley (1989) explains that the concept of self can be viewed as a theory about ones' interactions in the world, and he bases it on his theory of continuity. It advocates that older people tend to do things they have always done, or try and find substitutes for these activities by making the appropriate adaptations (Novak, 1993). According to Atchley (1989) continuity theory is a theory of adult development which assumes that in making adaptive choices, middle-aged and older adults attempt to preserve and maintain existing psychological and social patterns by applying familiar knowledge, skills, and strategies in familiar areas of life.

This theory is not static. On the contrary, continuity theory is evolutionary, advocating that an individual operates on his or her own level of wisdom learned through life's experiences. Wisdom is a dynamic, ongoing phenomenon. Continuity theory is constructionist, that is, it assumes that people actively develop

individualized personal constructs, or ideas of what is going on in the world in response to their life experiences (Kelly, 1955).

Continuity theory advocates for successful aging unlike the disengagement or activity theory, which gave opposing prescriptions for successful aging (Havighurst, 1963). The proposed theory predicts that in their choices, people will show a bias towards what they perceive to be continuity. Atchley (1989) notes that success may indeed be the result of these choices, although in some cases it may not. It is expected that those individuals who perceive themselves as healthy, both mentally and physically, would have solid concepts of identity and self that persist over time. Atchley (1989) reinforces the idea that continuity does not refer to an obsessive clinging to the past,

> ...instead...adult identity is like a stage play in which old sets are embellished and sometimes remodeled and new sets sometimes created to add new scenes to familiar acts. Familiar characters get new twists, some characters die or leave, and new characters get added although they are often superficial. However, the self, the perceiver, has no doubts who is playing the title role (p. 9).

Birren and Bengtson (1988) argue that human beings are interpersonal entities and therefore not egoistic in the fundamental sense. The assumption that human beings are, for the most part, active in creating their own worlds suggests that basic survival is a form of continuity. The premise that one can age with a high perception of wellness suggests that humans are not totally reactive creatures, and that thought is given to preserving the wellness "ingredients".

## Wellness

In contrast to the models on aging reviewed so far, where the concept of positive aging may seem to depend on an accident of development, or a particular theorist's point of view, philosophies of wellness are devoted to the definition of positive aging. This more integrated view of aging can be traced back to the Greek ideology of, "a healthy mind in a healthy body". This idea suggested a potentially important link between ones' mind and body as a whole. McDowell (1983) stated that the Greek command to "Heal Thyself" is a self preserving mandate to fuel the fullness and completeness of our human abilities, potential and desires, (p.15).

One of the first modern researchers to formulate a philosophy termed, "high level wellness", was Halbert Dunn (1961). Dunn was the first to note that each individual must accept responsibility for his/ her actions. Second, wellness is more than the absence of disease but rather a state of complete physical, mental and social well being. And finally he reinforced the notion that the practice of healthy lifestyles, values and attitudes enhances one's potential for wellness.

A wellness continuum was put forth by Hoeger (1986). It is a simplistic application of the conceptual philosophy presented by Dunn. Unfortunately, the model as presented presumes a rigidity about life that fails to explain the implications for diminishing, improving or maintaining any particular position on the continuum over time.

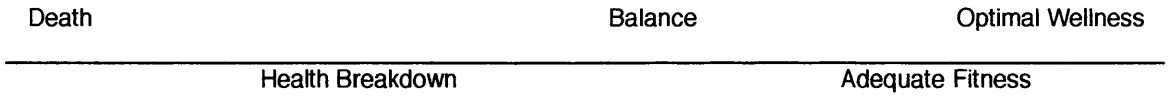


**Figure 2**. Title: Wellness Continuum (p.34)

According to Kambis (1987), most people tend to be located in the risk area moving to the left on the continuum. Furthermore, when their lifestyle or uncontrollable factors push them past the health breakdown point, a disease or injury manifests itself. It is now the task of a physician to push the person away from death.

Due to the lack of specificity and assumption that aging equates to health breakdown of this particular continuum, this wellness continuum actually promotes a rigid and restrictive view of wellness. In an attempt to better understand the implications of 'wellness' and 'health promotion' of the elderly, identification of what real people are doing for their 'health' may provide crucial information to the ingredients and mechanics of a healthy aging model.

Fallcreek and Mettler (1984), identify personal self help as one of the main pillars of health promotion in the elderly.

> Self help involves enabling people to have more control over their life and begins by helping them perceive themselves as effective change agents who have the right and ability to influence internal and external forces affecting their lives. The basic theme of health promotion in the elderly is wellness through self activation and empowerment. (p. 65).

Similarly, Shephard (1987) argues that older adults can choose to move toward positive health by accepting situations and finding their meaning in life. Some may point out that the meaning of life is basically unchanged across the duration of a life span. However, if appropriate phases of adaptations are instilled in ones' life, mental, physical and spiritual successes may surface throughout future years of aging. Kambis (1987) noted that a major component of wellness is that of

good emotional health which involves learning to express ones' assertiveness and creativity.

Health and well-being are terms which encompass social, physical, and psychological concepts, which are represented on a continuum with positive and negative poles. Investigating perceptions of wellness in healthy aging adults appears to play an important role in identifying specific factors. The wellness approach according to MacPherson (1987) involves;

> ...adhering to and seeking to change societal norms concerning the components of wellness; accepting self-responsibility for personal health; wise and judicious use of the medical care system; striving for physical fitness; nutritional awareness; and, an ability to manage stress and boredom (p.15).

Recently, researchers have reinforced the definition of successful aging which is dependent upon individual choices and behaviours, attained through individual choices and effort (Rowe & Kahn, 1998). These researchers have identified three components of successful aging where each factor is important in itself, and to some extent independent of the others.

Rowe and Kahn (1998) identify the first component as avoiding disease and disease-related disability, and also the absence or presence of risk-factors for disease and disability. It has been suggested that modern medicine has developed as an applied science of repair rather than prevention. Historically, geriatrics has been slow to make the shift to an inclusive orientation which promotes prevention as well as cure (Rowe & Kahn, 1998).

The second component of successful aging is described as the maintenance of mental and physical function through out daily routines and

activities. Essentially, individuals need to have a certain ability to meet their basic daily needs. A comfortable level of independence, for many elders, is their principal goal. According to Rowe and Kahn (1998) independence means continuing to live in ones' house, taking care of ones' self, carrying out daily routines - dressing and washing, housework, shopping, meal preparation, and paying bills.

Finally, the third component refers to ones' relationships with others (friends or family) and behaviour that is productive. Rowe and Kahn (1998) further note that (we) do not deny that certain losses become more probable with increasing age, such as death of a loved one or moving from a familiar home. They add that the real task of successful aging is to discover and rediscover relationships and activities that provide closeness and meaningfulness. It is the belief of the researchers that it is the combination of all three components that represents the concept of successful aging most fully.

## Aging and Exercise

In a recent study, physical activity and ability was focused on as an indicator of overall health. The National Institute on Aging (1991) reported that in the US, 42% of the study population were unable to perform heavy household work, 26% were unable to walk 1/2 mile and 19% were unable to climb stairs. According to the National Population Health Survey among adults 75 and over, only 29% of men and 19% of women are physically active (CFLRI, 1998). Independent living requires a certain ability to fulfill daily requirements (shopping, hygiene and basic movement). Persons wanting to maintain or establish independence must resort to activity (physical) to achieve their goals.

Shephard (1987) has indicated a base Max $V0_2$ of 16 ml/kg/min. is necessary to sustain independent living. More recently he has advised that

moderate exercise done on a regular basis is one of the best ways of maintaining quality of life for older adults (1997). The relationship between sedentary lifestyle and the risk of chronic disease is becoming more clear through longitudinal studies and research on the aged, such as the Harvard Alumni Study (Paffenbarger, R., Hyde, R., Wing, A., & Hsieh, C., 1986); Longitudinal Study of Aging (In: S. Blair, P. Brill, & H. Kohl., 1988); Alameda County Study (Kaplan, G., Seeman, T., Cohen, R., Knudsen, L., & Guralnik, J.,1987); and the MacArthur Study (In Rowe & Kahn, 1998-p.13). Bokovoy and Blair (1994) note that further studies on activity or fitness and disease risk in older men and women are needed. Historically, many studies have included young old and old individuals, although few were separated by age group.

In the last few decades, health and fitness programs via regular fitness and physical activity have been promoted. In Canada, for example, Canadians were touched by the Canada Fitness Programme and Participaction movements. The American College of Sports Medicine (1990) has noted that scientists have promoted a scientific approach to exercise prescription for all ages that specifies exercise intensity, duration and frequency. Traditionally, exercise therapists suggested vigorous physical activity for at least 20 minutes/ per day, three times a week. Surprisingly, this mind set about fitness is still ingrained in society.

Recently there has been a shift away from this regimented approach to fitness to the concept of active living. A lifestyle constructed of meaningful movements and tasks in which physical activity is valued and is integrated into daily living is recommended (ALCOA, 1999). A major recommendation for the sedentary elderly is to increase activities such as walking, mowing the lawn, climbing stairs, and gardening (Bokovoy & Blair, 1994). DeBusk, Stenestrand, Sheehan and Haskell, (1990), reporting on a recent randomized clinical trial suggested that three

10 minute walks over the course of the day have about the same impact on physical fitness as one 30 minute walking session.

Incorporating fitness into ones' lifestyle through 'meaningful' movement may replace the burden of exercise with pleasurable habits. Spirduso (1995) indicates that lifestyle exercise focuses on getting individuals to integrate multiple short bouts of physical activity into their everyday lives.

The literature has also commented on research investigating regular active and elite older individuals. Current research has examined the effect of exercise training in older adults and the effect of a lifetime of activity on physical attributes and mortality. Chodzko-Zajko (1994) notes that researchers tend to compare groups who are physically dependent to the physical elite.

However, studies that allow participants to volunteer based on their own definition of 'physical/ mental conditions' may yield realistic data sets. In conjunction with studies on the physically elite, researchers could then compare rates of decline within the aging population with better understanding. For example, longitudinal studies conducted on athletes who continue consistent exercise/activity may challenge assumptions about the rate of physical decline attributable to sedentary behaviour or reduced training (Pollock, Foster, Knapp, Rod & Schmidt, 1987).

## Research Methods: Past and Present

Research concerning the elderly has taken on several forms over the last few decades. According to Chodzko-Zajko (1994) by far the most common research designs in experimental gerontology are the cross-sectional and longitudinal.

Havens (1995) has indicated several issues pertaining to gerontological research designs. With respect to sampling strategies, researchers who focus on elderly cohorts must deal with: cohort effect; potential for high attrition rates; diminishing mental and physical capacities; and differential mortality rates among male and female participants.

According to Chodzko-Zajko (1994) a major limitation is the inability to differentiate between age and cohort effects. Based on a cross-sectional method, one could gather information on a particular participant at one specific time, and yield little information about trends. Spirduso (1995) indicated that because different cohorts are likely to have been exposed to different education, cultural, nutritional, medical and other experiences, observed differences between age groups in cross-sectional studies may sometimes be explained by cohort factors rather than by age effect per se.

Cross-sectional studies alone have further restrictions when generalizing to the older population due to morbidity. Mortality is not the only factor responsible for the attrition of the participant pool; morbidity and chronic physical inactivity also restrict the availability of older adults for participation in exercise and physical activity research (Chodzko-Zajko, 1994).

In longitudinal design methods, repeated measures are made on the same individual over extended periods of time, permitting the direct measurement of behavioural change for each participant (Chodzko-Zajko, 1994). This design enables a researcher to follow a particular participant (s) for one particular cohort.

Literature does suggest that many physiological functions need not decline at a constant rate throughout life (Spirduso, 1995)). Over time, Bokovoy and Blair (1994) note that many age related changes may be modified through lifestyle interventions such as good nutrition, smoking cessation and exercise. A question

that researchers strive to answer or clarify is whether change/ stability is due to period or age effects. The 'period effect' is defined as any change in behaviour over time that occurs in response to fluctuations in social and cultural norms rather than to aging effects (Chodzko-Zajko, 1994).

Analysis of all elderly cohort studies is not necessarily appropriate for longitudinal research design. Havens (1995) notes one particular question which demands longitudinal research is one which relates to determining the impact of age versus cohort versus time or period in aging samples.

There are three key elements identified regarding aging cohorts and longitudinal studies when dealing with age versus cohort versus time (Havens, 1995). In an attempt to isolate or infer a 'cause and effect' within a study, attention must be paid to the significant/ non-significance in the various samples designed to identify change over time.

**Table 1** Elements based on statistical outcomes

| ***Significant*** | ***Non-significant*** | ***Infer*** |
|---|---|---|
| Cross-section and Longitudinal | Time lag | Age |
| Cross-sectional and Time Lag | Longitudinal | Cohort |
| Longitudinal and Time Lag | Cross-sectional | Time |

Adapted from Botwinick (1983)

Botwinick (1983) put forth the above chart which indicates the three elements (inferences) based on the statistical outcome. One would infer that age is the cause when the sequential response is not significant; cohort or 'era' is the cause when longitudinal comparisons show no significance; and time of measurement is the cause if cross-sectional comparisons are not significant. Havens illustrates her inferences to mean that:

> The first case enables one to say, for example, the 70 year olds behave in a particular way. The second case demonstrates that a birth cohort, for example, only those born between 1911 and 1920 behave in that way. The third case results when all those, regardless of age or cohort, who lived through events behave in the same way.

Summary

The review of literature has introduced several theories of aging which have taken various paths to explain the 'aging phenomenon' for individuals sixty-five years and older. It was the researchers purpose to understand how self-professed healthy individuals over the age of sixty-five years of age define well-being. Recent literature has suggested three components of successful aging which, ideally, combine to produce a successful model of aging. Having identified and recognized the theories of aging in the literature, how do the participants in this study fit into a successful aging model?

## Method

### Participants

The sample consisted of 32 older adults at least 65 years of age who volunteered for the study on the basis of their belief that they were healthy seniors. Participants were recruited through the use of advertisements placed throughout the city of Thunder Bay, and were asked if they perceived themselves as 'well-healthy' individuals (see Appendix A). All participants lived independently in the community of Thunder Bay. The study was designed to sample three age groups equally over the three years of the study. Table 2 illustrates the participant characteristics. Three age groups were investigated; 65 to 74 (youngest group), 75 to 84 (middle group), and 85 plus (oldest group).

**Table 2**
Participant characteristics

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | 93 | 94 | 95 | 93 | 94 | 95 | 93 | 94 | 95 |
| **Female** | 7 | | | 6 | | 4 | 3 | 2 | 1 |
| **Male** | 4 | | | 4 | | 4 | 8 | 4 | 2 |
| **Mean Age** | 71.1 | | | 78.7 | | 81.7 | 89 | 92 | 94 |
| **Number Surveyed Each year** | **11** | **11** | **11** | **10** | **10** | **8** | **11** | **6** | **3** |

Commencing in 1993, data were collected on 32 participants; twenty seven of the 32 healthy seniors participated in the second year of the study, and twenty-two participants completed the final panel. Attrition was due to participants leaving

the Thunder Bay area, moving into a nursing home, or dying. There was an attempt to recruit additional subjects to maintain equal group sizes, however, it was unsuccessful.

All participants had the approval of their family physician, who was contacted for further information when necessary (see Appendix B). Participants also signed a written consent form to acknowledge their understanding of the study and the intent of the researcher (see Appendix C). The study was approved by the Lakehead University Research and Ethics Committee prior to commencement (see Appendix D).

## Procedure and Design

A questionnaire was used to collect data for the study (see Appendix E). In the first year of study, participants were interviewed at a place of their choosing by one of a team of four researchers. The interviewers completed two sessions of training and followed the guidelines for interviewing seniors prepared by Ramsay (1990), in order to ensure consistency in the procedure (see Appendix F). For example, interviewers learned the steps in effective probing and developing rapport with the elderly participant. Care was taken so that interviewers did not lead the responses or interject their own biases when recording the replies. In the last two years of the study, all interviews were completed by the researcher.

## Measures

The questionnaire was developed from the CSWB (1988); the Ontario Health Survey (1981); and the F.I.T. principle for Participaction. These questions were designed to obtain data on physical activity patterns, factors contributing to health and well-being, and lifestyle habits of participants. Respondents answered

questions by using either a 5-point Likert Scale ranging from; strongly agree = 5, to strongly disagree = 1, or categories of no = 1, and yes = 2..

Physical Activity Patterns

Participants were asked to report on physical activity participation throughout their lives. For example, physical activities done throughout the year, cessation patterns, amount of activity compared to peers, participation in vigorous physical activity, and setting goals through vigorous physical activity were documented.

Factors Contributing to Health and Well-being.

Participants were asked to rank the importance of specific health related factors such as; rest, diet, stress, and regular physical activity. In addition, participants indicated if they experienced trouble performing daily tasks due to acute and chronic conditions.

Lifestyle

Participants were asked to report what they do in a typical week such as; television viewing; reading; visiting with friends and family; volunteering; and crafts. In addition, the importance of goal setting when considering; relaxing; having fun; independence; physical health; fitness; and winning was ranked.

Data Analysis

Frequencies and descriptives were conducted on all categorical data. A 3 (age) x 3 (time) mixed factorial analysis of variance (ANOVA) was planned to determine if any significant main effects existed on dependent variables for age and

time, and if any significant interaction effect existed. This was changed to a 2 x 3 ANOVA in all cases where the attrition of participants in the oldest group might account for main effects. Post-hoc analyses were computed on any significant main effects or interactions to determine which pair wise comparisons reached significance at the $p<.05$ level.

## Results

The main purpose of this study was to examine three factors contributing to wellness: physical activity patterns, factors contributing to health and well-being and lifestyle. The sequential study was completed by 32 different participants in the first year. Twenty-seven of these seniors took part in the second year, and 22 completed the third interview in 1995. Participants were assigned to one of three age groups, youngest group (65 to 74), middle (75 to 84), and oldest (85 and older).

The researcher was interested in determining the pattern of responses which existed for each of the three factors investigated in the study. Each activity was assessed for participation rate, duration, and frequency. The results will be reported in the following way: Frequencies and corresponding percentages computed for group responses to questions defining physical activity patterns, factors contributing to health and well-being, and lifestyle will be reported first. Group comparisons conducted on mean responses to selected questions will be reported next.

### Physical Activity Patterns

Participation rates for each age group over the three years were studied. This question was asked to determine: the physical activity patterns for each subject in a typical week throughout the year; and perceptions of past and present physical activity levels compared to peers, ability to participate in vigorous physical activity and to use it in goal setting. Where statistical significance was reported for time or interaction effects, a post-hoc analysis using a Scheffe test was used.

Physical Activity Participation

Walking for exercise was the most popular activity for each age group over the three year period. Activities such as cycling, cross-country skiing, tennis, swimming, and dancing were reported less often and with a decreased frequency for each age group over the three years (see Table 3).

**Table 3**
Physical activity patterns (percentage who did participate)

| ***Group*** | ***Youngest*** | | | ***Middle*** | | | ***Oldest*** | | |
|---|---|---|---|---|---|---|---|---|---|
| **Activity** | | | | | | | | | |
| **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** | **93** | **'94'** | **95** |
| walking | 72 | 81 | 81 | 80 | 80 | 70 | 81 | 54 | 18 |
| gardening/ yard | 81 | 45 | 54 | 80 | 60 | 70 | 54 | 18 | 18 |
| cycling | 72 | 72 | 45 | 30 | 30 | 10 | | 9 | |
| cross-country skiing | 45 | 36 | 45 | 20 | 10 | 10 | | 9 | |
| tennis | 36 | 27 | 18 | | | | | | |
| swimming | 54 | 27 | 9 | 20 | 30 | 30 | | | |

Specifically, the youngest and middle age groups reported that involvement in walking was generally consistent over the three years. Consistency in participation was also seen in cross-country skiing for the youngest age group, and gardening for the middle age group. Participants in the oldest group reported a high participation in walking and gardening in the first year, but as the number in the group decreased, so did the active participation. Cross country skiing was popular in the youngest group but less so in the middle and oldest, whereas participating in tennis occurred only in the youngest age group.

Figures 3, 4, 5, and 6 indicate the percentage of those participants who walked, gardened, cross-country skied, and played tennis for physical activity. The figures illustrate the percentage value of the highest and lowest frequencies for

these four activities as the participants aged. A pattern among the three age groups indicated that the frequency of participation decreased, and some activities were less popular or not chosen at all in older age groups.

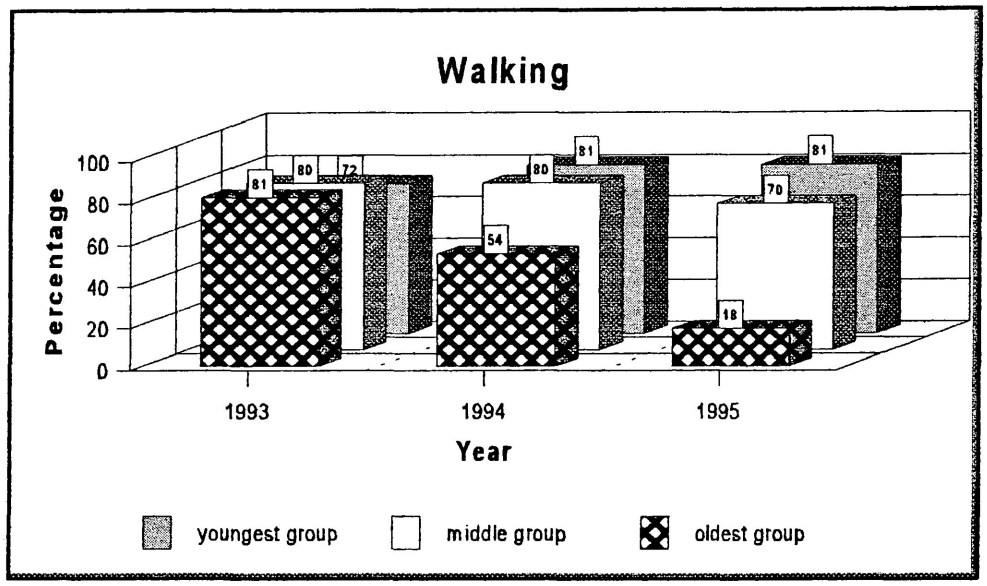


**Figure 3.** Percentage of participants who pursued walking for physical activity

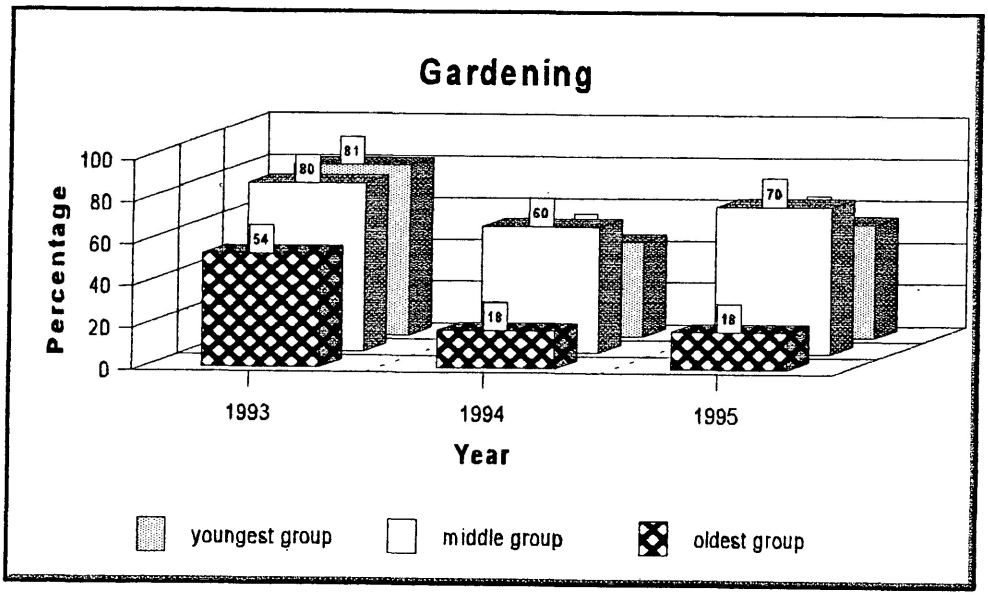


**Figure 4.** Percentage of participants who pursued gardening for physical activity

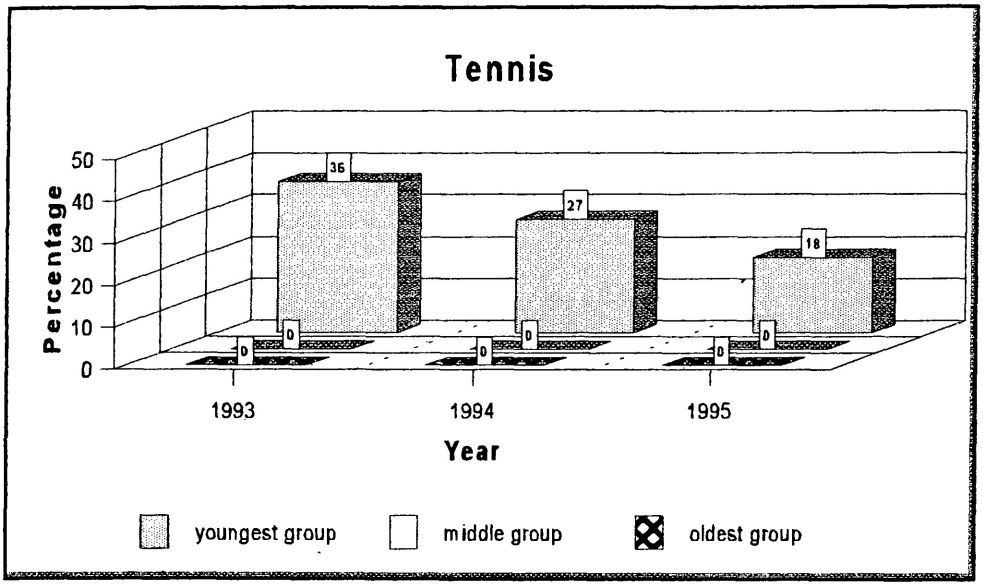


**Figure 5.** Percentage of participants who pursued tennis for physical activity

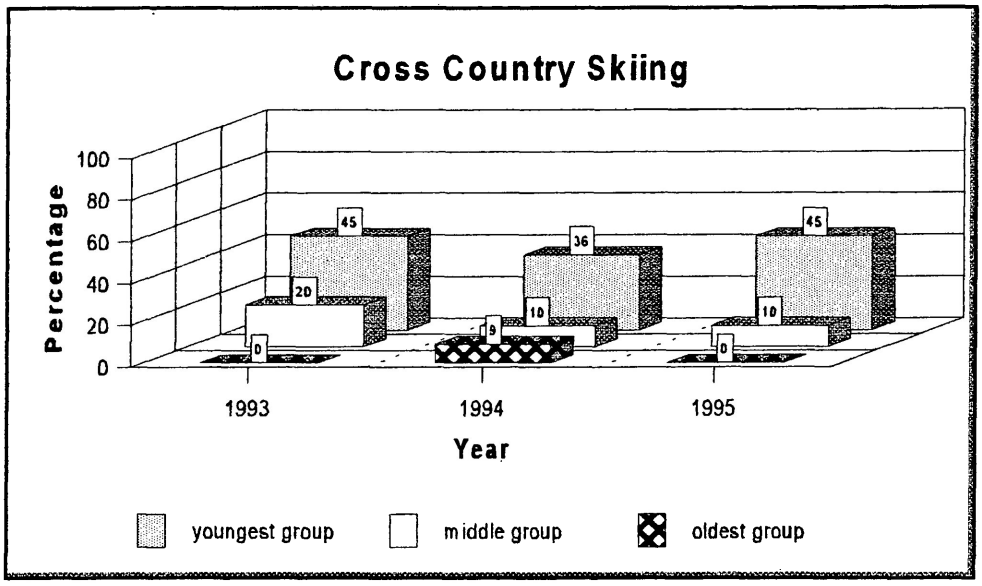


**Figure 6**. Percentage of participants who pursued cross country skiing for physical activity

Each age group reported an increase in the percentage of people who stopped participating in physical activity for some reason between 1993 and 1995 These values increased from 15% to 32% for the youngest age group, 24% to 36% for the middle age group, and 49% to 60% for the oldest group over the three years of the study.

Participants were asked to indicate the amount of time spent doing specific physical activities. The percentage of participants who stopped physical activity for some reason was previously noted. However, contrary to these results each group increased the actual time spent in each session of walking throughout the year.

**Table 4**
The mean number of hours (per session / total year) participants spent walking over the three years

| *Group* | *Youngest* | | | *Middle* | | | *Oldest* | | |
|---|---|---|---|---|---|---|---|---|---|
| **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** | **93** | **'94'** | **'95** |
| Hours(per session) | .33 | .49 | .49 | .34 | .40 | .52 | .31 | .50 | .50 |
| Total hours/Year | 141 | 185 | 240 | 129 | 182 | 262 | 178 | 265 | 300 |

Participants were asked to compare their level of physical activity to that of their peers during adolescence in order to determine history and intensity of participation (see Table 5). Each age group indicated a high level of physical activity. Those in the oldest group who continued the study for the second and third year perceived that their level of activity far exceeded that of their peers.

**Table 5**

Participants' physical activity compared to their peers at age 15 (percentages)

| *Group* | *Youngest* | | | *Middle* | | | *Oldest* | | |
|---|---|---|---|---|---|---|---|---|---|
| **Response** | | | | | | | | | |
| **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** | **93** | **'94'** | **'95** |
| Much More Active | 64 | 62 | 73 | 60 | 50 | 75 | 55 | 100 | 100 |
| More Active | 27 | 36 | 27 | 20 | 38 | 25 | 27 | | |
| Same | 19 | | | 10 | 12 | | 18 | | |
| Less Active | | | | 10 | | | | | |
| Much Less Active | | | | | | | | | |

A 3 (age) x 3 (time) mixed factorial ANOVA was used to compare the mean responses by age groups over the three years of the study. There was no main effect for age, $F(2, 19)=.74$, $p>.05$; no main effect for time, $F(2,38)=1.63$, $p>.05$. and no significant interaction $F(4,38)=.24$, $p>.05$. The responses from all age groups indicated that the participants perceived themselves as historically more active than their peers.

Participants were then asked to rate their current physical activity level to that of their friends. All three age groups perceived their current physical activity level as 'more active' than that of their peers (see Table 6).

**Table 6**

Percentage of participants compared to their peers' level of current physical activity

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| **Response** | | | | | | | | | |
| **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** | **93** | **'94'** | **95** |
| Much More Active | 46 | 54 | 54 | 50 | 38 | 25 | 54 | 34 | 66 |
| More Active | 36 | 19 | 37 | 20 | 37 | 25 | 28 | 66 | 34 |
| Same | 18 | 27 | 9 | 10 | 25 | 50 | 9 | | |
| Less Active | | | | 10 | | | 9 | | |
| Much Less Active | | | | 10 | | | | | |

Although there appears to be a decrease in the response of the middle group in 1994 and 1995, and in the oldest group in 1994, comparison of group means indicated no main effect for age, $F(2,19)=1.35$, $p>.05$; no main effect for time, $F(2,38)=.54, p>.05$; and no interaction, $F(4,38)=.88$, $p>.05$ (see Figure 7). In general, this perception of a high level of physical activity is constant. Participants were more active at age 15 and continue to be more active even at 85 years of age.

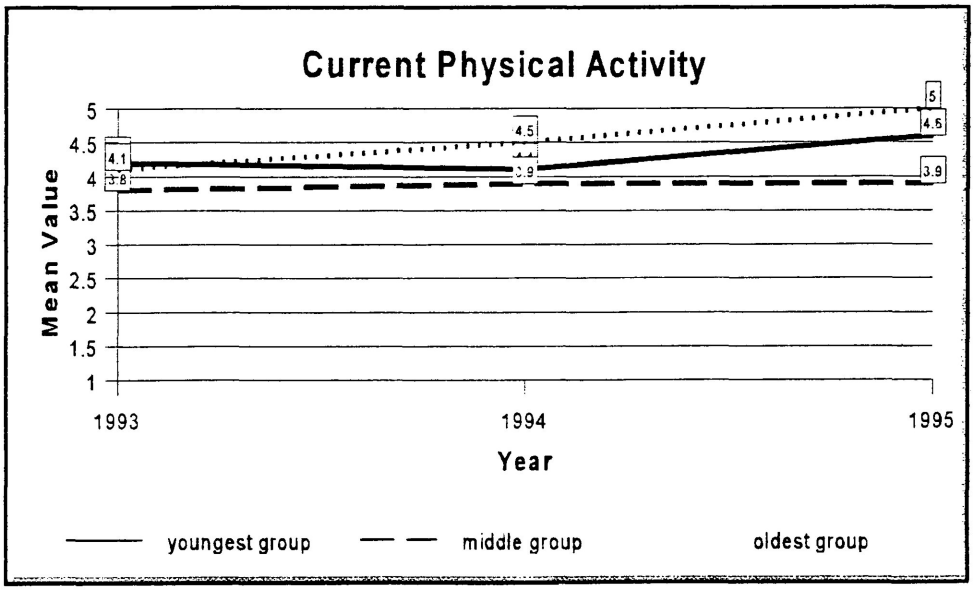


**Figure 7.** Patterns of current physical activity levels compared to peers

Vigorous Physical Activity

Participation in vigorous physical activity has traditionally been defined as exercising a minimum of 3 times per week for at least 20 minutes per session. Participants were asked to report if they could participate in vigorous physical activity, based on the guidelines defining 'vigorous physical activity'. The responses for participants in groups 1 and 2 indicate a relatively strong belief in their ability to do physical activity (see Table 7). Due to the attrition of the oldest group participants, this group was not considered in the analysis.

**Table 7**

Percentage of participants who could participate in vigorous physical activity

| **Group:** | **Youngest** | | | **Middle** | | |
|---|---|---|---|---|---|---|
| **Response** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** |
| Strongly Agree | 55 | 81.8 | 72.7 | 40 | 50 | 50 |
| Agree | 18 | 18.2 | 27.3 | 20 | 50 | 12.5 |
| Neutral | 18 | | | 30 | | |
| Disagree | 9 | | | | | |
| Strongly Disagree | | | | 10 | | 37.5 |

Comparisons of group means revealed a significant main effect for age, $F(1,17)=5.20$, $p<.05$; and a main effect for time, $F(2,34)=2.34$, $p<.05$; and no interaction $F(2,34)=1.36$, $p>.05$. Respondents in both groups felt they could participate, although the younger group felt more strongly about vigorous physical activity. Respondents also felt significantly more able to participate in vigorous physical activity $F'(2,34)=3.28, p<.05$.

Participants were asked how many times per week they felt they could participate in vigorous activity in the upcoming year. The percentage of each group

who indicated willingness to participate in vigorous physical activity in the upcoming year is noted in Table 8. These data suggest a similar trend to the results reported in Table 7.

**Table 8**
Number of times per week respondents want to participate in vigorous activity in the upcoming year

| Group | Youngest | | | Middle | | |
|---|---|---|---|---|---|---|
| **Times** **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** |
| 6< | 18 | 37 | 9 | | 25 | |
| 4-5 | 36 | 27 | 64 | 10 | 50 | 50 |
| 3 | 9 | 36 | 27 | 10 | 25 | 13 |
| 1-2 | 18 | | | 60 | | |
| 1> | 9 | | | | | |
| never | 10 | | | 20 | | 37 |

Comparison of group means indicated no main effect for age , $F(1,17)=4.37$, $p>.05$; a main effect for time, $F(2,34)=6.84$, $p<.05$; but no time by age interaction, $F(2,34)=2.51$, $p>.05$. Post hoc analysis indicated that respondents in the study felt more often that they would want to participate in vigorous physical activity in the up coming year as the study progressed, and this was most evident in the second year $F'(2,34)=5.29, p<.01$.

## Goal Setting and Vigorous Physical Activity

The youngest and middle age groups were asked to report if they believed participation in vigorous physical activity would help them to reach specific goals in their lives. Participants indicated to what extent vigorous physical activity would

help them feel better mentally, physically, improve their flexibility and offer social opportunities (see Table 9).

**Table 9**
Percentage of participants who believe vigorous physical activity would help them to reach their goals

| Group | Youngest | | | Middle | | |
|---|---|---|---|---|---|---|
| **Goals** Year | '93 | '94 | '95 | '93 | '94 | '95 |
| **Feel Better Mentally** | | | | | | |
| great deal | 55 | 73 | 100 | 40 | 50 | 63 |
| often | 36 | 27 | | 40 | 50 | |
| neutral | | | | 10 | | |
| some | | | | 10 | | |
| not at all | | | | | | 37 |
| **Feel Better Physically** | | | | | | |
| great deal | 55 | 81 | 100 | 40 | 50 | 50 |
| often | 36 | 19 | | 30 | 50 | 13 |
| neutral | | | | 10 | | 37 |
| some | | | | 20 | | |
| not at all | | | | | | |
| **Flexibility** | | | | | | |
| great deal | 36 | 46 | 73 | 10 | 38 | 38 |
| often | 54 | 54 | 27 | 10 | 50 | 25 |
| neutral | 10 | | | 20 | 12 | |
| some | | | 60 | | | |
| not at all | | | | | | 37 |
| **Socializing** | | | | | | |
| great deal | 28 | 55 | 82 | 20 | 25 | 50 |
| often | 63 | 45 | 18 | 30 | 38 | 13 |
| neutral | 9 | | | 40 | 37 | |
| some | | | | 10 | | |
| not at all | | | | | | 37 |

The results reflect a similar pattern to that illustrated for both age groups in the previous questions regarding the participants' perception about vigorous physical activity. Comparisons of group means on the variables indicated in Table 9 concerning attaining better mental health via vigorous physical activity revealed

no main effect for age, F (1,17)=3.14, p>.05, and no main effect for time, F (2,34)=.64, p>.05. The age by time interaction was significant F(2,34)=3.82, p<.05, however post-hoc Scheffe tests failed to reveal any significant pairwise differences (p=.05).

Attaining better physical health via vigorous physical activity revealed a main effect for age, F (1,17)=6.65, p<.05; no main effect for an across years comparison, F (2,34)=1.07, p>.05; and no interaction, F(2,34)=3.02, p>.05. Although both respondents in the younger and middle age groups believed that better physical health could be attained via vigorous physical activity, the younger respondents felt more strongly.

Attaining better flexibility via vigorous physical activity revealed no main effect for age, F (1,17)=3.72, p>05; no main effect for an across years comparison, F (2,34)=1.13, p>05; and an interaction effect, F(2,34)=4.55, p<.05. Post-hoc analysis using a Scheffe test indicated that participants in the youngest group gained flexibility via vigorous physical activity while the middle group felt less strongly. These beliefs are significantly different in the 3rd year F'(2,34)=3.28,p<.05.

Attaining better socialization via vigorous physical activity revealed a main effect for age, F (1,17)=11.46, p<.05; no main effect for an across years comparison, F (2,34)=.85, p>.05; and no interaction, F(2,34)=.76, p>.05. The youngest participants believed more strongly than the middle group in the benefits of vigorous physical activity for socialization.

In general, the majority of the youngest and middle group participants agreed that they would participate in vigorous physical activity in the future, and it would assist them in reaching specific goals.

Figure 8, 9 and 10 illustrate how goal setting is linked to vigorous physical activity. For the youngest and middle age groups there is evidence for a stable

pattern of or belief in vigorous physical activity to attain goals over time. Vigorous physical activity and the connection to goal setting could not be analyzed for the oldest group because of the small sample size.

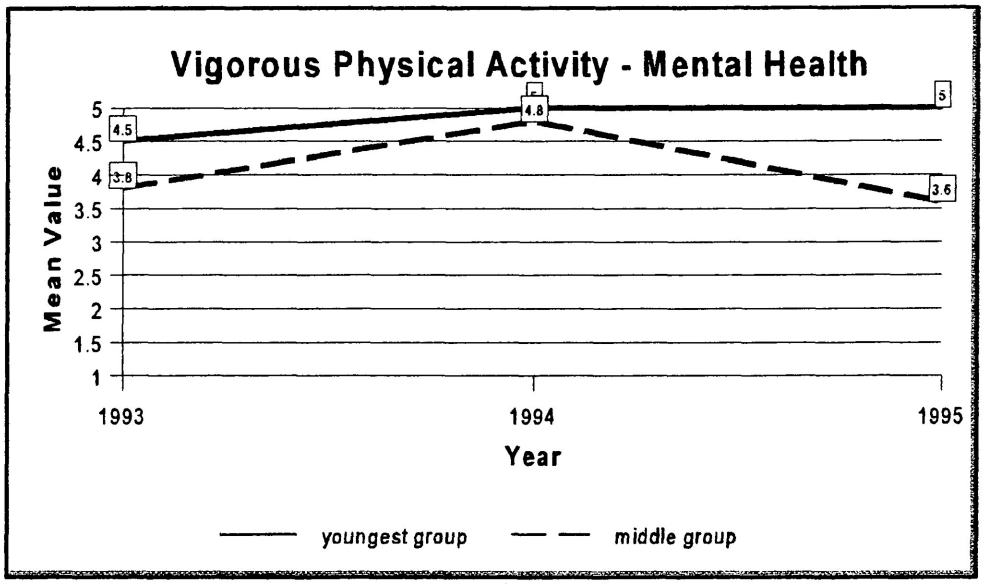


**Figure 8.** Contribution of vigorous physical activity to achieve mental health goal

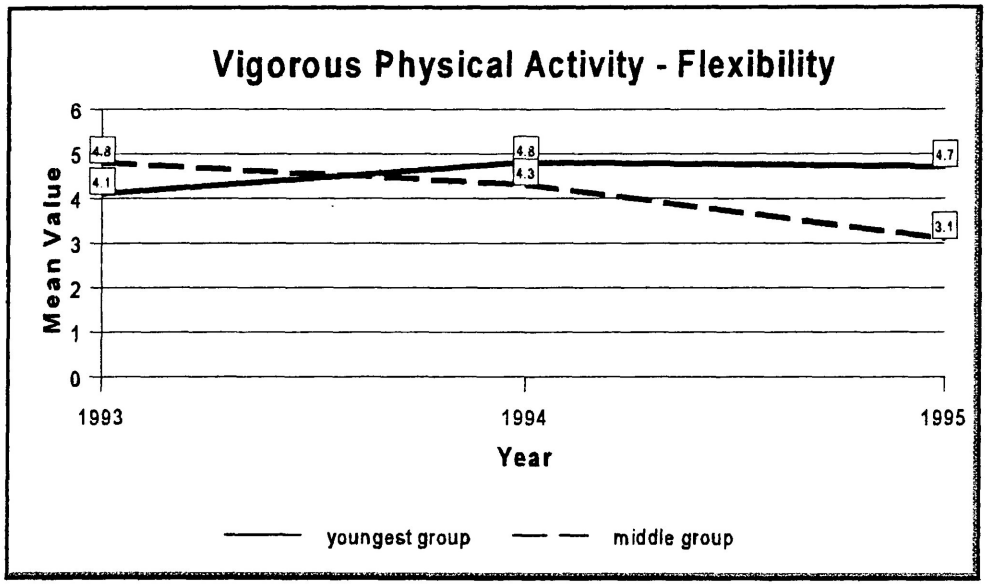


**Figure 9.** Contribution of vigorous physical activity to achieve flexibility goals

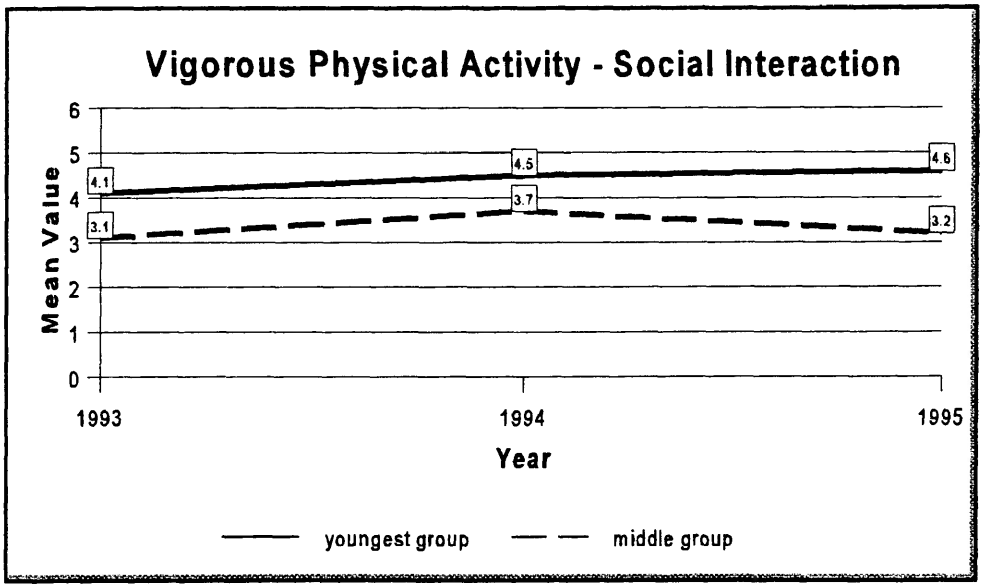


**Figure 10.** Contribution of vigorous physical activity to achieve socialization goals

## Factors Contributing to Health and Well-being

Participants were asked to rank the importance of specific health related factors in their daily lives.

### Health Related Factors

Participants in the youngest and middle groups ranked regular rest, appropriate diet, and regular physical activity as the key factors in promoting a healthy body (see Table 10).

**Table 10**

Percentage of participants who feel health related factors were important to them

| Group | Youngest | | | Middle | | |
|---|---|---|---|---|---|---|
| **Responses** | | | | | | |
| **Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** |
| **Rest** | | | | | | |
| strongly agree | 55 | 82 | 91 | 70 | 38 | 100 |
| agree | 45 | 18 | 9 | 30 | 62 | |
| neutral | | | | | | |
| disagree | | | | | | |
| strongly disagree | | | | | | |
| **Diet** | | | | | | |
| strongly agree | 64 | 50 | 91 | 60 | 50 | 100 |
| agree | 27 | 45 | 9 | 40 | 38 | |
| neutral | 9 | 9 | | | 12 | |
| disagree | | | | | | |
| strongly disagree | | | | | | |
| **Regular Physical Activity** | | | | | | |
| strongly agree | 73 | 72 | 100 | 40 | 75 | 100 |
| agree | 27 | 28 | | 40 | 25 | |
| neutral | | | | 20 | | |
| disagree | | | | | | |
| strongly disagree | | | | | | |

Comparison of group means for rest as a factor of health and well-being revealed no main effect for age, $F$ (1,17)=.10, $p$>.05; a significant main effect for time, $F$ (2,34)=3.57, $p$<.05; and an interaction, $F$(2,34)=3.57, $p$<.05. Post-hoc analyses using a Scheffe test failed to reveal any significant pairwise differences (p=.052). Although there was a trend towards an increased belief in rest as a factor of health in each year.

A balanced diet as a factor of health and well-being revealed no main effect for age, $F$ (1,17)=.12, $p$>.05; a significant main effect for time, $F$ (2,34)=6.32, $p$<.05; and no interaction, $F$(2,34)=.03, $p$>.05. Both age groups indicated diet as an important factor for their health. Post-hoc analysis using a Scheffe test indicated a significant increase in the belief in diet as a health factor between 1994 and 1995 F'(2,34)=5.29,$p$<.01.

Regular physical activity as a factor of health and well-being revealed no main effect for age, $F$ (1,17)=1.94, $p$>.05; a significant main effect for time, $F$ (2,34)=6.34, $p$<.05; and no interaction, $F$(2,34)=2.41, $p$>.05. Generally, both age groups indicated that regular physical activity was an important health factor. Post-hoc analysis indicated that the respondents tended to believe more strongly in regular physical activity as a factor of health in 1995 than in 1993 F'(2,34)=5.29, $p$<.01.

Participants across the study overwhelmingly shared the same sentiment for variables pertaining to 'healthy approaches' in the questionnaire. Figures 11, 12, and 13 illustrate the mean responses to these health practices.

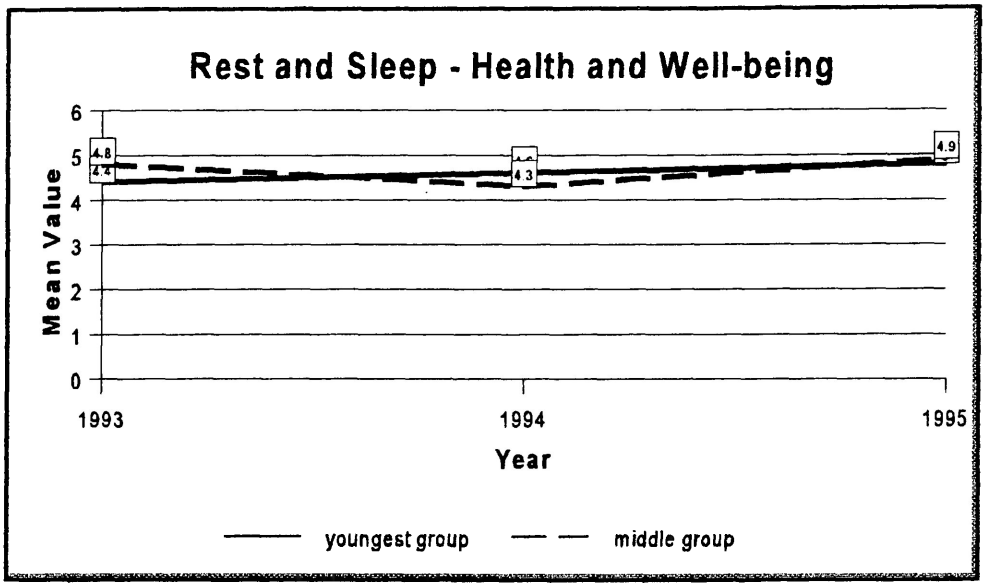


**Figure 11.** Adequate rest and sleep is important for health and well-being

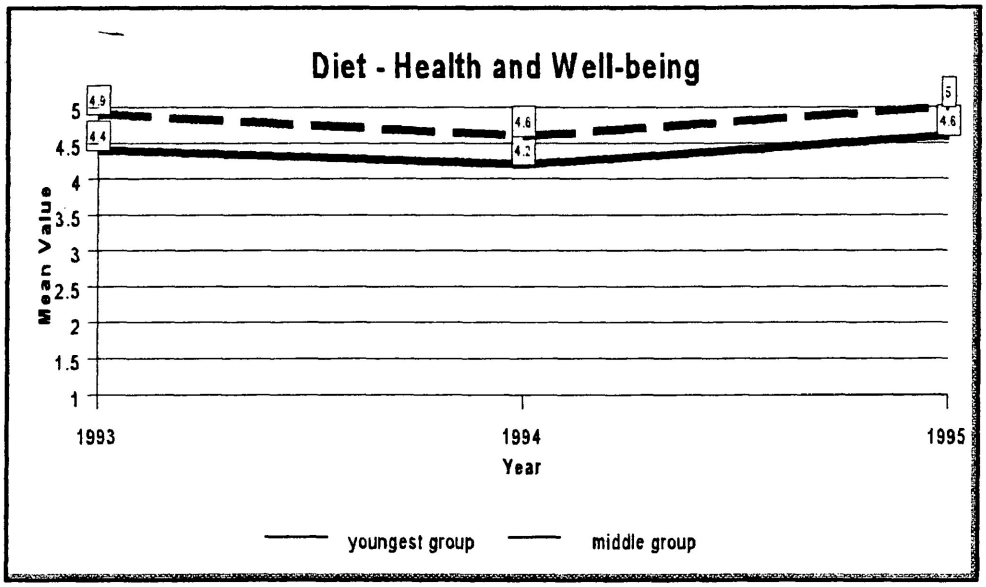


**Figure 12.** An adequate diet is important for health and well-being

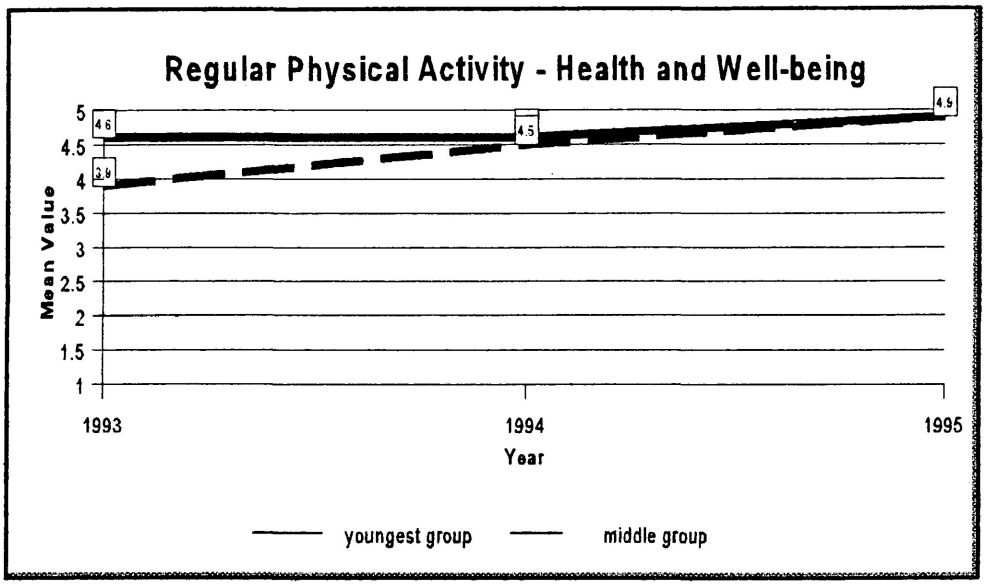


**Figure 13.** Adequate physical activity is important for health and well-being

Acute Conditions

Participants were asked to indicate if they have any difficulty performing specific tasks that were required in daily living. These 'daily tasks' are commonly referred to as instrumental activities of daily living (IADL) (see Table 11). Another aspect of acute barriers are those that limit a persons' ability to carry out 'self care' activities, which are commonly referred to as activities of daily living (ADL) (see Table 12).

Participants in the study were not without acute conditions which caused them to use aids for normal functioning (i.e.: glasses) in their general daily regime. Standing for long periods of time was considered to present the greatest challenge. Following that was hearing during a normal conversation and seeing (6 metres) newsprint. Table 11 indicates the breakdown of the acute conditions for all participants. The percentages indicate those participants who experienced trouble with the following IADL's.

**Table 11**

Percentage of participants who experienced trouble with the following IADL's

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| Activity / Year | '93 | '94 | '95 | '93 | '94 | '95 | 93 | '94' | 95 |
| Standing | 45 | 27 | 10 | 30 | 38 | 50 | 63 | 33 | 66 |
| Hearing | 18 | 37 | 27 | 30 | 50 | 12 | 64 | 84 | 67 |
| Bending | 27 | 18 | 18 | 30 | 13 | 50 | 27 | | 33 |
| Seeing | | 10 | 9 | 20 | 13 | | 55 | 16 | 33 |
| Walking | | | | 20 | | 25 | 63 | 33 | |
| Moving | | | | | 12 | 13 | 18 | | |

Generally, activities such as standing, bending, and hearing were IADL's that participants in the youngest group experienced trouble with. Participants in the middle and oldest groups had increasing difficulty with movement activities such as standing and bending. In addition, the oldest group reported trouble concerning hearing, seeing, and walking.

Participants were asked to indicate if there was an acute condition which would hinder their ability to carry out and perform specific ADL's throughout a normal day (see Table 12).

**Table 12**

Percentage of participants who experienced trouble with the following ADL's

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| Activity / Year | '93 | '94 | '95 | '93 | '94 | '95 | 93 | '94' | 95 |
| Dressing | | | | | 12 | | 9 | | 33 |
| Reaching | | | | | 13 | | | | 33 |
| Cutting Toe Nails | | | | | 12 | | 18 | | |
| Out of Bed | | | | | 12 | | | | 33 |
| Cutting Food | | | | | 13 | | 9 | | |
| Using Fingers | | | | | 12 | | | | |

Generally, the youngest group did not report any difficulty with ADLs'. over the three years. The oldest group indicated that dressing / undressing, reaching for various objects (from a cupboard) and general hygiene activities presented the greatest difficulty.

Chronic Conditions

Participants were asked to report any chronic health problems that they were aware of based on their medical history. Specific chronic conditions were recorded over the three year period, for each of the age groups.

Common chronic conditions suffered by participants in the three groups were arthritis and high blood pressure respectively. The percentages listed in Table 13 note the participants who indicated they do suffer from the following chronic health problems.

**Table 13**
Percentage of participants who suffer from chronic conditions

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| Condition / Year | '93 | '94 | '95 | '93 | '94 | '95 | 93 | '94' | 95 |
| Arthritis | 45 | 54 | 63 | 70 | 37 | 62 | 54 | 33 | |
| High Blood Pressure | 36 | 45 | 45 | 50 | 50 | 25 | 27 | 16 | |
| Heart Disease | 18 | 18 | 20 | 30 | 37 | 38 | 18 | 16 | 66 |
| Dizziness | 18 | 19 | 19 | | | | 36 | 33 | 33 |
| Ulcer | 9 | | | 10 | | | 9 | | |
| Urinary Problem | 27 | | | 10 | | | 9 | | |
| Cancer | 9 | | | | | | 18 | 16 | 33 |

Generally, arthritis, high blood pressure, and heart disease were the most frequently occurring chronic conditions over the three year study. Specifically, heart disease was reported to have increased for all three groups over time. Urinary problems and ulcers were reported as the least frequently occurring chronic conditions.

## Lifestyle

The lifestyle section comprised two separate questions. Participants were asked to report what they do in a typical week and the frequency with which they do it; and secondly, how important it is for them to reach specific goals also within a typical week.

### Weekly Activities

Generally, watching TV, reading, visiting friends and family were the most popular events. Other events such as volunteering and hobby / craft time were reported at a lower frequency (see Table 14). The results indicate that watching TV, reading and visiting with friends were the most frequent activities for at least 5-9 hours or more a week. From 36 to 54% spent more than 9 hours per week engaged in these activities.

**Table 14**

The number of hours per week a percentage of the participants spent doing various activities in a typical week

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| **Activity Year** | **'93** | **'94** | **'95** | **'93** | **'94** | **'95** | **93** | **'94'** | **95** |
| **Watching TV.** | | | | | | | | | |
| 14< | 9.1 | 36.4 | 81.8 | 50 | 62.5 | | 18.2 | 66.7 | |
| 10-14 | 27.3 | 36.4 | | 50 | 37.5 | 75 | 27.3 | | |
| 5-9 | 9.1 | | | | | 12.5 | 27.3 | 33.3 | 33.3 |
| 3-4 | 27.3 | 9.1 | | | | | 18.2 | 66.7 | |
| 1-2 | 9.1 | 18.2 | | | | 12.5 | 9.1 | | |
| zero | 18.2 | | 18.2 | | | | | | |
| **Reading** | | | | | | | | | |
| 14< | 9.1 | 45.5 | 9.1 | 30 | 12.5 | | 27.3 | 16.7 | |
| 10-14 | 36.4 | 27.3 | 36.4 | 10 | 12.5 | 12.5 | 9.1 | | 66.7 |
| 5-9 | 9.1 | 18.2 | 45.5 | 20 | 37.5 | 50 | 27.3 | 16.7 | 33.3 |
| 3-4 | 27.3 | 9.1 | 9.1 | 10 | 25 | 37.5 | 18.2 | | |
| 1-2 | 18.2 | | | 30 | | | 18.2 | 33.3 | |
| zero | | | | | 12.5 | | | 33.3 | |
| **Visiting Family** | | | | | | | | | |
| 14< | | | | 20 | | | 9.1 | | |
| 10-14 | 18.2 | | 9.1 | | | | 27.3 | | |
| 5-9 | | 9.1 | | 20 | 25 | 12.5 | 27.3 | 16.7 | |
| 3-4 | | 36.4 | 54.5 | 10 | 12.5 | 25 | 9.1 | 50 | 66.7 |
| 1-2 | 45.5 | 54.5 | 36.4 | | 25 | 62.5 | 27.3 | 33.3 | 33.3 |
| zero | 36.4 | | | 50 | 37.5 | | | | |
| **Visiting Friends** | | | | | | | | | |
| 14< | | | | 30 | | | 18.2 | | |
| 10-14 | 27.3 | 9.1 | | 10 | 25 | | 18.2 | | |
| 5-9 | 9.1 | 27.3 | 45.5 | 10 | 12.5 | 50 | 18.2 | 33.3 | 33.3 |
| 3-4 | 45.5 | 63.6 | 54.5 | 10 | 25 | 25 | 36.4 | | 66.7 |
| 1-2 | 18.2 | | | 10 | 37.5 | 25 | 9.1 | 66.7 | |
| zero | | | | 30 | | | | | |

Comparison of the mean number of hours per week spent watching television by the youngest and middle age groups revealed no significant main effect for age, $F$ (1,17)=2.88, $p$>.05; no main effect for time, $F$ (2,34)=2.34, $p$>.05; and an interaction, $F$(2,34)=5.76, $p$<.01. The middle group watched more television while the youngest group watched significantly less television in the first year than the middle group did in all 3 years $F$ (2,34)=3.28, $p$<.05.

For reading, a comparison of means revealed no significant main effect for age, $F$ (1,17)=.07, $p$>.05; no significant main effect for time, $F$ (2,34)=3.25, $p$>.05; and no interaction, $F$(2,34)=.05, $p$>.05. Time spent reading for both age groups over the three years remained consistent.

A comparison of means for time spent visiting with family revealed no significant main effect for age, $F$ (2,19)=.15, $p$>.05; no significant main effect for time, $F$ (2,38)=.51, $p$>.05; and no interaction, $F$(4,38)=.26, $p$>.05. Time spent visiting with family for the three age groups over the three years remained consistent over the three years.

A comparison of means for time spent visiting with friends revealed no significant main effect for age, $F$ (2,19)=.46, $p$>.05; no significant main effect for time, $F$ (2,38)=.19, $p$>.05; and no interaction, $F$(4,38)=.34, $p$<.05. Time spent visiting friends for the three age groups over the three years remained consistent over the three years.( see Appendix F).

These results suggest that television and reading are popular activities for entertainment and access to information. Participants were not asked to report specific information about the type of programming and/or literature in which they were engaged.

Weekly Goals

Participants indicated the importance of reaching specific goals on a weekly basis. Generally, all three groups reported over three years that it was important to them to maintain independence, have fun, and maintain fitness.

The most common goal for the three groups was independence. It was also reported that winning competitions and relaxing were less important (see Table 15).

**Table 15**

Percentage of participants who felt strongly about reaching specific goals

| Group | Youngest | | | Middle | | | Oldest | | |
|---|---|---|---|---|---|---|---|---|---|
| **Importance** | | | | | | | | | |
| Year | '93 | '94 | '95 | '93 | '94 | '95 | 93 | '94' | 95 |
| **Having Fun** | | | | | | | | | |
| very important | 81.8 | 90.9 | 72.7 | 60 | 50 | 87.5 | 63.6 | 50 | 33.3 |
| important | 18.2 | 9.1 | 27.3 | 30 | 50 | 12.5 | 36.4 | 50 | 66.7 |
| neutral | | | | 10 | | | | | |
| some importance | | | | | | | | | |
| not important | | | | | | | | | |
| **Relaxing** | | | | | | | | | |
| very important | 36.4 | 45.5 | 18.2 | 30 | 62.5 | 12.5 | 45.5 | 83.3 | |
| important | 18.2 | 54.5 | 54.5 | 50 | 25 | 62.5 | 45.5 | 16.7 | |
| neutral | 27.3 | | 27.3 | 10 | 12.5 | 25 | 9.1 | | 100 |
| some importance | 18.2 | | | 10 | | | | | |
| not important | | | | | | | | | |
| **Independence** | | | | | | | | | |
| very important | 54.5 | 90.9 | 81.8 | 90 | 62.5 | 75 | 63.6 | 100 | 100 |
| important | 18.2 | 9.1 | 18.2 | 10 | 37.5 | 25 | 27.3 | | |
| neutral | 18.2 | | | | | | | | |
| some importance | 9.1 | | | | | | | | |
| not important | | | | | | | 9.1 | | |
| **Fitness** | | | | | | | | | |
| very important | 36.4 | 36.4 | 54.5 | 40 | 25 | 75 | 54.5 | 50 | 100 |
| important | 54.5 | 54.5 | 27.3 | 50 | 75 | 12.5 | 36.4 | 50 | |
| neutral | 9.1 | 9.1 | 18.2 | 10 | | 12.5 | 9.1 | | |
| some importance | | | | | | | | | |
| not important | | | | | | | | | |
| **Winning** | | | | | | | | | |
| very important | | | 9.1 | 10 | | 25 | 9.1 | 16.7 | |
| important | 27.3 | 36.4 | 18.2 | 20 | | | 9.1 | | |
| neutral | | | 18.2 | 30 | 12.5 | | 9.1 | | 66.7 |
| some importance | | 18.2 | 18.2 | | 12.5 | 50 | | 16.7 | 33.3 |
| not important | 72.7 | 45.5 | 36.4 | 40 | 75 | 25 | 73.7 | 66.7 | |

Comparison of group means for having fun in their spare time revealed no significant main effect for age, $F$ (2,19)=2.12, $p$>.05; no significant main effect for time, $F$ (2,38)=.97, $p$>05; and no interaction, $F$(4,38)=.82, $p$>.05. Having fun in the participants' spare time for the three age groups remained consistent over the three years (see Figure 14)

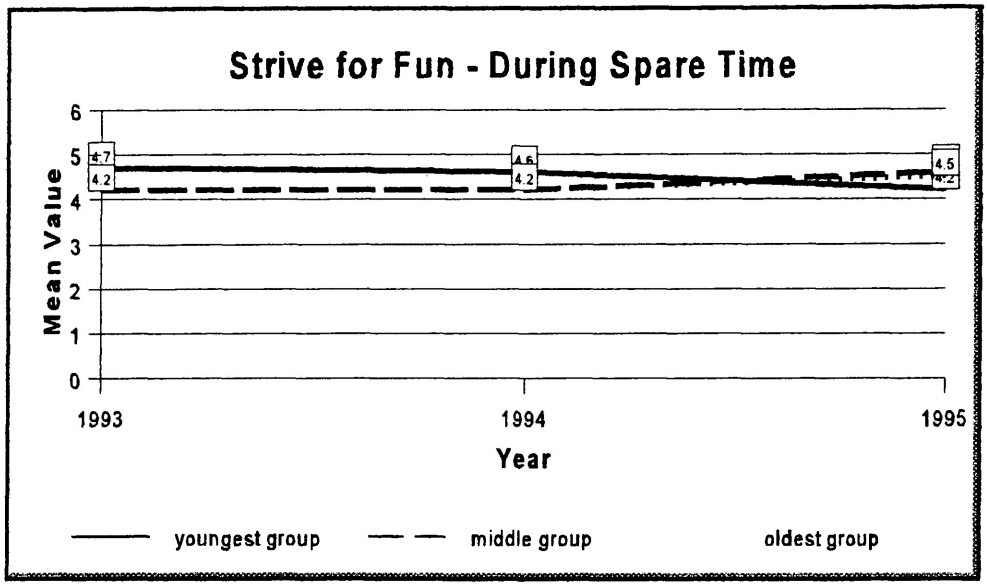


**Figure 14.** Importance of having fun as a goal during the participants spare time

The importance of relaxing in the respondents' spare time revealed no significant main effect for age, $F$ (1,17)=.04, $p$>.05; a significant main effect for time, $F$ (2,34)=11.86, $p$<.05; and no interaction, $F$(2,34)=.02, $p$>.05. Respondents ranked relaxing during their spare time highly in the first and second year of the study, but believed much less strongly in relaxation as a goal in their spare time in the third year F'(2,34)=3.28,$p$<.05.

The importance of maintaining independence in the respondents' spare time revealed no significant main effect for age, $F$ (2,19)=1.66, $p$>.05; no significant main effect for time, $F$ (2,38)=.44, $p$>.05; and no interaction, $F$(2,38)=1.92, $p$>05. Maintaining independence in the participants' spare time for the three age groups remained a consistent goal over the three years (see Figure 15).

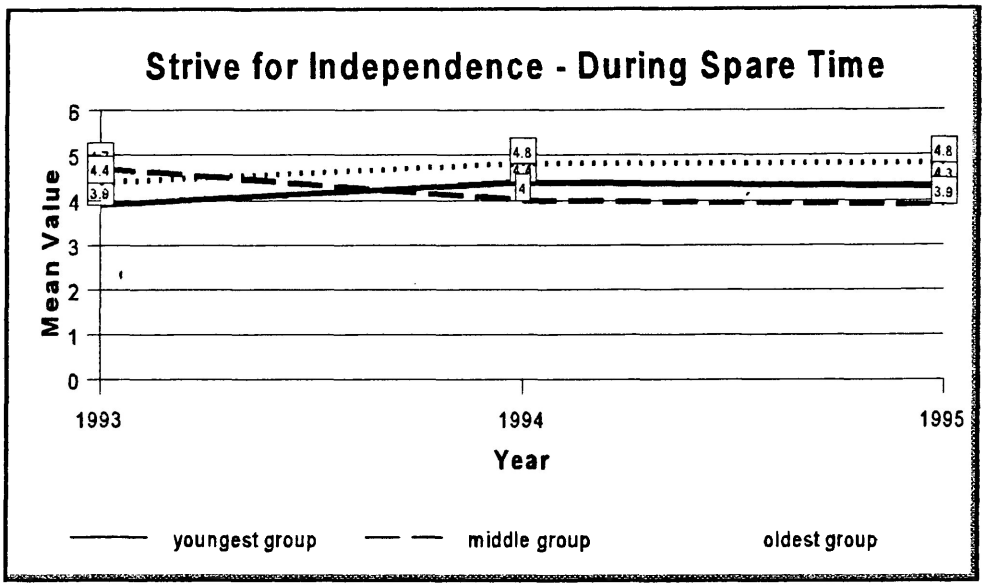


**Figure 15.** Importance of independence as a goal during the participants spare time

The importance of maintaining fitness in the respondents' spare time revealed no significant main effect for age, $F$ (2,19)=.75, $p$>.05; no significant main effect for time, $F$ (2,38)=1.73, $p$>.05; and no interaction, $F$(2,38)=.37, $p$>.05. Maintaining their fitness in the participants' spare time for the three age groups remained consistent over the three years.

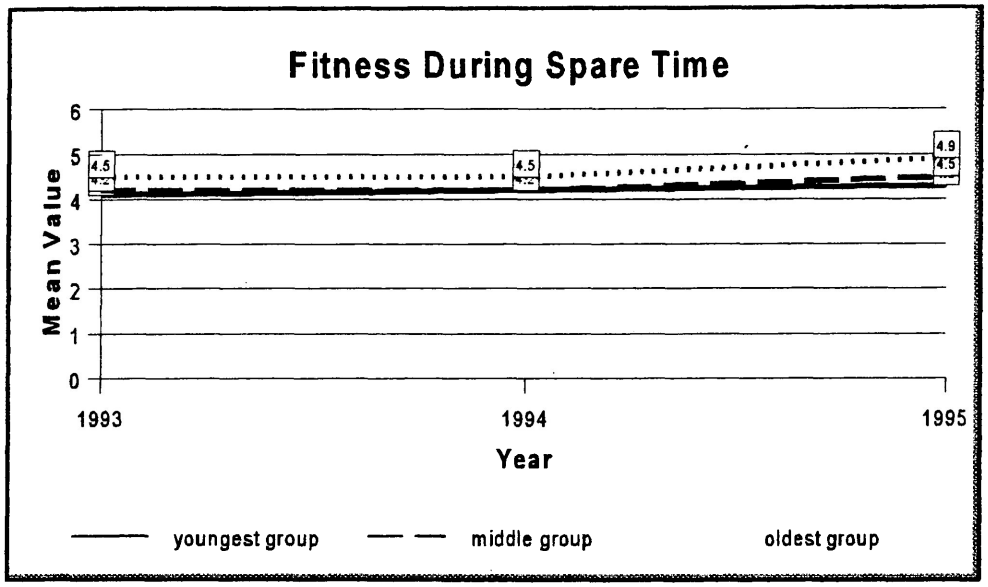


**Figure 16.** Importance of fitness as a goal during the participants spare time

The importance of competing to win in the respondents' spare time revealed no significant main effect for age, $F$ (2,19)=1.04, $p$>.05; no significant main effect for time, $F$ (2,38)=.60, $p$>05; and no interaction, $F$(2,38)=.99, $p$>.05. The goal of competition was not valued highly by any group over the three years.

The first part of the results section revealed that the participants' enjoyed activities that allowed them to be alone, or together with one or more persons. Maintaining independence is a key factor to living independently in the community, something which these participants desired. These results will be explored in the following discussion.

## Discussion

The purpose of this three year sequential study was to examine factors contributing to the wellness of self-professed healthy participants living in Thunder Bay based on their; patterns of physical activity; factors contributing to health and well-being; and lifestyle habits.

The study of aging was designed to investigate the factors that healthy people aged 65 and over perceived as contributors to their wellness. The results were compared among two and three different age cohorts, over a three year period.

Generally, the results suggest relative consistency in responses for positive health adaptations' for these participants. Considering the model of wellness proposed in the introduction and others discussed in the review of literature, these results indicate a perception of aging successfully for a group of individuals living in the Thunder Bay area.

Since aging is an individual process which affects one's physiology, psychology, and social position, the results do reflect some differences between age groups and change over the three years of the study. For example, vigorous physical activity participation rates differ between the three age groups over time. Although the data indicate different rates, frequencies and intensities, the changes do not necessarily imply withdrawal from activity and cessation of a positive attitude toward health and well being. Conversely, individuals kept physically active, progressing forward at a level they believed to be in their best interest, at their best rate; adapting to the realities of aging.

Rowe and Kahn (1998) define successful aging to be dependent upon individual choices and behaviours, which can be attained through individual effort and choice.

Individual differences is a term used to describe the great variability among people, and describes a phenomenon that is just as important to aging as the concept of age-related functional decline (Spirduso, 1995). The persistence in making comparisons of the aged to their younger cohorts may convey stereotypes that are not reflective of 'biological' age. Rather than solely focusing on comparisons between the young and old, this study also made comparisons between individuals from the same cohort.

Many theories of biological aging assume a steady rate of aging across different systems. However, these ideas are challenged when older individuals appear as healthy as or healthier than people half their age (Spirduso, 1995). Costa and McCrae (1980) exemplified that aging indeed can occur at different rates in different systems, and found no evidence for a 'single' aging factor. They suggested that individual differences seen in any age group are more likely due to differences in initial levels (physical/ mental features) and the presence or absence of illness. Generally, the results from this study indicated that the participants perceived themselves as equally or more active than their peers not only during adolescence but also during the time of the study. Further discussions of the patterns of physical activity, factors contributing to health and well being and lifestyle habits which these seniors reported will better illustrate their recipe for healthy aging.

## Physical Activity Patterns

### Participation in Physical Activity

Participation rates were studied for three years. It was reported that the top physical activities were walking, gardening/yard work, cycling, cross-country skiing, tennis, and swimming. This trend differs very slightly from the results recorded in the Campbell's Study (1988) where walking, gardening/yard work, cycling, swimming, and dance were rated the most preferred physical activity pursuits. Walking for exercise was the most popular activity for each age group over the three year period.

The youngest and middle group took part in all physical activities mentioned, with the exception of tennis over the three years. Although the results indicated a slight decrease in frequency of high intensity activities between 1993 and 1995, it was accompanied by a steady increase in the duration of each session of walking over the three years. Compared to the participants in the 1996-7 National Population Health Survey, these seniors definitely resemble the most active one third of the aging population.

Even though participants in the oldest group recorded only walking and gardening on a regular basis, they did walking for physical activity more than any other group. This may be indicative of the fact that walking is a fundamental form of movement which is the least strenuous on joint, tendon and muscles. Also, walking is helpful in accomplishing the ADL and IADL's such as walking room to room as previously discussed in earlier chapters. Increased walking pursuits for exercise, ADL, and IADL activities will help maintain independence, a goal for all of the participants in the study. Maintaining independence was a consistently desirable goal for all the participants in the study.

Researchers have suggested that walking and yard work were highly rated as common forms of physical activity. In some instances perhaps, the notion of 'health' benefits to physical activity may be second to the shear enjoyment of the interaction. This could imply that peoples' main thrust to be active is enjoyment first, with the added health benefit as a close second (Makosky, 1994; Spirduso, 1995). Responses for all three age groups suggest stability in their physical activity regime through compensation. They either replaced some activities with others, did them less often with an increased duration, or both (see Table 4).

All three age groups indicated that they were generally more physically active than both their peers at age 15 and their peers at present. The participants in this study seem to be evidence of the belief that physical activity adherence in later life may be reflective of initial levels in earlier life (Costa & McCrae, 1980). Though Spirduso (1995) noted that a small percentage of 65 year olds have engaged in physical activity throughout most of their lives compared to the rest of the population, physical activity can be seen as both a real and perceived component of wellness for the seniors in this study. As bluntly put by Rowe and Khan (1998) "there is a simple, basic fact about exercising and your health: fitness cuts your risk of dying" (p.97).

Orban (1994) noted that, "when all the risks of optimal active living are weighed against the benefits, the choice becomes clear; optimal active living increases the probability of a higher quality of life." Participants in the study were asked to report their current level of physical activity compared to their peers. The results suggested a clear perception that a current high-level of physical activity was sought out. In conjunction with the previous question, these participants have perceived themselves as more active.

Recently, Rowe and Kahn (1998) advocated that continued engagement with life is an important component of successful aging. Activities such as maintaining close relationships with others, remaining involved in activities that are purposeful, are important for well-being throughout the life course (Rowe & Kahn, 1998).

The literature suggests that the older proportion of the population is not vigorous and does not participate regularly in physical activity (tennis, golf, walking), despite its important component to successful aging (Rowe & Kahn, 1998). For example, in the young-old (65-74), one out of every three women and one out of every four men report no leisure time physical activities. Furthermore in the old-old (75 +), a group more severely ravaged by the effects of disease, 50% percent of women and 40% of men are sedentary and less than one in five participate in regular activity (Rowe & Kahn, 1998).

Vigorous Physical Activity

Participation in vigorous physical activity has traditionally been defined as exercising a minimum of three times per week for at least 20 minutes per session. Although much larger studies have reported between 30 and 40 percent of sedentary behaviour in people over the age of 65, the youngest and middle groups reported that they felt they could exercise vigorously. This belief was strongest in the youngest group and significantly higher for both groups in year two of the study.

Participants were asked the number of times per week they would participate in vigorous physical activity in the up coming year for at least 20 minutes per session. Both groups again indicated a strong desire to participate in vigorous activity in the future. Although it is clear from the actual participation rates that involvement in intense activities decreased, this significant main effect may suggest

that participants in the youngest and middle age groups have the perception that the effects of vigorous physical activity can still be achieved by increasing the duration of less stressful activities like walking.

As previously suggested, there appears to be a shift from high-intense physical activity to lower-intensive activity among all the participants. Does a shift away from vigorous physical activity mean a decrease in physical function and health? Rowe and Kahn (1998) suggest that the more frequent the exercise, the greater the benefit. Furthermore, moderate physical activity patterns such as walking, gardening, bowling, and golf proved to be nearly as protective of health as vigorous exercise (Shephard, 1997).

Goal Setting and Vigorous Physical Activity

Although participants were realistic about their ability to continue involvement in vigorous physical activity their belief in the benefits of participating vigorously was quite strong over the three years. Perceptions of well-being are highly related to their individuals' feelings of satisfaction about themselves, families and their jobs (Spirduso, 1995). Therefore, measuring life satisfaction (wellness) can be done by asking individuals to compare the overall conditions of their lives (i.e., their actual achievements) to the aspirations they had and have for their lives (Campbell, Converse, & Rodgers, 1976; George, 1979). Participants in this study continually insisted that reaching specific goals and monitoring a healthy regime was an important factor in establishing a foundation for 'wellness'.

Participants in the youngest group generally reported that vigorous physical activity for 20 minutes per session, three times a week, was a valued method to helping them feel better mentally and physically. The youngest group indicated that vigorous physical activity helped them to maintain their flexibility and social

interactions. The respondents in the middle group reported a decline in the importance of goal setting via vigorous physical activity in the third year of the study. These changes are consistent with the reduction of active participation in vigorous physical activity and the adoption of an active living approach to life (ALCOA, 1999).

## Factors Contributing to Health and Well-being

### Health Related Factors

Participants reported that regular rest, appropriate diet, controlled stress and regular physical activity were the key factors to promoting a healthy body. Both seniors aged 65 to 74 and those 75 to 84 reported increased strength in their beliefs between 1993 and 1995 concerning the importance of regular physical activity, rest and diet as key ingredients to their health and well being. It is possible that repeated questioning might have caused a response bias, but in light of the active lives these people were leading it is logical to conclude that they witnessed the benefits first hand.

The MacArthur Study indicates three factors that stand out as promoting later-life productivity: health and overall ability to function; participation in friendships and other social relations; and personal characteristics like believing in ones' self to handle what life has to offer. Rowe and Kahn add that people who rate their own health and factors of health positively, and who report few chronic conditions or none at all, are more likely to be more productive than those whose health is more problematic (1998).

Acute Conditions

The participants in the study were not without physical difficulties which had an affect on their daily function and regime or instrumental activities of daily living (IADL). Participants were asked to indicate if they have any difficulty performing specific tasks that were required in daily living.

Although they indicated that hearing during normal conversations and seeing at various distances were common ailments, watching television and reading were common activities enjoyed in a typical week in all three age groups.

Standing idle for long periods of time was the condition causing most discomfort. Unfortunately, this activity can be experienced in almost anything we do. Nevertheless, it was not stated that this or any other ailment was a 'barrier' to living independently or achieving goals and physical activity, but rather a nuisance.

Research on structural changes in the heart for persons' over 60 years of age may help explain this common phenomenon. According to Fleg (1986) as the aorta and arterial tree thicken and become less compliant with age, increased systolic blood pressure imposes a greater load on the heart. Because the arterioles in the arteries become less responsive during bouts of exercise and rest, increased peripheral resistance (circulation) develops, which may contribute to hypertension (Safar, 1990). These age related changes can account for some of the discomfort experienced with blood flow, or lack of, when individuals exercise beyond bouts of light physical work.

Another aspect of acute barriers are those that limit a persons' ability to carry out 'self care' activities, which are commonly referred to as activities of daily living (ADL). Participants in all three age groups uniformly reported few difficulties with ADL's during daily routines. Specifically, the oldest age group did indicate some difficulty with reaching, dressing, and getting out of bed. With respect to the

participants' physical activity patterns and the importance of health related factors in their daily lives, good functional capacity is not surprising.

Chronic Conditions

Chronic conditions were experienced by all participants in the study. These presented more serious and longer lasting conditions. Arthritis, high blood pressure, and heart disease were among the top chronic conditions reported over the three years. Despite these potentially limiting factors and potential barriers, participants consistently expressed a mental and physical willingness to be 'active' and to work on meeting weekly goals.

The MacArthur Study noted that the most common ailments today within the elderly population include; arthritis, heart disease, diabetes, communication and hearing disorders, cataracts and visual impairments. Despite the chronic conditions indicated by the participants in this study, they still considered themselves healthy. Rowe and Kahn (1998) reinforce the notion that what really matters is not the number or type of diseases one has, but how those problems impact on one's ability to function. As indicated in previous sections, generally the participants in the study possessed the will and ability to handle life as it came to them.

Spirduso (1995) noted that the development of artherosclerotic coronary artery disease significantly alters cardiovascular structure and function in most aged people and, in combination with hypertension, forces the cardiovascular system to work under enormous stress, even during light bouts of activity. In advanced stages, vigorous physical activity overwhelms the cardiovascular system and denies the body the required amount of blood. This might suggest that for those who suffer from heart and other cardiovascular problems there is a need to search for their individual limits in extremely active situations.

## Lifestyle

### Weekly Activities

It was evident that the most enjoyed lifestyle pursuit was watching television for the youngest and middle age groups. This leisure activity had a frequency of more than 10 hours per week. Older individuals may spend less time watching television because they struggle with hearing and vision losses; do not own a television; or find the programming unattractive. Participants in the youngest group who increasingly watched more television might be supplementing their free time via educational and entertaining programming.

Reading too was enjoyed by all three groups and was consistently done over three years. The youngest and middle age groups made time throughout the day to focus on television programming. The oldest group actually reported an increase in reading activity in the third year when compared to 1993 and 1994. Old and older individuals may adapt their activity patterns toward less 'physical' pursuits despite the loss of some eyesight. The oldest group also indicated that they were more cautious and fearful about participating in activities that required rapid physical movement. These explanations may account for the changing trend for the oldest group.

Visitations with friends and family members were consistently lower than other activities between the three age groups, over the three years. However, the oldest group indicated a more frequent visiting rate with relatives compared to those in the youngest and middle group. According to Spirduso (1995) the old and the old-oldest age groups may be capable or willing to perform instrumental activities of daily living (IADL) independently, although external support is often offered via friends and family. As involvement in more strenuous activities decreases,

socializing can provide a form of active stimulation that these healthy agers seem to thrive on.

Reaching Goals

The participants in all three age groups held strong beliefs in the importance of reaching specific goals in their spare time. Specifically, the most important goal for all three age groups was to maintain independence. The youngest and middle group reported that having fun was essential in their sought out goal attainment. Likely, the two youngest groups have different concerns to those of the old-oldest when it comes to weekly goals.

In a study by Ryff (1989), people aged 65 and over were asked, "what they would change (improve upon) in their lives?". Participants ranked 'nothing', 'health', and 'active self-improvement' as the top three changes. Although tennis was the one competitive sport engaged in, people seemed to have an intrinsic appreciation for activity and its benefits for a healthy balanced lifestyle.

Participants across the three groups generally ranked competition and the need to win as a less desired goal. This trend could result from the fact that none (few) of the participants participated in the Masters' athletic competitions. It was consistently observed over the three years that an emphasis was placed on activities that were casual by nature.

The participants desire to control and maintain their independence was also ranked high in their responses. In association with ones' willingness to preserve fitness and physical characteristics it requires ones' ability to make adaptive choices given their level and degree of independence.

## Conclusions

The participants in this study indicated that they are aging in a healthy and happy way. Comparing their responses to the literature, there appears to be some evidence that their ingredients for wellness and well being, that is, physical activity, attention to rest and diet, and maintaining independence, coincide with Rowe and Kahn's notion of maintaining mental and physical function, and continuing to seek engagement activities (1998). The realities of the functional implications of aging were seen in the adaptations they made in order to continue to meet mental and physical demands of life over the three years of the study. The participants' perception of health, wellness and well being was verified by their activity profile.

The results of this study cannot be generalized to all people who are aging, particularly when the heterogeneity of the aging population is considered. In addition, the attrition of the oldest group by the third year of the study makes it difficult to draw any conclusions with respect to within and between group differences. There does seem to be some evidence of a healthy attitude of engagement in life's activities and continued striving for goals through activity which are shared by all participants. As indicated by these comments of a 74-year old, "when the snow comes, so do the skis" or "when the flowers spring, daily activities last as long as the day itself." These beliefs are tempered by the realities of aging. On 78-year old participant offered, "what I do is what I know best, although life does not always play into your favour." Perhaps the greatest contribution of this study is that the participants do not represent a group of elite athletes, but rather people who have a history of a good health, and have chosen a lifestyle which continues to promote it.

Recommendations

This study recruited a biased sample of seniors over the age of 65 who felt they were healthy. It would be useful in future research to identify factors of wellness that are important to those who do not perceive themselves as 'well elderly' (participants who experience low levels of physical exercise; participants who experience 'negative aging'). In addition it would be helpful to determine if there is another segment of the population who may consider themselves healthy, but who do not use physical activity as one of the main avenues of healthy aging. Further investigation of the relationship of self-rated physical and mental health to actual future exercise behaviour would also be useful. All of these approaches would be necessitate both following people for a period of time, rather than taking a quick snap shot of their current behaviour, and emphasizing a qualitative approach so that more insight into compensatory behaviour could be gained.

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# APPENDICES

# Appendix A

# WE NEED YOU !!!

## ARE YOU FIT AS A FIDDLE?
## WE WANT TO KNOW WHY!

### IF YOU THINK YOU ARE HEALTHY, WHY NOT JOIN US IN OUR STUDY OF WELLNESS IN THUNDER BAY

WE NEED 30 PEOPLE AGED 65 YEARS OR OLDER WHO CAN:

- be interviewed about their health by a university student
- keep a list of everything they eat for 7 days
- give one small blood sample on one occasion
- answer additional questions if required

**IF YOU WANT TO JOIN US**
**PLEASE CALL DR. JANE TAYLOR, 343-8752 OR**
**DR. LORNE MCDOUGALL, 343-8395**

This is a cooperative study of Lakehead University, Schools of Physical Education and Nursing and Thunder Bay Homes for the Aged

Mrs. Nancy Moate Dr. Jane Taylor Dr. Ian Newhouse Dr. Lorne McDougall

# Appendix B

LAKEHEAD UNIVERSITY

955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1

School of Physical Education and Athletics
Telephone (807) 343-8544
Fax (807) 343-8944

**AN INVESTIGATION INTO THE FACTORS CONTRIBUTING TO THE WELLNESS OF OLDER ADULTS IN THUNDER BAY**

November 6, 1992

Dear Dr. _____

Re: _____
Patient

The above named patient has participated in a study on factors contributing to wellness, conducted by members of Lakehead University and the Thunder Bay Homes for the Aged. This study has been approved by the Lakehead University Ethics Committee and by the management from the Thunder Bay Homes for the Aged.

The respondent has given the researchers permission to contaact you to acquire/clarify information necessary to the study. Should you have any questions regarding this study, please feel free to contact Jane Taylor at 343-8752.

Your support in this effort would be greatly appreciated.

Sincerely,

Jane Taylor, Ph.D.

Ian Newhouse, Ph.D.

Lorne McDougall, Ed.D.

Nancy Moate, S.R.D.

# Appendix C

LAKEHEAD UNIVERSITY
955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1
School of Physical Education and Athletics
Telephone (807) 343-8544
Fax (807) 343-8944

**AN INVESTIGATION INTO THE FACTORS CONTRIBUTING TO THE WELLNESS OF OLDER ADULTS IN THUNDER BAY**

November 6, 1992

To:_____

From: Dr. Jane Taylor

We are interested in identifying various factors that contribute to wellness in an older population in Thunder Bay. This is an important topic as it is anticipated that by the year 2006, 15% of Ontario's population will be over the age of 65.

As a subject in this study we will ask you to complete a questionnaire about your lifestyle, activity level, ethnic background, perceptions of wellness and medical history. This should take about an hour of your time. You will then be asked to record your food intake and activity level for one week. At the end of this time an appointment will be made for you to provide a blood sample. A technician will visit you after a 12 hour fast(overnight) and draw approximately 12.5 ml of blood by venipuncture technique. In addition, height, weight and blood pressure will be assessed. Blood sampling will be conducted by a skilled technician. The amount of blood drawn will be small and there will be little discomfort with the procedure. There may be slight bruising at the point of puncture. This session should take about 10 minutes.

Publication of results will not reveal subject identity as you will be referenced by number. We do ask that you give us the name of your Family Doctor so that we can clarify medical conditions if necessary.

# Appendix D

# AN INVESTIGATION INTO THE FACTORS CONTRIBUTING TO THE WELLNESS OF OLDER ADULTS IN THUNDER BAY

**Jane Taylor, Ian Newhouse, Lorne McDougall, Nancy Moate & Leonard Dunkley-Popovitch**

**KEY WORDS - wellness, nutrition, physical activity patterns**

It is anticipated by the year 2006 that 15 percent of Ontario's population will be over the age of 65 (Stone & Fletcher, 1986). In fact, the number of persons over the age of 80 is expected to increase by 77% between the years 1986 and 2001 (Stone & Fletcher, 1986). In Thunder Bay, the average age of entry to homes for the aged is already in excess of 83 years-of-age. The Ontario provincial government has recently brought forth a policy which is committed to the goal of maintaining seniors in their own residences (*Redirection of Long-Term Care and Support Services in Ontario*, 1991; Kelley, Taylor, & Kirkpatrick, 1992). The wellness of this population is therefore of vital concern. The intent of this study was therefore, to identify various factors that contribute to wellness in an older population in Thunder Bay. The sample comprised 40 participants; 4 groups of well elderly. Three groups were community residents and one group were residents of the Thunder Bay Homes for the Aged. The three community groups were 65-74 years, 75-84 years and 85+ years-old, and those in formal care were 85+ years-old. Subjects in the study completed a personal interview, gave a sample of blood after fasting, and completed 7-day diaries of nutritional intake and physical activity patterns. The data presented will address similarities and differences in group perceptions of wellness and identify those factors which appear to contribute to the wellness of the well elderly in Thunder Bay.

Note: This study was approved by the Ethics Review Committee, Graduate Studies and Research, Lakehead University. This study was funded by the Research Fund of the Faculty of Professional Studies. Conclusions cannot be reported in this abstract as the data collection is just being completed.

# Appendix E

## YOUR LIFESTYLE

1. I am going to ask you some questions about what you do in a typical week. Do you *watch television*? Roughly estimate the number of hours you.do this.

| | 0 | 1-2 | 3-4 | 5-9 | 10-14 | more |
|---|---|---|---|---|---|---|
| watching television | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| reading | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| doing crafts/hobbies on your own | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| visiting with relatives | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| visiting with friends | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| watching (movies, plays etc) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| volunteering for group/agency | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| doing church activities | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| in service groups (ex:Rotary) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| in social groups (ex.cooking, cards) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| any others I have not mentioned | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

activity:_____

activity:_____

Our spare time allows us to reach our goals. How important is it for you to reach each of these following goals in your spare time:

| | very important | | | | not at all important |
|---|---|---|---|---|---|
| just to simply relax | ☐ | ☐ | ☐ | ☐ | ☐ |
| getting together with others | ☐ | ☐ | ☐ | ☐ | ☐ |
| having fun | ☐ | ☐ | ☐ | ☐ | ☐ |
| earning money | ☐ | ☐ | ☐ | ☐ | ☐ |
| getting outdoors | ☐ | ☐ | ☐ | ☐ | ☐ |
| competing/winning | ☐ | ☐ | ☐ | ☐ | ☐ |
| feeling independent | ☐ | ☐ | ☐ | ☐ | ☐ |
| feeling better mentally | ☐ | ☐ | ☐ | ☐ | ☐ |
| feeling better physically | ☐ | ☐ | ☐ | ☐ | ☐ |
| improving/maintaining fitness | ☐ | ☐ | ☐ | ☐ | ☐ |
| challenging your abilities | ☐ | ☐ | ☐ | ☐ | ☐ |
| learning new things | ☐ | ☐ | ☐ | ☐ | ☐ |
| looking better/controlling your weight | ☐ | ☐ | ☐ | ☐ | ☐ |
| taking risks/seeking adventure | ☐ | ☐ | ☐ | ☐ | ☐ |

## PHYSICAL ACTIVITY IN YOUR SPARE TIME

3. Now I would like to know if you have done any of these in your spare time. I would also like to know the number of times each week these activities are done:

| | No | Yes | Number of times each month: Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Average time per occasion: hrs | min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| walking for exercise | ☐ | ☐→ | | | | | | | | | | | | | | |
| bicycling | ☐ | ☐→ | | | | | | | | | | | | | | |
| jogging/running | ☐ | ☐→ | | | | | | | | | | | | | | |
| home exercises | ☐ | ☐→ | | | | | | | | | | | | | | |
| exercise classes | ☐ | ☐→ | | | | | | | | | | | | | | |

| | No | Yes | J | F | M | A | M | J | J | A | S | O | N | D | hrs | min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ice skating | ☐ | ☐→ | | | | | | | | | | | | | | |
| cross country skiing | ☐ | ☐→ | | | | | | | | | | | | | | |
| downhill skiing | ☐ | ☐→ | | | | | | | | | | | | | | |
| ice hockey | ☐ | ☐→ | | | | | | | | | | | | | | |
| swimming | ☐ | ☐→ | | | | | | | | | | | | | | |

| | No | Yes | J | F | M | A | M | J | J | A | S | O | N | D | hrs | min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gardening/yard work | ☐ | ☐→ | | | | | | | | | | | | | | |
| golf | ☐ | ☐→ | | | | | | | | | | | | | | |
| tennis | ☐ | ☐→ | | | | | | | | | | | | | | |
| weight training | ☐ | ☐→ | | | | | | | | | | | | | | |
| baseball | ☐ | ☐→ | | | | | | | | | | | | | | |

| | No | Yes | J | F | M | A | M | J | J | A | S | O | N | D | hrs | min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| popular of social dance | ☐ | ☐→ | | | | | | | | | | | | | | |
| ballet/jazz/modern dance | ☐ | ☐→ | | | | | | | | | | | | | | |
| square/folk dance | ☐ | ☐→ | | | | | | | | | | | | | | |
| bowling | ☐ | ☐→ | | | | | | | | | | | | | | |

| | No | Yes | J | F | M | A | M | J | J | A | S | O | N | D | hrs | min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| curling | ☐ | ☐→ | | | | | | | | | | | | | | |
| boccia ball | ☐ | ☐→ | | | | | | | | | | | | | | |

any others I have not mentioned

_____

_____

4. In the past year did you ever **stop** doing any physical activity in your spare time?

❑No ❑Yes, If so, what was it?_____

What was the reason?_____

Any other activity?_____

What was the reason?_____

5. Have you been able to do any physical activity at least once a week during the past 3 months?

❑No ❑Yes, Which sport/exercise contributed to your fitness during the past 3 months?

_____

b. Was the activity:

- ❑ scheduled for specific times
- ❑ supervised
- ❑ competitive
- ❑ casual

c. What usually happened to your heart rate and breathing when you did this activity? Was it: (*give choices)*

- ❑ a little faster than normal
- ❑ a lot faster/but talking was possible
- ❑ too fast to continue talking
- ❑ unchanged

d. How long have you been doing physical activity in your spare time at least once a week? (*give choices if you don't get an immediate response)*

- ❑ less than 3 months
- ❑ 4-6 months
- ❑ 6 months to just under 1 year
- ❑ 1-2 years
- ❑ 3-4 years
- ❑ 5-7 years
- ❑ more than 7 years

6. Would you say you were more or less active during the last year than you were 3 or 4 years ago?

- ❑ much more physically active
- ❑ a little more physically active
- ❑ a little less physically active
- ❑ much less physically active
- ❑ about the same/you have always been active
- ❑ about the same/you have never been active

I want you to compare yourself to others your age when you were 15 years old, would you say you were:

much more active❑ ❑ ❑ ❑ ❑ much less active

8. Compared to the way other way people your age spend their spare time, would you say you are:

much more active❑ ❑ ❑ ❑ ❑ much less active

9. With whom do you usually do your physical activities in your spare time?

- ❑ no one
- ❑ friends
- ❑ immediate family
- ❑ co-workers
- ❑ classmates
- ❑ others

10. Does your spouse or mate exercise regularly? (*Do this on your own if no spouse)*

- ❑ no
- ❑ yes
- ❑ don't have one

11. Of your other relatives and friends, **how many** exercise regularly?

- ❑❑ relatives
- ❑❑ friends
- ❑ none exercise regularly

12. I would like to know **where** you usually do your physical activity in your spare time:

- ❑home
- ❑park
- ❑recreational facility
- ❑other
- ❑commercial facility
- ❑outside(no facility)
- ❑school/college facility

13. Are there any specific exercises or sports activities you would like to start in the next year?

❑No ❑Yes, First choice_____
Second choice_____

14. How important are the following to you in preventing you from being more physically active?

| | very important | | | | not important |
|---|---|---|---|---|---|
| **don't have time** due to work | ❑ | ❑ | ❑ | ❑ | ❑ |
| volunteering | ❑ | ❑ | ❑ | ❑ | ❑ |
| other interests | ❑ | ❑ | ❑ | ❑ | ❑ |
| **dont' have** energy | ❑ | ❑ | ❑ | ❑ | ❑ |
| skill | ❑ | ❑ | ❑ | ❑ | ❑ |
| appropriate programs | ❑ | ❑ | ❑ | ❑ | ❑ |
| **dont' have** accessible facilities | ❑ | ❑ | ❑ | ❑ | ❑ |
| lack of a partner | ❑ | ❑ | ❑ | ❑ | ❑ |
| lack of support from family | ❑ | ❑ | ❑ | ❑ | ❑ |
| **don't have** caregiver for spouse | ❑ | ❑ | ❑ | ❑ | ❑ |
| respite care | ❑ | ❑ | ❑ | ❑ | ❑ |
| cost | ❑ | ❑ | ❑ | ❑ | ❑ |
| **dont' have** motivation | ❑ | ❑ | ❑ | ❑ | ❑ |
| drive | ❑ | ❑ | ❑ | ❑ | ❑ |
| self-conscious/ill at ease | ❑ | ❑ | ❑ | ❑ | ❑ |
| long term illness/disability | ❑ | ❑ | ❑ | ❑ | ❑ |
| fear of injury | ❑ | ❑ | ❑ | ❑ | ❑ |

## OPINIONS ABOUT VIGOROUS PHYSICAL ACTIVITY

Now I am going to ask you some questions about vigorous physical activity. Regular participation in vigorous physical activity means doing some activity in your spare time:

*3 or more times each week
*for 20 minutes or more each time
*at a level which causes your breathing to be faster

15. How do you feel about participating regularly in vigorous physical activity? Do you think it is:
*Give each alternative first and then go for degrees.*

| | | | | | | |
|---|---|---|---|---|---|---|
| boring | ❑ | ❑ | ❑ | ❑ | ❑ | fun |
| beneficial | ❑ | ❑ | ❑ | ❑ | ❑ | harmful |
| unpleasant | ❑ | ❑ | ❑ | ❑ | ❑ | pleasant |
| convenient | ❑ | ❑ | ❑ | ❑ | ❑ | inconvenient |
| painful | ❑ | ❑ | ❑ | ❑ | ❑ | not painful |
| easy | ❑ | ❑ | ❑ | ❑ | ❑ | difficult |

16. Do you feel you have a choice in whether you participate in regular vigorous physical activity? *Again go for alternatives, yes or no and then do extremes.*

| | | | | | | |
|---|---|---|---|---|---|---|
| completely your choice | ❑ | ❑ | ❑ | ❑ | ❑ | too many constraints on you |

17. How much would you say the following people encourage you to participate in vigorous physical activity?(*Do degrees after you have established either positive or negative)*

| | do not have one | encourages me/very supportive | | | | discourages me/very negative |
|---|---|---|---|---|---|---|
| spouse, partner | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| parents | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| son,daughter | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| other family members | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| close friends | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| (your employer) | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |
| your doctor | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ |

18. Do you think participation in vigorous physical activity would help you to:
*Do yes or no first, then degrees.*

| | Yes | | | No | |
|---|---|---|---|---|---|
| | a great deal | | | | not at all |
| relax(forget about your cares) | ❑ | ❑ | ❑ | ❑ | ❑ |
| get together with other people | ❑ | ❑ | ❑ | ❑ | ❑ |
| having fun | ❑ | ❑ | ❑ | ❑ | ❑ |
| earn money | ❑ | ❑ | ❑ | ❑ | ❑ |
| get outdoors | ❑ | ❑ | ❑ | ❑ | ❑ |
| compete/win | ❑ | ❑ | ❑ | ❑ | ❑ |
| feel independent | ❑ | ❑ | ❑ | ❑ | ❑ |
| feel better mentally | ❑ | ❑ | ❑ | ❑ | ❑ |
| feel better physically | ❑ | ❑ | ❑ | ❑ | ❑ |
| challenge your abilities | ❑ | ❑ | ❑ | ❑ | ❑ |

| | | | | | |
|---|---|---|---|---|---|
| look better | ❑ | ❑ | ❑ | ❑ | ❑ |
| control/lose weight | ❑ | ❑ | ❑ | ❑ | ❑ |
| take risks/see adventure | ❑ | ❑ | ❑ | ❑ | ❑ |
| not to become puffed | ❑ | ❑ | ❑ | ❑ | ❑ |
| improve/maintain strength | ❑ | ❑ | ❑ | ❑ | ❑ |
| improve/maintain flexibility | ❑ | ❑ | ❑ | ❑ | ❑ |

19. Do you feel that you could participate in vigorous physical activity 3 or more times a week for at least 20 minutes at a time?

strongly agree ❑ ❑ ❑ ❑ ❑ strongly disagree

20. In the up coming year, how often do you think you'll be able to participate regularly in vigorous physical activity? (*Give alternatives)*

- ❑ never
- ❑ less than once a week
- ❑ 1-2 times per week
- ❑ 3 times per week
- ❑ 4-5 times per week
- ❑ 6 of more times per week

**YOUR HEALTH AND WELL-BEING**

Now I am going to ask you some questions about your health. Could you please tell me how important each of the following is to your health: (*Do yes no first, then degrees*)

| | very important | | | | not at all important |
|---|---|---|---|---|---|
| adequate rest/sleep | ❑ | ❑ | ❑ | ❑ | ❑ |
| good diet | ❑ | ❑ | ❑ | ❑ | ❑ |
| proper weight | ❑ | ❑ | ❑ | ❑ | ❑ |
| social/cultural events | ❑ | ❑ | ❑ | ❑ | ❑ |
| controlling stress | ❑ | ❑ | ❑ | ❑ | ❑ |
| regular physical activity | ❑ | ❑ | ❑ | ❑ | ❑ |
| smoke free surrounding | ❑ | ❑ | ❑ | ❑ | ❑ |

22. The following is a list of how people feel at different times. Could you please tell me how you have felt during the past few weeks:

| | often | some-times | never |
|---|---|---|---|
| really great | ❑ | ❑ | ❑ |
| very lonely/withdrawn | ❑ | ❑ | ❑ |
| excited/curious | ❑ | ❑ | ❑ |
| depressed/very unhappy | ❑ | ❑ | ❑ |
| pleased about an accomplishment | ❑ | ❑ | ❑ |
| bored | ❑ | ❑ | ❑ |
| proud because someone had congratulated you | ❑ | ❑ | ❑ |

| | | | |
|---|---|---|---|
| too restless to sit down | ❑ | ❑ | ❑ |
| things are going your way | ❑ | ❑ | ❑ |
| upset because you have been criticized | ❑ | ❑ | ❑ |
| stressed | ❑ | ❑ | ❑ |

23. Are you limited in the type or amount of **work** (which can be any type of work) you can do because of illness, injury, or handicap? (*Yes, no , why*)
- ❑ no
- ❑ yes, because of temporary illness
- ❑ yes, because of long term illness
- ❑ yes, because of temporary injury
- ❑ yes, because of a permanent injury or handicap

24. Are you at all limited in the amount of **leisure-time physical activity** you can do because of illness, injury, or handicap?
- ❑ no
- ❑ yes, because of temporary illness
- ❑ yes, because of long term illness
- ❑ yes, because of a temporary injury
- ❑ yes, because of a permanent injury of handicap

25. The next question asks about trouble you have doing certain activities even when using a special aid. A special aid can be anything used to help you function.

| Do you have any trouble | have trouble | no trouble |
|---|---|---|
| **hearing** during a normal conversation | ❑ | ❑ |
| hearing in a group discussion | ❑ | ❑ |
| reading ordinary newsprint | ❑ | ❑ |
| clearly **seeing** someone at 20 feet/with glasses if normally worn | ❑ | ❑ |
| **speaking** and being understood | ❑ | ❑ |
| **walking** over 400 yards without rest | ❑ | ❑ |
| walking up/down a flight of stairs | ❑ | ❑ |
| carrying a 10 lb. object for 30 feet | ❑ | ❑ |
| moving from one room to another | ❑ | ❑ |
| standing for long periods of time | ❑ | ❑ |
| while standing, bending over to pick something up off the floor | ❑ | ❑ |
| dressing and undressing yourself | ❑ | ❑ |
| getting in and out of bed | ❑ | ❑ |
| cutting your own toe nails | ❑ | ❑ |
| using your fingers to grasp a handle | ❑ | ❑ |
| reaching in any direction | ❑ | ❑ |
| cutting your own food | ❑ | ❑ |

26. In the past 12 months, have you suffered from any injuries as a result of doing sport or exercising activities?

❑ no ❑ yes
Most recent injury was:_____
What activity:_____
For how long did this injury prevent you from:
Work/daily event_____days(or)_____weeks____(or)___months
Exercising _____days(or)_____weeks____(or)_____months

27. **DURING THE LAST 12 MONTHS,**

...did you see or talk to a doctor about your health?
❑ no ❑ yes:How many times

...did you see or talk to any other kind of health professional?
❑ no ❑ yes:How many times (

...how many nights did you spend in a hospital/nursing home?
❑ none nights( )

28. What would you consider to be your ideal weight from a healthy point of view?

)lbs )Kg

**ABOUT YOU**

Now I would like to ask you some questions about you.

29. Where were you born?_____province
Outside of Canada?( )

30. What was the first language you learned at home?_____

31. What is your marital status?
❑Married(including common law) ❑separated
❑widowed ❑single(never married)
❑divorced

32. What are you presently doing/your status?(*Circle Full of Part Time - give choices*)
❑Student Full Time Part Time ❑employed Full Time Part Time
❑homemaker ❑retired
❑volunteer ❑unemployed
❑other_____

33. What is the highest level of education that you have reached?
❑ elementary or less ❑some post-secondary
❑ some secondary school ❑community college/CEGEP
❑ secondary diploma ❑one or more university degrees

34. About how many years have you lived in this province?
_____years

35. About how many years have you lived in this city?
_____ years

36. About how many years have you lived in your present neighborhood?
_____ years

37. Where were your father and mother born?

| Father | Mother |
|---|---|
| Province_____ | Province _____ |
| Outside of Canada_____ | Outside of Canada_____ |

**MEDICINE AND DRUGS**

Now I am going to ask you some questions regarding any medication that you have been taking in the last 4 weeks.. Have you taken:

| | | yes/ no | did you take this on the advise of a doctor or dentist | did you take this at least once a week in the past 4 weeks |
|---|---|---|---|---|
| 39. | Pain relievers (aspirin/advil) | Y N | Y N | Y N |
| 40. | Medicine for the heart or blood pressure | Y N | Y N | Y N |
| 41. | Stomach remedies or laxatives | Y N | Y N | Y N |
| 42. | Tranquilizers or sleeping pills (valium/diazapam) | Y N | Y N | Y N |
| 43. | Penicillin or other antibiotics | Y N | Y N | Y..N |
| 44. | Cough or cold remedies | Y N | Y..N | Y N |
| 45. | Allergy medicine or antihistamines | Y N | Y N | Y N |
| 46. | Codeine, Demerol, or Morphine | Y N | Y N | Y N |
| 47. | Anti-Depressants | Y N | Y N | Y N |
| 48. | Diet pills or stimulants | Y N | Y N | Y N |
| 49. | Vitamins | Y N | Y N | Y N |

50. Could you tell me the number of prescription drugs you have taken in the last 4 weeks

) number

**SMOKING**

Now I am going to ask you some questions about smoking.

51. At the present time do you smoke cigarettes daily, occasionally, or not at all?

- ❑ Daily
- ❑ Occasionally→→→→→**56**
- ❑ Not at all→→→→→→→**56**

52. At what age did you begin to smoke daily?

age ( )

53. How many cigarettes do you smoke daily now?

number of cigarettes (

54. How likely do you think it is that your smoking will lead to health problems for you?

- ❑ 1) very likely
- ❑ 2) somewhat likely
- ❑ 3) somewhat unlikely
- ❑ 4) very unlikely

55. Have you tried to quit smoking in the last 12 months?

- ❑ yes→→→→→→→→**go to 60**
- ❑ no→→→→→→→→**go to 60**

56. Have you ever smoked cigarettes daily?

- ❑ yes
- ❑ no→→→→→→→→**go to 60**

57. At what age did you begin to smoke daily?

age (

58. At what age did you stop smoking daily?

age ( )

59. How many cigarettes a day did you usually smoke?

number of cigarettes (

60. Do you smoke pipes, cigars, or cigarillos daily, occasionally, or not at all?

- ❑ 1) daily
- ❑ 2) occasionally
- ❑ 3) not at all

61. How many of your friends smoke cigarettes?

- ❑ 1) all of them
- ❑ 2) most of them
- ❑ 3) about half of them
- ❑ 4) a few of them
- ❑ 5) none of them

**ALCOHOL**

Now I am going to ask you some questions about the consumption of alcohol in your life. When I refer to a drink it means either:

*1 bottle of beer
*1 glass of wine
*1 small shot of liquor/spirits

62. Have you ever taken a drink of beer, wine, liquor or other alcoholic beverage?

❑ yes ❑ no (**go to next section**)

63. In the past 12 months how often did you drink alcoholic beverages?

- ❑ 1) everyday
- ❑ 2) 4/6 times a week
- ❑ 3) 2/3 times a week
- ❑ 4) once a week
- ❑ 5) once or twice a month
- ❑ 6) less than once a month

64. In the past 12 months how many times did you drink 10 or more drinks on one occasion?

times (

65. How likely do you think it is that your drinking will lead to health problems for you? (*Give choices if necessary*)

- ❑ 1) very likely
- ❑ 2) somewhat likely
- ❑ 3) somewhat unlikely
- ❑ 4) very unlikely

66. In the past 12 months have you tried to reduce the amount you drink?

❑ yes ❑ no

**MEDICAL HISTORY**

Now I am going to ask you some questions about your medical history. Please note that all information is confidential.

67. O.H.I.P /HEALTH #:_____

Family Doctor:_____

68. During the past 6 months have you experienced any of the following changes in your health?

| | YES | NO |
|---|---|---|
| * Unintentional loss of body weight (>10lbs) | ❑ | ❑ |
| * Loss of appetite | ❑ | ❑ |
| * Loss of taste or smell | ❑ | ❑ |
| * Food allergies or intolerances | ❑ | ❑ |
| * Unable to feed self | ❑ | ❑ |
| * Irregular bowel habits (diarrhea) | ❑ | ❑ |
| * Impaired ability to swallow or chew | ❑ | ❑ |
| * Ill fitting dentures or lack of dentures | ❑ | ❑ |
| * Medication regime affecting your appetite | ❑ | ❑ |
| * Dehydration or edema | ❑ | ❑ |
| * Immobility | ❑ | ❑ |

69. The following questions refer to chronic health problems, something you have suffered from recently, or in the past.

| | YES | NO | ELABORATE |
|---|---|---|---|
| * Spells of dizziness | ❑ | ❑ | _____ |
| * Skin allergies/diseases | ❑ | ❑ | _____ |
| * Hay fever of other allergies | ❑ | ❑ | _____ |
| * Serious back trouble | ❑ | ❑ | _____ |
| * Serious trouble with joints/bones | ❑ | ❑ | _____ |
| * Arthritis/Rheumatism | ❑ | ❑ | _____ |
| * Paralysis or speech problems(stroke?) | ❑ | ❑ | _____ |
| * Emphysema/chronic Bronchitis/ | ❑ | ❑ | _____ |
| * Persistent cough | ❑ | ❑ | _____ |
| * Epilepsy | ❑ | ❑ | _____ |
| * High blood pressure/hypertension | ❑ | ❑ | _____ |
| * Asthma | ❑ | ❑ | _____ |
| * Circulatory problem | ❑ | ❑ | _____ |
| * Heart disease | ❑ | ❑ | _____ |
| * Diabetes | ❑ | ❑ | _____ |
| * Urinary problem/kidney disease | ❑ | ❑ | _____ |
| * Stomach ulcer | ❑ | ❑ | _____ |
| * Other digestive problems | ❑ | ❑ | _____ |
| * Goitre/thyroid trouble | ❑ | ❑ | _____ |
| * Eye trouble (glaucoma/cataract) | ❑ | ❑ | _____ |
| * Cancer (if so, what type) | ❑ | ❑ | _____ |

* Do you have any other long term health problems ❑YES ❑NO

* If so, what are they:_____

# Appendix F

# Guidelines for Interviewing Seniors

## Introduction

1. It is important to start off in a conversational way, introduce yourself and tell the respondent something about yourself so that it is clear that you are making an investment in the process as well.

2. Try to keep your voice natural, but low is probably better than high. Assume that the person can hear and is an intellectual. Alter if you experience obvious lack of understanding.

3. Make sure the speed of the interview is paced, both in wording and in time between questions, in other words, not too fast.

4. Establish eye contact right away.

5. Make sure your lips are visible in case the person uses them to decipher words.

6. Use words that are understandable but not demeaning eg. you might change "methodological design of the study" to "approach."

7. Try to do it in one attempt, but be willing to come back.

8. Be sensitive to the person's energy level.

9. Reaffirm at the beginning of the questionnaire, that the person doesn't have to answer a question if they don't want to.

10. There are no right or wrong answers.

11. Work on your pacing. Rephrase questions if you have to. Give back what they said if they start to wander.

12. Remember that digression is natural.

13. If digression just continues bring them back to the question.

14. Logical probes are"Can you tell me more? How do you feel about that? Make sure to give them WAIT TIME. and time to elaborate, think and plan their answers. Don't jump in too soon. It they say they don't know, rephrase the question. Use and example. eg prompt - exercise, don't smoke etc.

15. Try to learn the questions verbatim to start. Don't leave out or give more information to some than others. Take note paper for extra notes.