

NEW ACTIVE GREEN ENVIRONMENTS (NEW AGE): OLDER ADULTS'
PERCEPTIONS ABOUT PHYSICAL ACTIVITY OPPORTUNITIES IN THEIR
LOCAL ENVIRONMENT

BY

LETICIA MATOS MALAVASI

DISSERTATION

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Doctoral Committee:

Professor Wojtek Chodzko-Zajko, Chair
Professor Kim Graber
Associate Professor Laura Payne
Assistant Professor Andiara Schwingel

ABSTRACT

Health behavior, planning and community design studies consistently find that the environment can act to serve as a barrier to physical activity, as well as a facilitator for activity options. Recent research suggests that reconfiguring the built environment in a way to increase the number and variety of opportunities for physical activity available to community residents, there would be an increase likelihood of individuals choosing to be physically active. The purpose of this project was to explore the perceptions of older adults regarding the environment around the retirement communities in which they live and the impact that this environment has on their attitudes and values towards physical activity. To accomplish such purpose, a qualitative research design was used to evaluate the subjective reactions and responses of older adults living in three retirement communities in the Urbana-Champaign area. Twelve participants from each facility were interviewed for about 60-90 minutes and answered thirty research questions related to the attitudes towards physical activity and outdoor environment that surrounds their facility. By including older adults living in three quite different locations which differ substantially with respect to environmental support for physical activity, this project was able to identify a diverse sample of older adults who vary with respect to how they value both individual physical activity participation and the environment in which they live. Several distinct cohorts of older adults were identified; (1) individuals who were highly positive about redesigned landscape to stimulate active choices, (2) individuals who were

non-supportive of redevelopment their facility; as well as (3) regular users of outdoors, and (4) non-users of the outdoor space. Changes to the built environment have the potential to be viewed both more and less positively. It is important to carefully study the preferences and opinions of older persons prior to embarking on any strategy to redesign the environment. By increasing our understanding of how and why preferences and values interact with environmental variables, we will have a better comprehension of environmental changes.

To my family and friends

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CHAPTER 1

INTRODUCTION

1.1 PHYSICAL ACTIVITY IMPORTANCE

Compelling evidence exists which shows that regular physical activity has the potential to significantly impact health and quality of life of people of all ages. The Physical Activity Guidelines for Americans (USDHHS, 2008) confirm that physically active lifestyles are associated with improved physiological, psychological, and social functioning, and assist in the prevention and treatment of many chronic diseases.

An appreciation of the importance of the relationship between participation in regular physical activity and the prevention of chronic diseases and conditions began emerging in the 1940's and 50's when the first epidemiological studies found that physical inactivity was associated with an increased risk of the development of cardiovascular disease (Morris, Heady, Raffle, Roberts, & Parks, 1953; Paffenbarger et al., 1966). In response to these promising early epidemiological studies, between the 1960's and the 1990's, a large number of well-controlled experimental trials established that exercise training interventions could be shown to produce significant changes in a wide variety of physiological, psychological, and social outcome measures.

Exercise training studies initially focused on establishing the specific mode, intensity, and duration of exercise necessary to elicit a reliable change in a particular outcome measure (ACSM, 1975). Early studies tended to focus on aerobic exercise training of moderate to high intensity (seventy to ninety percent heart rate reserve) with training occurring three to five times per week for a period of three to four months

(Cureton & Phillips, 1964). After the underlying principles of exercise prescription were established for aerobic exercise for young and healthy adults (Cooper, 1968), exercise science research studies gradually expanded to include a broad range of different modes of exercise (resistance exercise, balance training, flexibility, etc.) as well as a variety of different demographic groups including children, youth, and older adults.

One area of particular relevance to this study is the relationship between physical activity and health status and quality of life in the older adult population. During the 1970's and 80's, several landmark studies established that older adults could benefit from participation in regular physical activity to a degree similar to younger individuals (for a review of early studies see: (Shephard, 1987; Spirduso, 1980; Spirduso, MacRae, MacRae, Prewitt, & Osborne, 1988). By the early 1990's, a consensus emerged to the effect that there was a strong and important relationship between participation in physical activity and successful aging. In 1992, Human Kinetics Publishers launched the first academic journal dedicated to the scientific study of exercise and physical activity in the older adult population, and the evidentiary base of knowledge concerning the health benefits of exercise began to grow dramatically (Chodzko-Zajko, 1993).

1.1.1 Physical Activity and Older Adults

In 1996, the World Health Organization (WHO) published the WHO Heidelberg Guidelines for Physical Activity for Older Persons. This presented, for the first time, a clear and unambiguous statement from the WHO endorsing the crucial role of regular physical activity as an integral component of healthy aging (WHO, 1997). The Guidelines stated that the evidence was clear that regular physical activity should be a

part of the daily routine for the vast majority of older persons, and that regular physical activity is one of the most effective means whereby individuals can influence their own health and functional abilities. During the following year, the American College of Sports Medicine (ACSM) issued a Position Stand on Exercise and Physical Activity that concluded that there were substantial physiological and psychological benefits associated with regular exercise and that virtually all older persons should be encouraged to engage in physical activities on a regular basis (Mazzeo, 1998).

By the year 2000, it had become clear that regular physical activity can bring dramatic health benefits to people of all ages and abilities, and that these benefits extend throughout the entire course of the life cycle. Unfortunately, despite the wealth of confirmatory evidence, attempts to convince older Americans to adopt physically active lifestyles have met with little success. For example, the U.S. Surgeon General's Report estimated that between one third to one half of Americans over age 50 get no leisure time physical activity whatsoever (USDHHS, 1996).

Researchers began to realize that it was insufficient to establish that physical activity was beneficial for older adults. It was also important to examine why such a large percentage of seniors chose to remain sedentary, and how best to help them to change their behavior and become more physically active (Dishman, 1995). In 2001, the Robert Wood Johnson Foundation convened a coalition of more than fifty national organizations. The foundation charged them with identifying societal barriers to physical activity participation by older adults and outlining specific strategies for overcoming these barriers. The National Blueprint for Promoting Physical Activity in Older Adults identified significant barriers to physical activity in the areas of research, home and

communities, medical systems, public policy, marketing and communications (National Blueprint, 2001).

1.1.2 New Strategies to stimulate Older Adults

Over the course of a period of eight years between 2001 and 2009, the Blueprint coalition advocated a number of concrete strategies that could be used to overcome the barriers to physical activity in society at large (Chodzko-Zajko et al., 2005). Of particular relevance to this study were a series of strategies that focused on examining how local communities could be restructured to provide increased environmental support for physical activity. Their strategies were based on the work of environmental and behavioral psychologists and public health scientists (Bauman, 1987; Dishman, 1995; Sallis, 1996). The Blueprint coalition advocated the establishment of multi-level, ecologically valid approaches to physical activity promotion in which the individual old person is recognized as being just one level in a complex hierarchy of determinants that include the individual, the community, and the built and the built and social environment. This approach is consistent with the Social Ecological Theory of Physical Activity, which proposes that physical activity behavior among individuals emerges as a result of complex, multi-level interactions between the individual and numerous environmental determinants (Sallis & Owen, 2002).

One key environmental barrier to physical activity that was identified in the Blueprint is the sort of poor design of neighborhoods and communities that actively discourages older adults from participation in physical activity. A number of researchers have suggested that it should be possible to intentionally redesign the built environment

in such a manner that doing so would increase the number, and variety, of opportunities for physical activity that are available to community residents, which would thereby increase the likelihood that individuals would choose to adopt physically active lifestyles.

During the past several years, an interdisciplinary group of researchers at the University of Illinois examined the feasibility of redesigning the outdoor space around a retirement community in order to develop an outdoor environment that is more attractive and inviting to the older adults who live in the facility. The New Active Green Environment (New AGE) project seeks to increase our understanding of how older adults relate to the environment around them and whether changes in the environment can encourage residents to adopt lifestyles that are more physically active. A major goal of the proposed study is to increase our understanding of how older adults perceive the space around their dwellings and whether they react positively or negatively to changes made to their local environment (Park et al., 2005).

The vast majority of research on physical activity and aging is founded on a positivist research philosophy. Researchers attempt to quantify the benefits of regular physical activity using group-based, experimental research designs in which exercise is a variable that is manipulated by the investigator and the effects are assessed by comparing differences in mean values between exercise groups versus sedentary groups for a particular outcome measure. Sandra Cousins and Bevan Grant (Grant & Cousins, 2001b), in a special edition of the *Journal of Aging and Physical Activity* on the subject of the “Promise of Qualitative Research in Physical Activity and Aging,” argued that, despite the wealth of knowledge that has emerged from traditional quantitative research approaches, research that examines the feelings and subjective perceptions of older adults

regarding physical activity and what it means to older adults to be physically active is needed.

Cousins and Grant (Grant & Cousins, 2001) argue compellingly that qualitative research designs which invite older adults to share their feelings about why they choose to be active or inactive can complement more traditional positivist approaches, and have the potential to help us understand why a large proportion of the older adult population remains resistant to traditional physical activity interventions.

The goal of the present study was to utilize a rigorous qualitative research design to explore the perceptions of older adults regarding the environment around the retirement communities in which they live and the impact of this environment on their attitudes and values regarding physical activity. Achieving this goal involved conducting a series of structured, in-depth interviews and focus groups intended to explore attitudes regarding physical activity and the outdoor environment among older adults who live in three residential retirement communities in Central Illinois. This study involved using a theoretical framework adapted from the Social Ecological Model of Physical Activity (Sallis et al., 2006; Sallis & Owen, 2002). This study attempted to increase our understanding of how intrapersonal, environmental, behavioral, and policy factors interact to shape the perceptions and values of older adults that relate to physical activity and outdoor space. The design deliberately selected individuals living in retirement communities located in relatively more enriched (Clark Lindsey Village), less enriched (Champaign County Nursing Home), and unenriched (Inman Plaza) environments. Doing so enabled this researcher to explore the context in which individual determinants interact

with environmental, behavioral, and policy factors to shape the perceptions and feelings of residents about physical activity and the outdoor environment.

The study specifically planned to engage older adults in discourse concerning how they feel about physical activity and the outdoor environment using Sallis' framework (Sallis et al., 2006; Sallis & Owen, 2002). The first step was to ask questions intended to facilitate understanding of an older person's intrapersonal relationship with physical activity. These questions explored personal feelings and values concerning the importance and meaning of physical activity both for themselves in particular and for older adults in general. The next step involved asking questions about each individual's physical activity participation levels both in the past and in the present. The subsequent step involved employing a series of questions designed to explore the same individual's attitudes and values about how they perceived the environment in which they live and its importance in relationship to their overall quality of life. Questions were asked about why they chose to live in their current location and how they feel about the place where they live. The participants were encouraged to critically compare where they currently lived with locations where they had lived in the past. After exploring their perceptions regarding environmental quality in general, the next step was to explore the perceptions of older adults regarding the degree to which specific environmental factors facilitate or discourage physical activity behavior in particular. This investigation also explored topics such as available facilities, safety, access, weather, time and how these factors impact older persons' decisions regarding spending time outdoors. Finally, older adults were asked to discuss the extent to which the policy environment that regulate the facility and/or neighborhood in which they live, serves to facilitate or discourage both

participation in physical activity, and the use of outdoor space and facilities, on their part. For example, the participants were asked questions about the locations of nearby parks and open spaces, the presence, cost and availability of physical activity programs, staff support for physical activity, and informational campaigns intended to promote physical activity and healthy lifestyles.

It is important to note that choosing three distinct retirement communities in which to interview residents derived from this researcher's intention to select a diverse group of older adults living in some relatively affluent and advantaged setting and those of residents living in a more challenging and less advantaged environment. The study was designed to invite individuals to share their stories and perceptions, and explicitly avoid attempting to draw group-based comparisons across different settings or locations. The expectation was that the study would identify individuals in both locations who were actively engaged in making use of the outdoor space that surrounds their residences, as well as many individuals in both places who engage in little interaction with the outdoors. Thereby increasing our understanding of how and why intrapersonal preferences and values interact with a variety of environmental variables. By employing this strategy the study has the potential to add to our understanding of the appropriateness of different strategies that have been proposed enhancing environmental support for physical activity and increasing health and quality of life of older persons.

1.2 Theoretical Model

The Social Ecological Model (Sallis & Owen, 2002; Stokols, 1992; Stokols, Allen, & Bellingham, 1996) suggests that there are multiple levels of factors which influence exercise behavior. In addition to individual lifestyle choices, factors such as the

physical environment, community programs, social support, and local, regional and national policies can impact exercise choices and other types of lifestyle behavior. One important characteristic of the Social Ecological Model is that it acknowledges that environmental factors must be taken into consideration when developing recommendations for physical activity for different segments of the population. Furthermore, this model suggests that simply offering individual physical activity programs is unlikely to be a strategy that is sufficient in and of itself to increase physical activity on the community or population level. Unfortunately, relatively little is known about the precise manner in which environmental factors influence physical activity choices of older adults. More research is required to understand how older adults feel about the environment that surrounds them and when environmental factors are perceived to operate as barriers or facilitators for physical activity.

Several recent studies have assessed how selected attributes of the environment impact the levels of physical activity of older adults who dwell in communities. These studies have shown that their levels of physical activity can be increased by improving the availability of, and access to, physical activity facilities and programs, and by supporting active choices in everyday life (e.g., walking for transportation; easy access to shops and services). These studies suggest that older adults who live in, or close to, enriched physical environments are more likely to be physically active than those who live in impoverished physical environments. Unfortunately, little is known about whether differences exist between different types of older persons with respect to their likelihood of taking advantage of environmental opportunities for physical activity.

Most of the previously published studies that examined environmental support for physical activity have employed quantitative research designs. While it is true that quantitative studies are a useful resource for gathering numerical data, qualitative methods can provide additional insights concerning how older adults perceive their living environments. Qualitative research approaches can lead to a better understanding of how people feel about both physical activity in general and how their surrounding neighborhoods support (or fail to support) healthy lifestyle choices.

In order to better understand the relationship between the local environment and physical activity choices of older adults, this study focused on seeking a better understanding of the interrelationships between two levels of the Social Ecological Model. More specifically, this involved examining how the individual perceptions, feelings, and values of older adults regarding physical activity in general, interact with, and influence, their perceptions regarding the local community and the environment. A qualitative research design was used for the purpose of examining whether the perceptions of older adults regarding the environment, and their perceptions of the importance of physical activity to them as an individual, can be plotted using two dimensions; i.e., a dimension representing the importance of physical activity and a dimension representing the importance of environmental awareness.

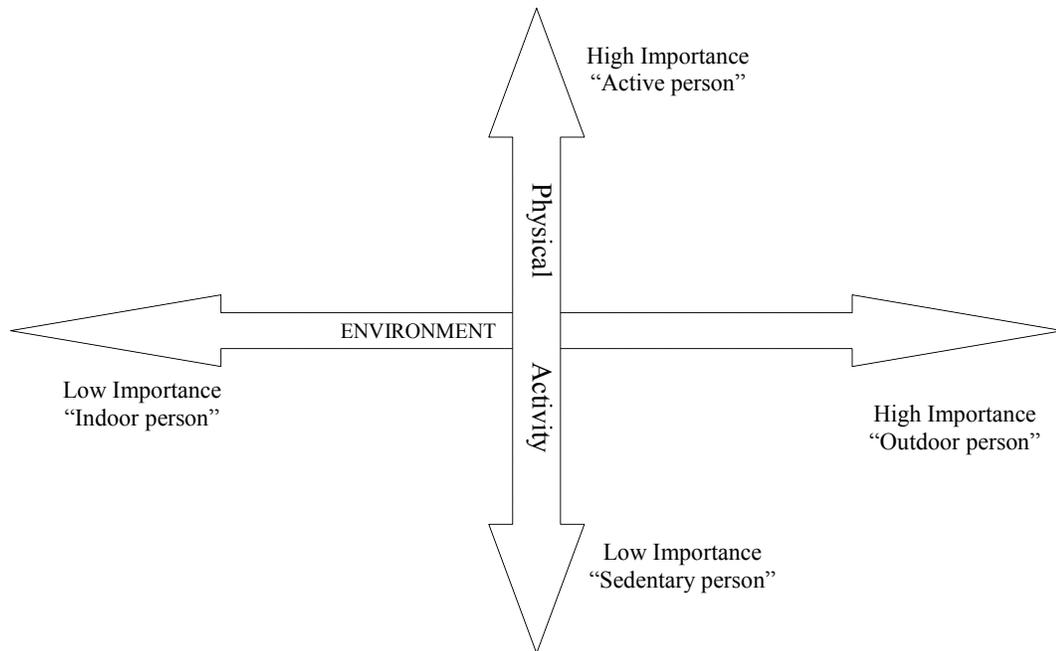


Figure 1 – Model of Physical Activity and Environment Continuum

This model categorizes individuals in four ways. This approach involves interviewing older adults and asking in-depth questions in order to categorize the feelings, perceptions and values of older adults concerning physical activity and the environment along two distinct dimensions. This approach categorizes an individual who is high in both physical activity and environment using dimensions (High PA + High Env) to show how that person values the importance of both individual physical activity participation and spending time outdoors. By contrast, a person who values the importance of physical activity but does not spend time outdoors (High PA + Low Env) is more likely to take advantage of indoor physical activity opportunities. Conversely, individuals who attach low importance to the physical activity dimension and attach high importance to environmental awareness (Low PA + High Env) are more likely to participate in sedentary outdoor activities. Individuals who are low along both

dimensions (Low PA + Low Env) are most likely to participate in indoor sedentary activities, such as watching television.

By including older adults who lived in three locations which differ substantially with respect to environmental support for physical activity helped to identify a diverse sample of older adults who varied with respect to how they value both individual physical activity participation and the environments in which they live. Interviewing older persons and discovering their feelings, perceptions and values about the dimensions of both physical activity and the outdoor environment helped to shed new light on the lifestyle preferences and choices of older adults.

CHAPTER 2

LITERATURE REVIEW

The goal of the present study was to utilize a rigorous qualitative research design to explore the perceptions of older adults regarding the environment around the retirement communities in which they live and the impact this environment has on their attitudes and values regarding physical activity. Although research has shown that regular physical activity has the potential to significantly impact health and quality of life of people of all ages, our understanding of the underlying scientific basis of the relationship between physical activity and health and quality of life has emerged only in recent years. Despite the growing body of evidence concerning the benefits of physical activity, the levels of participation in physical activity remain low among all segments of the population, particularly among older adults.

This review of the literature concerning physical activity and aging will begin with a discussion of early research regarding the health benefits of physical activity. This review will then examine physical activity literature concerning the older adult population. The literature review will take into account some of the determinants of physical activity and what is known about barriers to, and facilitators of, physical activity. The review will examine the impact of community-level and environmental support for the physical activity choices of older adults. The review will also consider a number of recent studies which suggest that outdoor environments can be restructured and/or redesigned in such a manner as to assist older persons in incorporating more physical activities into their everyday lives. Several researchers have proposed social

ecological theories of the environment which may facilitate understanding how changing the environment can impact lifestyle choices.

Most of the existing research on aging and physical activity has adopted a positivist, quantitative research philosophy. However, in the last decade increasing attention has been focused on the potential offered by qualitative research approaches for increasing our understanding of the feelings and perceptions held by older adults concerning physical activity and what it means to be physically active. The literature review will conclude with a discussion of recent developments in qualitative research that relate to aging and physical activity, and discuss how the present study can contribute to understanding which factors influence the attitudes, values, and perceptions of older persons concerning the environments in which they live and how these factors influence their lifestyle choices.

2.1 EARLY STUDIES OF EXERCISE, PHYSICAL ACTIVITY, AND HEALTH

Some of the earliest studies of the relationship between physical activity and health employed epidemiological designs that established that individuals who worked in sedentary jobs were more likely to develop cardiovascular diseases and other health conditions than those who did not work in sedentary jobs. For example, in the classic study of the employees of London Transport, Morris, et al., (1953) found that there were significantly different rates of heart disease among bus conductors as compared with bus drivers. The traditional interpretation of the bus conductor study is that bus drivers were more sedentary than bus conductors, and that their relative lack of physical activity exposed them to an increased risk for the development of cardiovascular disease.

Interestingly, an equally appropriate interpretation of this study is that the work environment of bus conductors provided them with greater opportunities for lifestyle physical activity while they were at work. However, it took almost forty years after the Morris study for the examination of the environmental determinants of physical activity to become a serious topic of scientific inquiry. The relationship between physical activity at work and the development of chronic diseases and conditions was further examined by Paffenbarger's study of dockworkers in San Francisco (Paffenbarger, Hyde, Hsieh, & Wing, 1986). Their study of dockworkers found that individuals who worked in sedentary supervisory jobs were more likely to develop cardiovascular disease than individuals who worked in physically active jobs that involved loading and unloading ships. It is important to note that the Morris and Paffenbarger studies, and similar studies, established only that there existed an association between physical inactivity and heart disease. These studies were epidemiological in nature, so no causal relationship between exercise and heart disease could be inferred based on the evidence collected in these studies.

The Framingham Longitudinal Study sought to identify the common factors or characteristics that contributed to the development of cardiovascular diseases. The study followed a large group of individuals who had yet to develop symptoms of cardiovascular disease (Kannel & Sorlie, 1979). The researchers in this study examined a variety of physiological and biomedical parameters, and a number of lifestyle variables, in an attempt to enhance our understanding of the etiology of cardiovascular disease. The Framingham Study advanced our understanding of the relationship between active

lifestyle choices and heart disease, but did not specifically address the relationship between exercise and heart disease.

Given the findings in the epidemiological investigations by Morris and Paffenbarger, and the findings that emerged from the Framingham Study, the next logical step was for exercise scientists to conduct well-controlled training studies and determine whether previously sedentary individuals could improve their health status by participating in an exercise program (Paffenbarger, Hyde, Hsieh, and Wing, 1986). There was a need for research that systematically examined the impact of structured exercise under controlled laboratory conditions.

Among the earliest laboratory-based investigations of the effects of exercise training on health-related parameters were studies conducted at the University of Illinois by T. K. Cureton. Cureton and his colleagues used cross-sectional designs to demonstrate that young and middle-aged men who were physically active on a regular basis consistently exhibited healthier cardiovascular fitness profiles than sedentary individuals of the same chronological age (Cureton, & Phillips, 1964). During the next two decades, exercise training studies that built upon these findings were conducted. These studies involved individuals being randomly assigned to exercise or control conditions and groups, and the outcomes were compared using a variety of outcome measures (Burke & Franks, 1975; Faria, 1970; Leon, Connett, Jacobs, & Rauramaa, 1987; Paffenbarger, Hyde, Wing, & Hsieh, 1986). By the mid-1970's, a sizeable body of knowledge had been assembled, and the American College of Sports Medicine (ACSM) (1975) issued the first authoritative recommendations regarding the prescription of exercise for healthy adults. The ACSM Exercise Prescription Guidelines provided

recommendations regarding the frequency, intensity, and duration of exercise necessary for achieving reliable health benefits. The earliest editions of the ACSM Guidelines for Exercise Prescription tended to emphasize the amount and frequency of exercise required to elicit reliable changes in physiological parameters. However, over time there developed that gradual acknowledgement that exercise training had also had significant psychological and social consequences (Haskell et al., 2007). One limitation of the early research studies into the health benefits of exercise and physical activity was the tendency to study such relationships in relatively young and healthy individuals. It was not until the late 1990's that a sufficient amount of research on exercise in older adult populations had accumulated to the extent that the ACSM could issue a specific Position Stand that discussed the impact of exercise and physical activity on the older adult population (Mazzeo, et al., 1998).

2.2 Physical Activity and Older Adults

By the 1980's, several landmark studies had established that older adults could achieve benefits from participating in regular physical activity similar to those achieved by younger individuals. For example, early work by Spirduso and her colleagues had revealed that individuals who habitually exercise have significantly faster reaction and movement times than among sedentary age-matched controls, and that highly fit older people often outperform individuals thirty to forty years their junior on a variety of motor and cognitive measures (Spirduso, et al., 1983, 1988). Given the growing number of studies examining the relationship between exercise and the aging process, Human Kinetics Publishers decided to launch the first academic journal dedicated to the scientific

study of exercise and physical activity in the older adult population in 1992 (Chodzko-Zajko, 1993).

Several years later, specific guidelines for physical activity for older adults were published by the World Health Organization (WHO, 1997). The WHO Heidelberg Guidelines for Physical Activity for Older Persons was the first clear and unambiguous statement from the WHO suggesting that regular physical activity should be an integral component of healthy aging. The Guidelines stated that the evidence was clear: regular physical activity should be a part of the daily routine for the vast majority of older persons, and that regular physical activity is one of the most effective means whereby individuals can influence their own health and functional abilities (WHO, 1997).

The WHO guidelines defined physical activity as including all movements that were a part of everyday life, including work, recreation, exercise, and sporting activities (Organization, 1997). This particular definition was significant because it intentionally expanded the definition of physical activity beyond structured exercise to include all forms of movement, including everyday activities such as gardening, house cleaning, and other normal activities. The WHO Heidelberg Guidelines was the first official expansion of the concept of “traditional exercise” towards a broader, more inclusive, public health model of physical activity.

Another important aspect of the WHO guidelines was the recognition that physical activity benefits not only the individual but also society. The Heidelberg Guidelines called for an increase in research concerning how exercise and physical activity is impacted by community level factors (WHO, 1997). For example, the WHO report cited studies which suggested that participation in physical activity can both help

empower older adults and may even enable them to play more active roles in their communities (McPherson, 1990). The WHO Guidelines argued that promoting physical activity on the national and international levels would enable older adults to maintain their health and remain independent and self-sufficient for longer periods of time. In addition, the report argued that participation in regular physical activity could help stimulate new friendships and companionship (McPherson, 1994), help seniors amplify their social networks, and diminish stereotypic perceptions about aging and the elderly (WHO, 1997).

Shortly after the publication of the WHO Guidelines, the American College of Sports Medicine (ACSM) issued a Position Stand on Exercise and Physical Activity for Older Adults. Their Position Stand concluded that there were substantial physiological and psychological benefits associated with regular exercise and that virtually all older persons should be encouraged to be physically active on a regular basis (Mazzeo, et al., 1998). The ACSM Position Stand concluded that participation in a regular exercise and physical activity was an effective strategy for reducing and/or preventing a number of types of functional decline associated with aging. The Position Stand noted that clear evidence existed that older adults had the ability to adapt and respond to both endurance and strength training, and that endurance training can help maintain and improve various aspects of cardiovascular function, improve health status, and contribute to improving the quality of life (Mazzeo, et al., 1998).

By 2000 it was clear that regular physical activity offers dramatic health benefits to people of all ages and ability levels, and that these benefits extend throughout the entire course of life. Later research established that a positive relationship between

physical activity and factors such as functional capacity, motor ability, psychological health, cognitive functioning and well-being existed (DiPietro, 2007; Sarkisian, Steers, Hays, & Mangione, 2005; Spirduso, Francis, & MacRae, 2005; Taylor & Johnson, 2008). Despite these findings, most of the sixty-five-plus age group continued to lead relatively sedentary lifestyles (USDHHS, 1996).

2.3 Physical Activity Participation Levels

Nationally representative data indicate that approximately one-third of people over age sixty-five are sedentary, and that 54% of men, and 66% of women, age seventy-five or older do not participate in any physical activities (USDHHS, 2002). Despite the wealth of evidence about the benefits of physical activity, efforts to convince older adults to adopt physically active lifestyles have had little success.

Researchers who have attempted to understand why so few individuals have followed recommendations and guidelines about regular physical activity began to ask study why most individuals choose to remain sedentary, and how best to help them to change their behavior and become more physically active (Dishman, 1995). It soon became apparent that numerous individual and societal barriers exist make it difficult for many individuals to adopt or maintain a physically active lifestyles (Sallis & Owen, 1999).

A number of theories have been developed in an attempt to explain physical activity behavior, and many were derived from motivational theories initially developed by social psychologists. The major motivational theories include social cognitive theory (Bandura, 1986), the theory of reasoned action (Ajzen & Fishbein, 1980), the theory of planned behavior (Ajzen, 1991), self-determination theory (Deci & Ryan, 1985), and the

health belief model (Becker, 1974). The basic premise of many of these psychological theories is that individuals are active agents of their behavioral choices, and their cognitive beliefs, values, attitudes, expectations, motivation, and goals are related to their behavioral choices. Most of these theories identify a number of real or perceived barriers to physical activity that must be overcome before an individual can engage in persistent behavioral change. Several researchers (Dishman, 1995; (Sallis & Orleans, 2004) suggest that understanding these barriers is crucial before attempting interventions to promote physical activity in any population group (Sallis and Owen, 1999; Sallis and Orleans, 2004).

Sallis and Owen (1999) attempted to better understand some of the barriers and facilitators to physical activity, and identified a number of "determinants of physical activity" in order to attempt to understand the variety of positive or negative attitudes and values an individual might hold regarding physical activity. Sallis and his colleagues suggest that the major determinants of physical activity are: a) demographic and biological; b) psychological; c) cognitive and emotional; d) behavioral attributes; e) cultural and social; f) characteristics of the physical activity and g) physical environment. The Sallis model states that the determinants of physical activity cover a wide variety of factors that range from individual-level variables to a number of community and societal factors.

The Robert Wood Johnson Foundation responded in 2001 to growing national concerns about the impact of physical inactivity and sedentary living on the growing older adults population in America by convening a coalition of representatives from more than fifty national organizations and charging them with identifying barriers to physical

activity participation by older adults and with outlining specific strategies for overcoming these barriers. The National Blueprint for Promoting Physical Activity in Older Adults identified significant barriers to physical activity in the areas of research, home and communities, medical systems, public policy, and marketing and communications (Chodzko-Zajko et al., 2005). The National Blueprint report argues that developing a national strategy for increasing physical activity among the mid-life and older populations require interventions on multiple levels. One of the eighteen priority strategies identified in the Blueprint is increasing our understanding of how the outdoor environment can act as a barrier and/or facilitator for physical activity among the older adult population (Sheppard et al., 2003).

2.4 Locus of Control Theory

Rotter (1966, 1975) defined locus of control (LOC) as the general, cross situational beliefs people hold about what determines whether or not they are reinforced in life. Individuals who have an internal locus of control believe that the outcome of a situation is more under their personal control instead of being under the control of external factors. Hence, an individual with an internal locus of control is more likely to expect that their behavior will lead to a particular outcome. Individuals with an external locus of control believe that external factors play the major role in outcomes than do internal factors such as their individual decisions and actions. Therefore, individuals with an external locus of control are more likely to have a lower expectations that their behavior will lead to a particular outcome. In other words, an individual's behavioral outcomes can be predicted using their locus of control, given that the degree to which an

individual believes that they have control over a situation is related to their expectations that particular types of behavior will lead to particular outcomes (Rotter 1966, 1975).

Rotter stated that an individual's Locus of Control (LOC) operated on the latter, broader level, context and could be generalized across situations. An individual's locus of control (LOC) can be classified as existing on a spectrum of internality and externality.

The Health Locus of Control

Rotter believed that health behavior is closely intertwined with the personal experiences of individuals in given situations, and that an individual's locus of control beliefs concerning health are not as stable as an individual's generalized LOC beliefs (Wallston, Wallston, Kaplan, & Maides, 1976).

The literature concerning research on the relationship between locus of control and health-facilitating behavior as a whole points towards an internal locus of control as a mediating factor for actions taken to prevent health problems (Lefcourt and Davidson-Katz, 1991; Carlise-Frank, 1991). Bronson, et al. (1981) as cited in Wallston & Wallston (1982), found that individuals who scored high on the internality scale were higher on measures of health behavior, knowledge of health problems, and health plans than was the case for low scorers. Physical activity is one of several health-facilitating behaviors whose relationship to locus of control has been studied. Exercise is widely recommended for health promotion and primary-risk reduction among people who have not developed symptoms of cardiovascular illness. However, relatively few people engage in sufficient amounts of regular exercise for sufficient amounts of time to secure the benefits of moderate exercise for physical health (USDHHS, 1996, 2008). The attrition rate for both clinical and community-based exercise programs can be as high as fifty percent during

the first three to six months of participation (Brawley & Rogers, 1993; Dishman, 1988). Dishman, et al. (1980) showed that individuals with an internal locus of control were more likely to remain in a physical activity program than those who had an external locus of control. Sonstroem and Walker (1973) studied locus of control and attitudes toward physical fitness and found that those with an internal locus of control had more favorable attitudes towards physical activity, obtained significantly better fitness scores, and engaged in greater amounts of voluntary physical exercise than did those with an external locus of control (Carlise-Frank, 1991).

Both research on health-facilitating behaviors and research on individuals who attempt to overcome health-damaging behaviors have also shown that those with an internal locus of control are often better off than externals (Coan, 1973; Mlott and Mlott, 1975; Naditch, 1975; Williams, 1967). Unlike research on health-facilitating behaviors, however, the results of research on overcoming health-damaging behaviors has so far been less consistently in favor of internality. Research in this area has shown that externals and internals are equally successful in overcoming their deleterious health behaviors when placed in treatment programs that are consistent with their personal control beliefs (Carlise-Frank, 1991).

2.5 The Influence of Environmental Factors on Physical Activity Choices

Interest has grown since the late 1990s in the role that the social-physical environment plays with respect to lifestyle choices. However, environmental characteristics remain among the least-understood determinants of physical activity (Humpel, Owen, & Leslie, 2002) and the conceptualization and measurement of

environmental factors in active living research remains in the early stages of development (A. Bauman, Sallis, & Owen, 2002). Li argues that more research is needed on the impact of the community or neighborhood on the physical activity behaviors of older adults (Li et al., 2005).

The CDC Healthy Aging Research Network has conducted research that argues that less is known about the social and environmental correlates of physical activity in comparison with individual-level determinants and that additional research is needed on assessment, intervention, and evaluation of physical activity using a social ecological framework (Prohaska et al., 2006). The National Blueprint Report supports this contention and suggests that additional research should examine whether neighborhoods and local communities can be restructured so as to provide environmental support for physical activity (Chodzko-Zajko, et al., 2005).

Several recent studies have examined how the environment is engineered and how individuals interact with the environment (Duncan, Duncan, Okut, Strycker, & Hix-Small, 2003; Dzator et al., 2004). These studies have begun to describe the influence of the built environment on an individual's decision to be physically active, and have resulted in an enhanced understanding of the environmental determinants of physical activity (Committee on Physical Activity, 2005).

The National Blueprint Report built on the work of environmental and behavioral psychologists and public health scientists (Bauman 1987; Dishman 1995; Sallis 1996), and advocated in favor of the establishment of multi-level, ecologically valid approaches to physical activity promotion in which the individual is recognized as being only one

level in a complex hierarchy of determinants that include the individual, the community, and the built and social environment (Chodzko-Zajko, et al., 2005).

The most prominent theoretical model that has been proposed for examining individual/environment interactions is the Ecological Model of the Environment (Stokols, 1992). Sallis and Owen (1999) proposed that this general model of the environment be adopted in order to increase our understanding of the role the environment plays in facilitating and obstructing physical activity behavior. This theoretical approach suggests that a multi-level ecological approach is needed to understand the causes of sedentary behavior and to develop effective solutions that can overcome this problem.

The Social Ecological Theory of Physical Activity proposes that the physical activity behaviors of individuals emerge as a result of complex multi-level interactions between the individual and numerous environmental determinants (Sallis and Owen, 1999). The model suggests that behaviors occur in different places and at different times for a variety of complex, but predictable, reasons and that understanding these relationships can promote the creation of a healthy community environment that can promote healthier lifestyles (Stokols, et al., 1996).

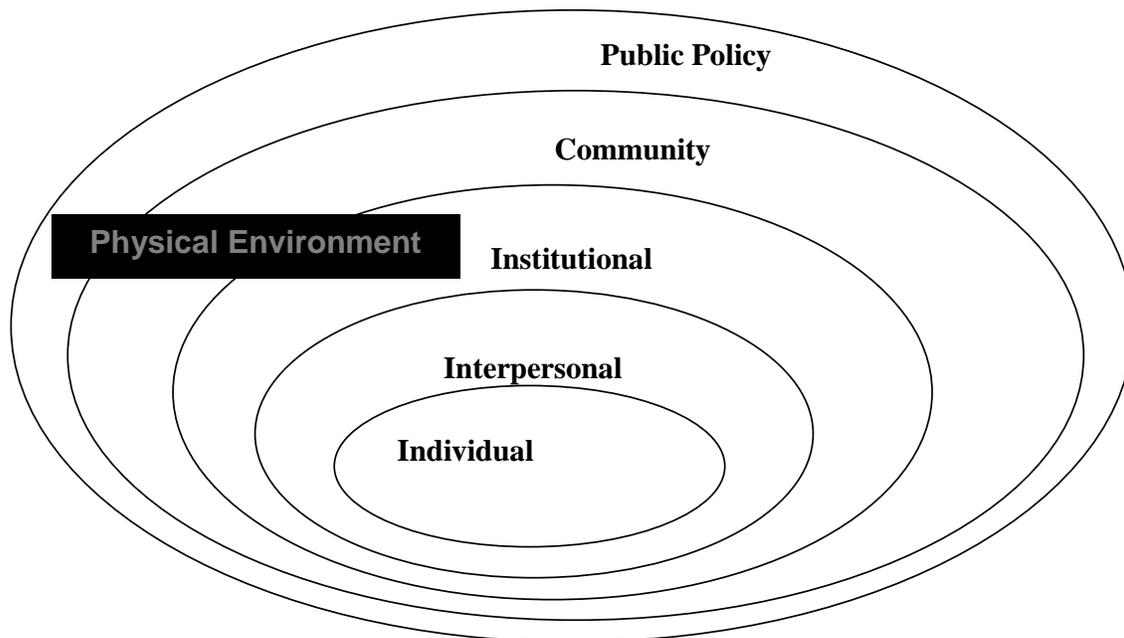


Figure 2 - Social Ecologic Model of Healthy Aging

Modified/ Sources: McLeroy et al., 1988; Sallis et al., 2006

Socio-ecological theorists propose that taking a multilevel approach to the study of behavior provides a comprehensive framework for understanding behavior change without losing the specificity that is found on each level. They argue that ecological models explicitly examine the extent to which inter-level relationships influence each other in a reciprocal manner (McLeroy, Bibeau, Steckler, & Glanz, 1988; Spence & Lee, 2003).

Several recent studies of environment/individual interactions suggest that convenient access to safe and affordable opportunities for activity are positively associated with residents choosing to adopt healthy lifestyles (Handy, Boarnet, Ewing, & Killingsworth, 2002; Humpel et al., 2002; Saelens, Sallis, Black, & Chen, 2003; Saelens, Sallis, & Frank, 2003; Sallis, Kraft, & Linton, 2002). People who live in “enriched” environments that offer multiple physical activity resources such as sidewalks, parks, and fitness clubs are more likely to be active (Baker, Brennan, Brownson, & Houseman,

2000; Giles-Corti & Donovan, 2002b). The other side of the coin is that environments that lack resources, or present barriers, such as unstable climates or a high incidence of crime, are more likely to be associated with physical inactivity (Sallis, Johnson, Calfas, Caparosa, & Nichols, 1997).

One way to evaluate the effect of environmental barriers is to quantify the resources available in a particular neighborhood or district as a means of assessing the likelihood that the residents will choose to be active (Sallis et al., 1997). The environmental determinants that have been shown to promote physical activity include accessibility, aesthetics, safety, comfort, and the variety and quality of available resources (Sallis & Owen, 1999).

2.6 Redesigning Environments to Promote Physical Activity

A number of researchers have suggested that it should be possible to intentionally redesign the built environment in a manner that would increase the number and variety of opportunities for physical activity available to community residents, and thereby increase the likelihood that individuals would choose to be physically active. Sallis and Owen (1999) suggest that several environmental variables influence physical activity participation, including the location and design of homes, roads, public parks and work places. They argue that studying these environments can help communities develop guidelines for engineering additional physical opportunities for their residents (A. E. Bauman, Sallis, Dzewaltowski, & Owen, 2002; Handy et al., 2002; Humpel et al., 2002; Sallis et al., 1997). Research results have emerged that are consistent with this theoretical approach, and these results show that neighborhoods with pleasant green environments,

pedestrian traffic signals, well-designed sidewalks, and safe places have been shown to be associated with higher levels of physical activity participation (Giles-Corti and Donovan, 2002). Sallis, et al., (1997) sought to assist the assessment of environmental support for physical activity, and developed an instrument for identifying barriers to, and facilitators of, physical activity in three common environments (homes, neighborhoods and commercial areas). Sallis found that those who live and work in enriched environments were more likely to exhibit active lifestyles.

One strategy that has been proposed for the purpose of improving environmental support for physical activity has been increasing access to green spaces and public parks in urban areas. Several benefits have been shown to be associated with the presence of parks in a neighborhood. Parks are associated with decreases in crime, reductions in the costs of health, increases in productivity, and reduced pollution (Sallis, Johnson, Calfas, Caparosa, & Nichols, 1997). A literature review by Broomhall (1996) concluded that numerous observable factors have the potential to influence the use of public open spaces. These include the quality and quantity of space, characteristics of potential users (e.g., socioeconomic status, age, gender, and ethnicity), psychological factors (e.g., self-efficacy, perceived barriers) that influence personal preferences; access to competing local facilities (e.g., recreational centers), the match between park attributes and the needs of local users, park maintenance, and perceived safety. Qualitative and quantitative studies suggest that factors that influence the use of public open spaces include perceived proximity and accessibility (i.e., the absence of major roads), aesthetic features of the park such as the presence of trees, water (e.g., a lake), wildlife, park maintenance (e.g., irrigated lawns), park size (which in turn provides variety and opportunities to “lose

oneself”), and the availability of amenities such as walking paths (Broomhall, 1996; Burgoyne, Woods, Coleman, & Perry, 2008; Carnegie et al., 2002; Lockett, Willis, & Edwards, 2005; Michael, Green, & Farquhar, 2006).

An interdisciplinary group of researchers from the University of Illinois has been examining the feasibility of redesigning the outdoor space around a retirement community in a manner consistent with this general theoretical approach. They are doing so in order to develop an outdoor environment that is more attractive and inviting to older adults who live in the facility (Park, et al., 2005). The New Active Green Environment (New AGE) project seeks to enhance our understanding of how older adults relate to the environment around them and whether changes in the environment encourage residents to adopt lifestyles that are more physically active.

New AGE is a design program for developing therapeutic recreational facilities in conjunction with attractive greenscapes (Park, et al., 2005). The New AGE program specifically focuses on improving the health and quality of life of older adults who live independently, or who live in retirement communities or convalescent facilities, by providing them with better opportunities for physical activity in outdoor settings. The project envisions altering the environment so as to provide easy-access green walkways, flower gardens, exotic plants, bird feeders, rock gardens, lawns, and patios. The researchers proposed that the New AGE project is an example of how the development and application of new technologies and novel therapies for human health and wellness can help promote healthy lifestyle choices and improve health and the quality of life. Their expectation is that this design can change the configuration of the outdoor environment and encourage residents to spend more time outdoors and find enjoyable

ways to incorporate more physical activity into their everyday lives (Giles-Corti & Donovan, 2002a; Li et al., 2005; Owen, Humpel, Leslie, Bauman, & Sallis, 2004). The New AGE researchers stress that the primary goal of the project is not to develop and test yet another new physical activity program for older adults. Their study instead aims to increase our understanding of how older adults react to changes in the outdoor environment near their residences and the implications of these changes for future environmental redesign.

The New AGE project is generally consistent with a number of recent efforts to examine how the environment influences lifestyle choices. Hooker, et al. (2005) have suggested that it may be useful to sub-divide the environment into two sub-categories: *physical-environmental factors*, and *social-environmental factors*. They propose that the physical-environmental factors associated with physical activity include the presence of automobile traffic, sidewalks, trails, recreation facility, animals, and neighborhood aesthetics (Sallis, Kraft & Linton, 2002). Social-environmental factors associated with physical activity include several forms of community support such as active neighbors, community norms of physical activity, trust in neighbors, and safety (Hooker, Wilson, Griffin, & Ainsworth, 2005; Kirtland et al., 2003). Their research into the environmental determinants of physical activity assessed the environment both objectively and subjectively. The objective environment is generally assessed by means of non-participant observation or by using geographic information system technology (GIS) to map neighborhood amenities (Kirtland, et al., 2003). By contrast, the perceived environment is assessed using the participant's self-report, neighborhood characteristics or focus groups. Hooker and his colleagues (2005) suggested that there is a need for more

research that examines the subjective perceptions of individuals concerning the physical and social-environmental factors in order to better understand how these subjective perceptions influence how we formulate behavioral choices.

A review of the literature in this area suggests that individual perceptions of their environments may indeed influence physical activity behavior. Duncan, et al., (2005) reviewed sixteen studies, all of which concluded that the presence of recreational neighborhood-facilities sidewalks, local shops and services, and limited traffic is positively associated with physical activity behavior. Parks and colleagues (2003) found that urban and lower-income residents are more likely to report using neighborhood parks, streets, and mall as places for physical activity than are suburban and rural residential groups. Some of the most active adults are those who live in mixed-use neighborhoods (e.g., retail stores located within residential areas) (M. J. Duncan, Spence, & Mummery, 2005; Fisher, Li, Michael, & Cleveland, 2004; King et al., 2006; Parks, Housemann, & Brownson, 2003). However, these studies suggest that the influence of the perceived environment on physical activity may vary from location to location (Fisher, et al., 2004; King, et al., 2006; Parks, et al, 2003). Among older adults, those who live in neighborhoods with more attractive aesthetics (trees, no litter) and have access for walking purposes (walking paths, sidewalks) are twice as likely (sixty-seven percent) to live up to public health recommendations for physical activity than those with less aesthetically pleasing neighborhoods (King, et al., 2006).

One of the primary goals of the present study is to increase our understanding of how older adults perceive the spaces around their dwellings and whether they react positively or negatively to changes that are made to the environment. In order to achieve

this goal, this study proposes to compare the perceptions of older adults regarding the environments around the retirement communities in which they live and the impact that this environment has on their attitudes and values towards physical activity.

2.7 Qualitative Research In Physical Activity Research

Qualitative research designs are being used more frequently in the field of aging and physical activity. Such designs represent an attempt to expand the range of knowledge about physical activity and aging by including dimensions of physical activity that are not easily addressed by traditional experimental research designs (Markula, Grant, & Denison, 2001; Pope & Mays, 1995; Spirduso et al., 2005). Spirduso (1995) argues in a manner consistent with this philosophy that because life experiences are multi-dimensional – meaning that they contain physical, mental, social and spiritual dimensions – it is important to attempt to include all of these dimensions in investigations of aging, function and physical activity.

Most of the research described in this literature review is founded on a positivist, quantitative research philosophy which involves researchers attempting to quantify the benefits of regular physical activity using group-based, experimental research designs in which exercise is manipulated by the investigator and the effects of exercise assessed by comparing differences in mean values between exercise groups versus sedentary groups for a particular outcome measure. Sandra Cousins and Bevan Grant argue that, despite the wealth of knowledge that has emerged from the use of traditional quantitative research methods, an alternative research paradigm that shows promise focuses on examining the feelings and subjective perceptions of older adults regarding physical activity and what it means to be physically active (Cousin and Grant, 2001).

Cousins and Grant (2001) argue that qualitative research designs that invite older adults to share their feelings about why they choose to be active can complement more traditional positivist approaches and have the potential to enhance our understanding of why some older adults remain resistant to traditional physical activity interventions. Cousins and Grant (2001) argue in favor of the adoption of post-positivist research philosophies (Dezin & Lincoln, 1994; Guba & Lincoln, 1994) that allow scholars to analyze issues concerning physical activity and aging by going beyond readily identifiable and quantifiable resources. Guba and Lincoln (1994) argue that qualitative methods give the investigator permission to access information about the essential nature of the phenomenon under investigation.

The current investigation made use of a rigorous qualitative research design to explore the perceptions of older adults regarding the environment around the retirement communities in which they live and the impact this environment has on their attitudes and values towards physical activity. We used a series of structured interviews and focus groups to explore the feelings that older adults report concerning the environments surrounding their residences in order to understand how these environments serve as both facilitators and barriers to physical activity.

An interview guide for the focus groups and structured interviews was developed using a theoretical framework adapted from the Social Ecological Model of Physical Activity, Sallis, et al., (2006). The interviews began with questions geared towards understanding an older person's intrapersonal relationship with physical activity. The next step was a series of questions designed to explore the individual's attitudes and values concerning their perceptions of the environments in which they live and its importance to their overall quality of life. Questions were asked about why they chose to live in their current location and how they feel about the places where they live. In addition, participants were encouraged to critically compare the places where they currently live with locations they lived previously. The interviews sought to explore the degree to which perceptions about specific environmental factors facilitate or discourage physical activity behavior. Such topics include: available facilities, safety, access, weather, and time and how these factors impact on the decisions of older people to spend time outdoors. Finally, the interview asked older adults to discuss the extent to which the policies and procedures that regulate the facility and/or neighborhood in which they live serve to facilitate and/or discourage physical activity participation and the use of outdoor space and facilities. For example, questions were asked about the location and availability of nearby facilities and open spaces, the presence, cost and availability of physical activity programs, and questions about staff support for physical activity, and about informational campaigns to promote physical activity and healthy lifestyles. Inviting older persons to tell their personal stories about how their feelings about physical activities in general, and the places surrounding the places where they live was major part of this study, which this researcher hopes will contribute to an improvement in our understanding of the multi-level complexity of social ecological determinant of physical activity among older adults.

CHAPTER 3

METHODS

This chapter describes the methodology used in the study. The section begins with a description of the participants and data collection sites. Next, the procedures used for data collection and analysis were discussed. Finally, a series of research hypotheses were proposed.

3.1 PARTICIPANTS

The purpose of this study was to examine how outdoor environments impact the perceptions, values, and behavior of older adults. We conducted a qualitative research study which involved interviewing older adults living in three retirement communities in the Urbana-Champaign, Illinois area. Our goal was to assess the extent to which attitudes of older adults towards physical activity, and their subsequent physical activity choices, are influenced by their perceptions of the immediate environments surrounding the communities in which they live. Accomplishing this involved interviewing older adults living in a diverse range of senior housing options in a variety of different settings.

The first location selected for study was Clark-Lindsey Village in Urbana, Illinois. Clark-Lindsey Village is an affluent, private retirement community. Extensive efforts have been made to construct a purpose-built outdoor environment in order to promote physical activity and other active lifestyle choices for the older adult residents. The second location selected was the Champaign County Nursing Home. This is a public facility that serves relatively low-income seniors. It offers services and housing for older adults. Champaign Nursing Home is located close to a number of public playing fields and other open green spaces. It differs from Clark Lindsey Village because none of these spaces were designed with

older adults in mind. There are no specialized programs or facilities available to the older adult residents who live in the Champaign County Nursing Home.

The final location selected for this study was Inman Plaza Retirement Community. Inman Plaza is a private retirement community located in a multistory urban location in downtown Champaign Illinois. Inman Plaza differs from both Clark Lindsey Village and the Champaign County Nursing Home in several ways: (1) It does not possess a garden or greenspace on the premises and is located relatively far from the nearest city park; (2) It is located relatively close to a downtown area with a number of shops, services, and restaurants within walking distance. There are no easily accessible shops and services within walking distance of either Clark Lindsey Village or the Champaign County Nursing Home.

The Clark-Lindsey Village mission statement describes their facility as a “non-profit charitable organization, that will continue to be the premier retirement community for active seniors...”(Village, 2009). The Clark-Lindsey campus spans nearly twenty-eight acres of meadows and prairie lands. It connects to the Urbana Park District’s Meadowbrook Park, and features a farmstead, herb garden, walking trails, sculpture garden, and some play structures.

The Champaign County Nursing Home defines its mission as seeking to “...provide compassionate long-term, rehabilitative, and memory care services reflective of the community we serve...” (Home, 2009). Their statement specified that they subscribe the following philosophies: “Each living area is designated as a Neighborhood where residents enjoy the creature comforts of our beautiful surroundings and the social benefits of living in a closely-knit community.” The Champaign County Nursing Home is located in the middle of a public complex of several other county departments such as the Champaign County Humane Society, the Champaign County Regional Planning Commission; Champaign County Mental Health, Champaign County Juvenile Detention and other facilities. This complex is surrounded by sports fields used by the Urbana Park District.

The Inman Plaza Retirement Community describes its mission as seeking “to serve those persons in need of supportive services, their families and the communities in which they live. It is our belief that by encouraging people to live with dignity, choice and self-determination, we enable present and future generations of a growing population to adapt successfully to changing needs...” (Plaza, 2009). Inman plaza is located in downtown Champaign near the shopping and restaurant district. Their website states that residents will find theaters, senior centers, post office, library, banks, public transportation and a city park within easy walking distance.

Four older adult residents were selected for interviews at each of these three locations. These individuals were selected using a purposeful sampling procedure that was designed to identify individuals with a range of different attitudes and perspectives regarding both physical activity and the outdoor environment (Patton, 2002). Patton (2002) suggests that when using this approach, cases should be selected for study because they are information rich and illuminative, meaning that they offer useful manifestations of the phenomenon of interest. The goal of sampling is to provide insights into a phenomenon, and not generalize about a population bias on a limited sample (Patton, 2002).

The residents of each facility were contacted and invited to participate in the study. They were asked to read and sign an informed consent form prior to data collection. The informed consent form explained the benefits and risks of participating in the project. The participants were assured that they would not be specifically identified by name in the study and that their confidentiality will be protected as far as possible. Interviews were used to collect data from each of the selected facilities.

3.2 Interviews

One formal interview was conducted with each participant of the selected facility. Each volunteer was asked to participate in an interview consisting of about twenty-four research questions. The interview was semi-structured and open-ended. The questions concerned their attitudes towards physical activity and the outdoor environment that surrounds their facility. Each participant was asked the same standardized questions, and they were also asked additional questions based on their individual responses (Patton, 2002). The interview took approximately sixty to ninety minutes, and participant responses were tape-recorded for later transcribing. All of the interviews were transcribed verbatim and all of the tapes will be destroyed after the study is completed. All of the written reports referred to the participants using fictitious names. A written guide will be used during the interviews to help focus the discussions (Patton, 2002). The interview questions are included in the appendix.

3.3 Data Analysis and Questionnaire Construction

Both inductive and deductive approaches were used for interpreting the interview data. During the early stages, the data were analyzed employing an inductive approach to analysis with the goal of discovering patterns, themes, and categories in the data (Patton, 2002). Patton (2002) suggests that when using this approach, findings emerge from the data through the interactions of the analyst with the data (Patton, 2002). Once patterns, themes and/or categories have been established through inductive analysis, the final, confirmatory stage of qualitative analysis is more deductive in nature so as to test the hypotheses identified in the present study.

The interview data was analyzed in two steps. First, descriptive information about each participant's age, sex, education, and living experience was determined. Next, interviews were conducted in order to determine the responses of the people in the facility in relationship to physical activity and the outdoor environment.

Questions related to perceptions regarding the environment around the retirement communities and the impact this environment has on attitudes and values towards physical activity were developed using the theoretical framework described in Sallis' Social Ecological Model of Physical Activity (2006). The questions were divided into five categories, including descriptive information, intrapersonal relationship to physical activity, perceived environment, physical activity behavior, and policy environment.

Before beginning to collect data, the interview questions were tested for reliability in interviews with two people who meet the same qualifications as the research participants. These test interview participants belonged to facilities different than those involved in this study. The questions were modified as necessary in order to improve their reliability, clarity, and accuracy based on the results of the test interviews.

Coding procedures for all written documents were based on recommendations from Strauss and Corbin (1998), who suggest a detailed form of analysis during the early phases of an investigation in order to discover categories and uncover relationships between categories. All of the documents were examined line-by-line and information was sorted into categories generally related to organizational changes (Strauss & Corbin, 1998).

3.4 Credibility, Dependability, and Trustworthiness

Triangulation and member checking were used to ensure credibility, dependability, and trustworthiness of data (Lincoln & Guba, 1994). As regards the member checks, the participants were invited to clarify events and comment on emerging themes. The investigator checked the notes and transcripts from the interviews with the participants in order to exclude

the influence of the preconceptions of the investigator. To establish the trustworthiness of a qualitative study, Lincoln and Guba (1985) have suggested that it is important to examine the credibility, transferability, dependability, and confirmability of the data. The procedures recommended to achieve these goals are as follows; *Prolonged engagement* – the researcher must spend enough time to get good data. The collection of qualitative data requires building trust with participants, learning the culture and developing an in-depth understanding about what is salient for the study. For this study the researcher spent at least six months volunteering in each facility to build the trust within the participants and administrators; *Triangulation* – researchers make use of multiple and different sources, methods, investigators, and theories to provide evidence. It requires the use of three independent sources of data to support the conclusion. For this study, this process was used with the help of two other researchers to establish agreement within the themes encountered; *Member checks* – the researchers solicit participant's views of the credibility of the findings and interpretations. This technique is considered by Lincoln and Guba (1985) to be the most critical technique for establishing credibility. Presenting the participants with the conclusions goes much further and provides a confirmation of the analysis. For this research the investigator checked the notes and transcripts from the interviews with each of the participants;

Thick descriptive data – allows readers to make decisions regarding transferability, because the researcher has to describe the setting and context of the study. A thorough description in the report is needed so readers can both understand the study and assess whether the setting and results will transfer to their setting or future research. For this study, thick descriptive data are provided in the results chapter.

In summary, according to the recommendation of Krefting (1991), I attempted to consider all four of the above criteria for qualitative research rigor. The following procedures were followed; for credibility - prolonged engagement, member checking, and triangulation was performed; for transferability – thick descriptive data were collected and reported; for dependability – thick descriptive data and triangulation was used; and for confirmability – triangulation and member checking was conducted.

3.5 Research Bias

In qualitative research this is a problematic concept, since by definition the qualitative researcher is part of the process, and all researchers are subject to personal opinion and bias. This human factor has been said to be both the greatest strength and weakness of qualitative method. A researcher's background and position will affect what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate, and the framing and communication of conclusions (Malterud, 2001). There is an incorrect assumption among many researchers that bias or skewedness in a research study is undesirable. As Malterud (2001) writes: "Preconceptions are not the same as bias, unless the researcher fails to mention them" (p. 484). Different researchers will approach a study from different positions or perspectives. This might lead to the development of different, although equally valid, understandings of a particular situation under study. While some may see these different ways of knowing as a reliability problem, others feel that these different ways of seeing provide a richer, more developed understanding of complex phenomena (Bary et al., 1999). Understanding something about the position, perspective, beliefs and values of the researcher is an issue in all research, but particularly in qualitative

research where the researcher is often constructed as the 'human research instrument' (Koch & Harrington, 1998).

One of the steps to reduce research bias is to design a study to include multiple investigators who may have a variety of different backgrounds and perspectives. This can foster dialogue, lead to the development of complementary as well as divergent understandings of a study situation and provide a context in which researchers' - often hidden - beliefs, values, perspectives and assumptions can be revealed and contested. For this research at some locations, an independent interviewer was selected rather than the primary investigator in order to diminish the influence of prior personal interactions between the PI and the interview participants.

CHAPTER 4

RESULTS

4.1 Demographic and Descriptive Data

The purpose of this study was to obtain a rich description of how older adults perceive the manner in which the environment near the places where they live impacts their attitudes, perceptions, and behaviors related to physical activity. Our goal was to identify and interview four individuals in each of three retirement communities. We selected three different retirement communities in the Urbana-Champaign area due to their unique and distinct environmental attributes. Two of the locations were Clark-Lindsey Village (CLV) and Champaign County Nursing Home (CCNH). We pre-screened up to twelve individuals at these locations during preliminary interviews in order to identify the “information rich” cases we sought to select for inclusion in the final analysis. The third location was Inman Plaza, a location for which preliminary screening was not possible due to the small number of residents. The four Inman Plaza residents interviewed ultimately wound up being selected as cases for analysis. A brief description of the locations and the participants interviewed at each location follows.

Clark-Lindsey Village is a nonprofit continuing care retirement community with one hundred and fifty-seven residents who are fifty to eighty-five years old. The activity coordinator of Clark-Lindsey Village assisted us with the identification and recruitment of the preliminary sample. Four residents were ultimately selected for inclusion in the study. Two male participants (ages eighty-one and eighty-seven) and two female participants (ages eighty-one and eighty-nine) were selected for in-depth interviews and subsequent data analysis. All of the participants were ambulatory. However, one of the male participants reported using a cane on occasion. The individuals we selected for inclusion in the study were

generally well-educated. Three out of four reported having completed college and one reported having completed high school. All four participants had been married and reported having had children. One was currently living with a spouse and the other three were widowed. The participants had resided at CLV for between three and a half years and fourteen years. The average was nine years.

Champaign County Nursing Home (CCNH) is a public facility with long-term, rehabilitative, and continuing care for seniors. This facility has one hundred and thirty-four residents who range from fifty to ninety-five years of age. The volunteer activity coordinator of the Champaign County Nursing Home assisted us with the identification and recruitment of the preliminary sample. Four residents were ultimately selected for inclusion in the study. Two female participants (ages eighty-seven and ninety) and two male participants (ages eighty-three and eighty-five) were selected for in-depth interviews and subsequent data analysis. All of the participants were ambulatory. One of the female participants reported using a walker on occasion. Participants had been residents at CCNH for between six months and four years. The average was one and a half years. Three participants had lived for many years in other retirement facilities before moving to CCNH. The individuals that we selected for inclusion in the study were generally well-educated. Three out of four reported having completed college and one reported having completed high school. All four participants reported having been married and having had children. Three participants were widowed.

Inman Plaza (IP) is a nonprofit continuing care retirement community that has a housing capacity of eighty-six residents. However, the facility is was facing foreclosure at the time of this study and the number of current residents has been substantially reduced. The residents range from fifty to ninety-five years old. Four of the residents agreed to be interviewed for this study. There were three male participants, ages fifty-four, seventy and ninety-eight, and one female participant, age ninety-six, who participated in-depth interviews

and subsequent data analysis. Two participants reported that they use walkers and one participant mentioned that he is legally blind. Participants had been residents at IP for between two years and seven years. The average was six and one-quarter years. The individuals selected for inclusion in the study were generally well-educated. Two reported having completed college and two reported having completed high school. Two participants reported having been married and having had children.

4.2 Identification of Major Themes

The structured in-depth interviews included questions about attitudes regarding physical activities in general, and questions about how environmental factors can enhance, or detract from, participation in physical activities. The theory-derived interview questions were developed based on the Socio-Ecological Model of Physical Activity developed by Sallis, et al., (2006), which focuses on topics related to physical activity and the environment in general.

The interview transcripts were coded, analyzed and sorted into major themes that addressed the perceptions and opinions of the participants concerning the environment and how it influences their attitudes and behavior regarding physical activity. A triangulation procedure was used to establish agreement between the researcher and two research colleagues in order to establish the reliability and validity of the emerging themes. The goal was to reach a consensus about which themes emerged naturally from participant answers. Three themes that emerged from participant interviews were: Individual Autonomy; Environmental Well-Being; and Lifestyle Choices.

4.3. Individual Autonomy: Motivation, Decision-Making and its Impact on Lifestyle Choices

Perceived personal control refers to the perceived ability to influence events within one's environment, and is associated with labels such as locus of control, intrinsic motivation, self-reliance, and independence. The locus of control is defined as an individual's general expectations about whether they are able to bring about a particular outcome (Rotter, 1975). An internal locus of control is characterized by the belief that outcomes are contingent on relatively stable personal characteristics. An external locus of control is characterized by the fatalistic belief that outcomes are determined by chance, luck or fate. This section will describe the perceptions of the residents concerning individual decisions, the choices they made in their lives and the impact of their decisions on their health and well-being. Each of the three retirement communities offered examples of individuals who appeared to be self-reliant, intrinsically motivated, and relatively independent when they made important decisions in life. However, each of the three retirement communities also offered examples of individuals who were less independent and more likely to rely on the advice of others when they made major lifestyle decisions. One example of such a lifestyle decision involves the reasons residents gave for moving into one of the three facilities.

Some individuals appeared to depend on the advice of others regarding where they should live. For example;

"The decision was not really mine. It was my son's..... He said I would be safe if I had someone else to help me. And I found I do have help and I don't have to do that alone anymore and you need that." (Male 87 CCNH)

"My cousin that doesn't associate with me put me in here. That doesn't make sense I know. It's a long story and goes back to my dad marrying my step-mom. That's where the tie-in is with my family. They took it out on me because they wanted my dad

to remarry my real mom... Maybe it was a little guilty, they felt guilty on their part so they thought they were doing me a good thing by putting me here.” (Male 70 IP)

“Then they determine that the patient needs just to go to the nursing home to get some therapy so they don’t stay in the hospital anymore and so they asked my wife where I would like to go and she named some places. A private nursing home here with her parents that bought into when they retired back in their day but that takes a lot of money but he inherited enough money that they could move into that. So she put that down and this place.” (Male 83 CCNH)

However, other individuals exhibited substantially more independence and self-reliance when they discussed their motives for moving into one of the three facilities;

“I think we just realized living in our home with the yard we had, because we had a big yard, was just getting to be too much for us. We needed to be some place where we did not need to take care of those activities.” (Male 87 CLV)

“Well first, I am one that works better when I have more people around me. My husband passed away, and I realized a couple years later that I wasn’t getting out among people, I was all by myself. And it makes a difference if you have to go out and assert yourself. So I was looking for somewhere like Clark Lindsey, where there’s things to do and people to talk to, exercise and all of that. This is a real nice place I think.... Well, I lived around here all of my life and I saw this being built. And I told my husband that someday I was going to live at Clark Lindsey.” (Female 81 CLV)

“ Well, I came here because my funds would last much longer. If I run out of money and outlive everything that I have coming in, then at least they won’t push you out. This is the last ditch. This is the last place I can be. You are supposedly supposed to get on Medicaid, which is state aid, but right now if you are around here, you know our state. They don’t pay their bills. If they get their money, and it is ninety days late,

that is amazing.” (Female 90 CCNH)

In short, interviews with older adults reveal that some individuals found themselves following the advice of their families or peers concerning where they would like to live, while others primarily relied on their own opinions. Similarly, as regards to motivation and lifestyle decisions, some individuals were self-reliant and independent about lifestyle choices, while some appeared to be dependent and reliant on others. It is important to note that that some of the individuals exhibited both behaviors, sometimes being self-reliant and autonomous but at others depending on the advice of others.

4.4. Environmental Well-Being: Environmental Influences on Health Behavior

An individual’s perception of the environment in which they live can influence their lifestyle choices. Environments enriched with multiple physical activity resources (sidewalks, parks, and fitness clubs) have a tendency to stimulate people to be active (Baker, Brennan, Brownson, & Houseman, 2000; Giles-Corti & Donovan, 2002). Conversely, environments that lack resources for physical activity or which present barriers to physical activity (traffic, high crime rates, trash), are more likely to be associated with sedentary lifestyles (Sallis, Johnson, Calfas, Caparosa, & Nichols, 1997).

This section discusses residents’ perceptions of their environments with the focus on whether they perceive their environments to be barriers to, or facilitators of, their health and well-being. This larger topic consists of three sub-themes: Green spaces, Urban and Suburban Environments, and Environmental Opportunities. Each of the three retirement communities offered examples of individuals who appeared to be optimistic and content with respect to the environment in the vicinity of their community. However, there were also examples of individuals who were less optimistic and more likely to be displeased with the appearance, or

lack, of resources in their retirement facilities and domestic environments.

Green Spaces

As regards the influence of green spaces on active living and active choices, the evaluations of attractiveness made by older adults appear to be context-specific and can vary according to the type of facility. Each of the three retirement facilities had residents who commented on the influence of the environment on their lifestyle choices.

Some individuals were pleased by the attractiveness of their living facilities. Below are positive comments made by residents about their facilities. One male stated,

“When it’s nice out, I walk as far as I can. I can go out and walk around the fish pond or to the garden and see what’s going on there. I used to, until fairly recently, I could walk a mile or so.” (Male 89 CLV)

“It would be nice but all of us know that the city of Champaign has a wonderful park district. The park district is in charge of all the flowerbeds and as you go around the city you will see a flowerbed here and a flowerbed there. That is the park district. Somebody has to take care of it.... About two blocks. University goes right by West Side Park. West Side Park is our oldest park. We have many parks.” (Male 98 IP)

“It was a pleasant environment. As I said, the landscape architecture was well done and the amenities and the buildings and so forth were well maintained and well kept.....I think it’s fairly important. Relative to a retirement community, that was essentially a high rise, and I’ve seen some of them, I find this much more attractive.” (Male 87 CLV)

“All the flowers and grass, they take excellent care. I used to drive by (Clark-Lindsey) because I lived not too far from here, and I always looked at their grounds. And it’s a pleasant place to walk. We have all kinds of sidewalks. I walk at Meadowbrook Park,

and around the perimeter, which is two miles, which is a nice walk when the weather is nice.” (Female 81 CLV)

“Well, it is very plain but it is quiet. I love the trees across the road. Your mind can kind of just wander. I enjoy even looking at the trees now.” (Female 90 CCNH)

However, others made negative comments concerning the aesthetic characteristics of their neighborhoods and facilities.

“I think they mow the grass too often. You hear the mowers every single day, running back and forth and back and forth, when it looks like there’s no need to mow the lawn at all. I was never very enthusiastic about the master garden. It’s nice, but the cost... they spent ten times as much as anybody should spend on something like that. Do you know how much they spent for that?” (Male 89 CLV)

“Sunday nights and Friday nights when there is good weather we get a lot of motorcycles. They are going on their runs when they go on Friday and then they come back Sunday night so you get them going and coming and that I don’t like. In the summer time most of these taverns around here or bars have outdoor music ... people get pretty noisy, but if you have your air condition going you don’t hear it too much but if you don’t need it, see we have individual air conditioning, but the halls and all the rooms downstairs are air conditioned, but we have window units and I have one in this room and one in my bedroom.” (Female 96 IP)

“I think it’s too bad that the city, of course they couldn’t keep this place for the little park because the people that live here would love to go across the street and just sit out there in the spring, summer, and fall; and even in the winter time. It’s too bad that the traffic is so bad you don’t like all those fumes so if we would have had that little park we could have stayed in there.” (Female 96 IP)

“I mainly look at that building over there, which I think is a county jail I believe...Also

the Juvenile correctional center is over in that area because this is all public land through here....With the lights at ground level and up top?I thought that was a Sheriff's office because he would need those short towers to send the things because this is a very large county so he has a lot of ground to cover.” (Male 83 CCNH)

“He (activity director) is in charge of planting trees and making it look better. It will be forty years before they get big enough. They are to hide the bad place. They planted a tree for me and all the leaves fell off of it. I told him he might all well forget that...I really don't care about too much. I would like to live close to the ocean. The last vacation my wife and I took was to Florida on the coast in a six-story hotel. It was within walking distance of a restaurant and across the street from a rest home. I told my wife that I would give anything to come here and live. At that time I didn't know I was going to live in one of these.” (Male 85 CCNH)

In summary, the interviews with older adults reveal instances where residents view the environments that surround their facilities as both facilitators of active choices and as barriers to physical activity. While some individuals find green spaces to be attractive and motivating, others expressed the point of view that investments in gardens and green spaces are a waste of resources. Many individuals held a more neutral position sometimes appreciating green spaces but also appreciating more urban environments as well.

Urban and Suburban Environments

The urban or suburban location of the retirement community impacted the perceptions of the participants in this study. The different degrees of attractiveness of each environment appeared to be context-specific. In all of the retirement facilities, we collected the comments of the residents concerning their perceptions of the availability of resources and the impact of

these resources on their lifestyle choices.

Some individuals appeared to be pleased with the relatively isolated suburban location of their community, for example;

“That was another reason I enjoyed moving here over some of the others in town, where there’s essentially no green space. If they want to get out and walk, they have to walk on city streets since there are no gardens. To me, I enjoy the green space. We have a friend up in the Chicago area who lives in a retirement community like this. It’s a twelve, fourteen story building in the midst of businesses and other things. And they come out, and they have other advantages. Like for instance, he could walk a block away and go to a café and get a cup of coffee. I have to walk quite a ways to walk to a café. But on the other hand, I have nice other walks. I would prefer this over the other residential areas. It is important to us.” (Male 87 CLV)

“It was a pleasant environment. As I said, the landscape architecture was well done and the amenities and the buildings and so forth were well maintained and well kept.....I think it’s fairly important. Relative to a retirement community that was essentially a high rise, and I’ve seen some of them, I find this much more attractive.” (Male 87 CLV)

“I go to the doctor and they have the MTD here. The handicapped bus comes and I mean that is one thing you can have. It is much less expensive. They get a bus for you here and that is expensive. The MTD handicapped bus is two dollars per trip, one-way. And then two dollars back. Four dollars for a round trip. And I don’t go that many places. I’m not interested in going shopping.”(Female 90 CCNH)

“I like to go out and look at the fish. I usually I have to have alone time, even though I want to be around people, but I need alone time. I will go out on the benches and sit and meditate. If you watch out the east here, if you go out when it’s dusk, a lot of the

time the deer come. We get to see a lot of wildlife here.” (Female 81 CLV)

However, other individuals appeared to be pleased with the centrally located urban setting of their retirement community, for example;

“Well, it is a multi-story building. We have this crystal room that they only use for special occasions really....Well, outside of the building; we have a restaurant across the street. It is a restaurant-bar, the Esquire, pretty good eating-place. You got Subway over at the bus terminal. It is fair; I don’t like everything they sell there. You can hop a bus if you have a bus pass and get to other parts of Champaign, Country Fair Mall out there and out at Wal-Mart...Yes, basically I like where I am at. It is centralized. I am only a block and a half away from [the] Mental Health [Center] so I can walk there all the time. I don’t like going there but.” (Male 54 IP)

“ It’s a historical building. It’s a well-built building but it’s getting old. They used to have a planter right below the windows, they use to put plants in the spring. Everything is cement around hereIt’s just got bars and restaurants and tea shops. There’s the Esquire and a little bar. What I like is the city bus will take you anywhere in Champaign Urbana. I don’t have to rely on the Inman bus.” (Male 70 IP)

“I was born here in Champaign. The hotel here is a couple of years younger than I am. This used to be a hotel and it was converted to retired housing about eight years ago which is when I came here, I am starting my ninth year. I came here because of the location. I am in the heart of Champaign and I can walk a few yards to the mass transit and I get free transportation. All seniors get free transportation. You have to go there and have your photograph take and then they give you a pass. When I had my sight I used it a lot but I don’t anymore. I haven’t been on a bus for four or five months.... Well I’m here because of where it’s located. I want to be near the mass transit. Many people came here because of the location because we don’t have cars.

Quite a few of my friends drive their own car.” (Male 98 IP)

Other participants commented on the negative aspects of the environment in both urban and suburban settings.

“When I first came here it was a lot different. This is a perfect building in a perfect location to be active. But the building is getting old and can’t be repaired. Seven years ago we had a lot of activities and everything was going fast and doing activities and we don’t have that anymore. We don’t know if this will be closed tomorrow, we’re just living day to day. The manager of the building, Betty, she said that they must give us notice before they close the doors.” (Male 70 IP)

“Oh, not much of course. In the first place people staying here are very much in strict movements you don’t just decide to go up town and do some shopping or something like that we are only a few blocks from the business in Urbana, but you have to get yourself from here to there. But the city busses, the MTD, don’t run out there. They got another special deal for handicapped people, they will make an exception, but you have to sign up for their program, you have to be on their list, you know, someone needing there help, they do charge a small fee that...”(Male 83 CCNH)

“When I was here before, at the back end here they have this little parking lot, it used to be a park and now it is a parking lot. I used to walk around that every day and sometimes twice a day but I couldn’t do it now and I don’t try to do it. We used to have two benches and there was a woman here that had the bench that’s on the back of where we go up and down the ramp and she insisted that the bench go around here on the Walnut street side. Well, if you go and sit on the Walnut street side you’re getting gasoline fumes and that is about all... I shouldn’t say a lot because I didn’t like cars coming by and young kids yelling at you or whistling and then it got so I was walking around and twice a bus stopped and wanted to know if I was trying to get to

the bus stop. I said I was just walking. As I said when I come back I decided I would walk just a little bit and maybe a whole block would be all I walk because I don't like to smell all the gasoline fumes.” (Female 96 IP)

The interviews with older adults reveal that although some individuals find urban settings both attractive and motivating, others consider a central urban location to be disturbing and dangerous. Some individuals consider isolate rural settings to be practical and utilitarian, while some consider them likely to increase the difficulty of transportation to nearby commercial areas.

Environmental Opportunities

A third factor relevant to participant satisfaction regarding their community concerns the availability of opportunities that are near their community but not directly provided by their facility. Comments about environmental resources, accessibility issues, and other opportunities emerged in several of the interviews. We found participant comments in each of the three retirement facilities about how environmental opportunities influenced their lifestyle choices.

Some individuals appeared to be delighted with the opportunities and amenities surrounding their homes, for example;

“I love it here. I love it here. Many, many reasons. One is I don't have to worry about shoveling snow in the winter time, I don't have to worry about picking up leaves, those are kind of minor things. I enjoy the living that we have here. And in some respects it's simpler than what we had before. And in other respects it's much busier than what we had before. But it's a different type of busy than what it was before. In some ways I'm

busier, I have more [of] my time I have allocated to do certain things, than I did before. I like the people here; I enjoy talking to the people. I enjoy the camaraderie that we have. Whenever we travel, we just lock the door and leave. If you have a home, you have to do a lot of preparation to leave. We love the view we have here. I guess another reason is because we have three children, and we cannot help but think about them and what we do. We know that by being here, we have relieved the anxiety that the children have about us. They don't need to worry about us nowadays. They know what the situation is here, and especially with Meadowbrook, the nursing home. They know that they don't have to worry. So that's one of the important things.” (Male 87 CLV)

“Because it was convenient, we lived only a mile from here. And we knew an awful lot of people at the university, or at Clark Lindsey. I was at the university for eighteen years... well we both, have been in the community for forty-fifty years.” (Male 89 CLV)

“Now I go out everyday, not everyday, but if its nice weather I go out during the morning or noontime or afternoon or early evening after dinner and stand outside on the ramp right by the door. I watch the busses, we have a lot of busses, Trailways, Greyhound, little bus that goes to Danville every evening, and I'll watch the people. We have a lot of traffic of people walking to get to the parking lot and I'll watch the people go along and the things that they do. There is one man who comes with his little sack of garbage and he will put it in our garbage. It is hilarious. It is interesting and there are certain street people that you know are going to be here till a certain hour. What they are doing is waiting for the people that smoke cause you can't smoke in the building and so the street people wait for the people who smoke to bum a cigarette.” (Female 96 IP)

“Kind of walk through the halls and look at the lounges. Everything is clean. And everything is light. This floor covering makes the room lighter. They have done a good job keeping the surroundings up. There are flowers around. They have some courtyards in between here.” (Female 87 CCNH)

However, other participants commented on the lack of environmental opportunities, for example;

“ When I first came here it was a lot different. This is a perfect building in a perfect location to be active. But the building is getting old and can’t be repaired. Seven years ago we had a lot of activities and everything was going fast and doing activities and we don’t have that anymore. We don’t know if this will be closed tomorrow, we’re just living day to day. The manager of the building, Betty, she said that they must give us notice before they close the doors.” (Male 70 IP)

“I doubt it was designed to encourage physical activity. It was probably an optimal way to get the number of rooms that they did... Well, I guess the fact that the corridors are so long it means I have to walk a lot more than I would ever walk, which I do with a cane and with pain” (Male 89 CLV)

The theme of these responses is that while some individuals appreciate the opportunities and amenities made available to them by urban settings, others feel that many amenities that were previously available have now deteriorated. There are other participants who appear to be relatively ambivalent by their environmental opportunities in regard to active living.

Given the perspective of the participants, three components emerged as the most important components of active living environments;(1) the neighborhood location must provide an attractive/motivational setting that promotes active choices; (2) both urban and

suburban locations can have both positive and negative environmental attributes; (3) and individuals who perceive positive environmental opportunities and amenities are most likely to express contentment with their retirement community.

4.5. Lifestyle choices: Attitudes, Resources and Opportunities

Regular physical activity can bring dramatic health benefits to people of all ages and ability levels, and this benefit extends throughout the entire course of life. A positive relationship between physical activity and factors such as functional capacity, motor ability, psychological health, cognitive functioning and well-being has been established (DiPietro, 2007; Sarkisian, Steers, Hays, & Mangione, 2005; Spirduso, Francis, & MacRae, 2005; Taylor & Johnson, 2008). Despite these findings, the overwhelming majority of the sixty-five-plus age group continues to lead relatively sedentary lifestyles (USDHHS, 1996, 2008; ACSM, 2009).

This section discusses residents' perceptions of their attitudes towards health with respect to whether they perceive their lifestyles as a barrier to, or facilitator of, their health and well-being. This topic consists of three sub-themes: Attitudes towards Physical Activity, Social Support, Resources and Opportunities. Each of the three retirement communities offered examples of individuals who appeared to be optimistic and content with respect to their decisions to be active and maintain a daily physical activity routine. However, there were also examples of individuals who were less optimistic and more likely to be displeased with the circumstances in which they live.

Attitudes towards Health and Physical Activity

The evaluations of older adults of their well-being appear to be context-specific. Each of the three retirement facilities had the residents who commented on their overall health and how it impacted their willingness to participate in physical activity.

Some individuals were generally pleased with their health and well-being. Below are positive comments that were made by residents about their overall health and their physical activity routines. One male stated:

“Very much, I feel that it has prompted me in a lot of ways to be active physically. I’ll numerate some of them... one thing I think it has helped me keep down my weight. I weigh not too much more than when I got out of the army, when I was twenty-four, and I weighed approximately the same amount as I do now. Other things I think the activity has done, especially the walking, I’ve been very happy with that. Back about thirty years ago, I had open heart surgery and a bypass, and in order to get the veins for the bypass, they took it out of my leg. What they do, they take out until they get the amount that they need that is good veins, because they can’t take out veins from your leg that aren’t good and suited there. They said they took out the minimal length from my leg, which was needed for the bypass surgery. And as such, I had no problem with blood getting to my feet. Many people who’ve had the surgery, they’ve taken so many veins out. That was one thing I am very happy about. Also, another time, about four years ago, I had an aortic valve replaced in my heart. Both times when I recovered from the valve replacement and from the bypass, I recovered fairly rapidly. And I think that was to do to the activity I had been doing beforehand, and the physical shape I was in at the time.” (Male 87 CLV)

“I think probably I am more physically active here because when I lived in the house, my husband did all of the yard work. And the reason we moved here is because could

no longer do the yard work.” (Female 89 CLV)

“Very important....It’s keeping me limber and I can move better. I have arthritis, you know, and it’s very good for it.... Well, I guess I knew it was important after my husband had heart trouble and I would go out for walks with him and go out to Provena for the exercise there. I saw the benefits that it does.” (Female 1 CLV)

“Well, I feel I would miss it if I didn’t have the exercise, strength and balance. I need that. Until recently I did walking around here and it got so I could walk less and less until now I really can’t walk much at all.” (Male 89 CLV)

“That keeps me from being obese. I’m strong about not getting obese. I want to eat the right foods and exercise to get the food that I get off. I’m very strict with myself about not being obese... I walk because I don’t have anything to get excited about. I will walk two hours at a time.” (Male 70 IP)

“Physical exercise is very important. I mean you keep your body in shape. At ninety-eight a lot of people say, oh my, are you still able to dress yourself. When you get my age many people don’t dress themselves. They have to have somebody come and help them. And they don’t feed themselves. When you pass ninety you lose an awful lot. I’m just very fortunate I play the piano all the time. For ninety years I’ve played... The most I have is getting up and dressing myself, trying to make my bed because of my pain and arthritis are so bad I just leave it. Of the past eight and a half years I have made my bed every morning. That is a lot of exercise for an old man. So I do the best I can.” (Male 98 IP)

“Well once you learn that you are able to walk around and move then you doesn’t ever to go back where you cannot be able to so therefore, no one has to tell you, you just do it automatically. It is just like eating food. It changes and you only get a limited time and then your time is up but you never change, you keep going once you

learn.” (Female 87 CCNH)

“Well, it is very simple. If you don’t use it you lose it. The reason I am in a wheelchair is because the cartilage in my knees is gone. The only thing you could do is to have knee surgery. Well I’m ninety years old, and I do not want to go through that nonsense. I am not going anywhere that I need to walk and this gets me wherever I want to go. I don’t really want to go very many places.” (Female 90 CCNH)

“Probably the main thing that we do, and notice I say we, because she participates in it with me, we walk. I tend to wake up early in the morning; we get up and get around. First thing we do is usually walk two miles in the morning. We walk around Meadowbrook Park. We did not walk this morning because of the rain, we walked inside the halls. But we walked for a good forty minutes, we try everyday, including weekends. We’ve been doing this for years, from the days that we met and started courting, we started walking. Luise lived in a dormitory and back in those days the girls were very controlled, they had to be in at a certain time. There was a big room where the men could come in, but they could not go up to the girls rooms. So instead of sitting there in the room with everybody else around, we would walk. And as we walked, we would talk.” (Male 87 CLV)

However, other participants commented on the negative aspects of their health and on the difficulty of participating in regular physical activity, for example;

“My worst fear is I’m going to wind up in a nursing home. I’ll be there sooner than I need to be. I’m only fifty-four years old, soon to be fifty-five and that’d be, being put into a nursing home to me is like taking ten years of my life away from me. I live a very sad, depressed life really. I had a family at one time and well more than once, I have been married four different times; two different women and I have three children, two daughters and a son. I have a lot of memories of my daughters (Male 54 IP)

“Well, they’ve declined of necessity because of my back and leg problems. I can’t walk and my balance is deteriorated so I can hardly move. I feel threatened, I feel like I’m going to fall frequently, so I’ve just had to limit physical activity.... It got so I couldn’t even stoop over to pick beans because my back, so I had to give up what I could do... I had to give up tennis because my back was getting worse and worse. And a lot of things I gradually declined doing because I couldn’t do them. So when we came out here, I never really was involved in physical activity except for some exercise”. (Male 89 CLV)

“I am getting older and weaker. I’m tough, I would learn to walk but I am too weak... Cause I am getting older and weaker. There are so many things that I can’t do. I used to be able to walk a hundred miles but I can’t any more. I’d sure like to.” (Male 85 CCNH)

“I’m not active like I used to be. I used to ride a bicycle. When I first came here I walked sixteen blocks every morning. I walked from here to Prospect and back, that’s eight blocks each way. When it was below zero, I didn’t walk. When I started falling down the police told me don’t walk this far. Stay close to your building. We can’t come out here and pick you up. That is why I stopped doing it. I don’t dare come out this far. If I fall someone will call the police.”(Male 98 IP)

“I walk with a cane. When I was out east I took physical therapy for a while so when I quit physical therapy they gave me a laminated copy of my exercises so I have exercises I do for about most of the time fifteen minutes a day but since I’ve had this infection I haven’t been able to do them very much”. (Female 96 IP)

“One thing that led me to come back here, I been in here five years ago when that time I fell at home and broke my ankle so they sent me over here the whole therapy and all the recovery and the three months again. And I thought, “well I won’t take a

chance on those falls anymore. I'll just sit in a wheelchair all day so I won't fall."

And that worked out fine for two or three years but eventually the toll on my body as the muscle tones went away since I wasn't doing anything to them. And then finally I began falling and again increased and finally I got to a point where I fell and couldn't get myself up. My wife had to call the fire rescue several times to come get me up off the floor."(Male 83 CCNH)

In sum, one characteristic of these responses is that although some individuals value their good health and engage in active daily routines, some remain physically active despite certain health problems, while some feel that their deteriorating health have negatively impacted their routines and they are consequently less engaged with physical activities.

Social Support

As regards individual perceptions of active aging, an important factor which emerged from the interviews was the presence or absence of social networks. The presence of strong motivational support can impact the perceptions of older adults regarding their ability to participate in activities and be healthy. The comments of residents concerning the availability of social support, and the impact of social support on their lifestyle choices, were collected in all of the retirement facilities that were studied.

Some individuals appeared to be pleased with the presence of a social network in their community. For example a male resident of Clark-Lindsey stated:

"They do as much as they can, I'm sure, Clara in particular. And the other programs that are involved, I guess to a large extent, Clara's been responsible for. She's done a lot to encourage people. Clara's a fanatic about physical activity. It's her job, but

she's enthusiastic about it. She tries to keep us from getting old, to the point she gets us tired doing it.” (Male 89 CLV)

“I have very few friends that are left anymore. I have two friends here in town. I have one woman and her husband, the four of us did a lot of good things together but now they're a lot younger than we were, but now they are both in their early eighties, but he still drives so they come and see me. There is a very good friend of mine, when I was here the first time; she was one of the people that worked here. She worked the desk and she is also a nurse. We became very good friends. We would go out to eat and different things in town...She comes and we go shopping; that's about the only time I'll go shopping when she comes and takes me.” (Female 96 IP)

“I think too one of the things that satisfy me with getting out and seeing things is I go to the dentist every three months and my dentist is a ways out. I go for my glasses and get them changed about every other year and going to the doctor makes me get out and I get long bus rides now. As I said, my friend comes in and gets me and we go shopping. If we don't go once a week, we go every ten days, never any longer than that.” (Female 96 IP)

“I think a great deal. They (The Activity Department) inform you of what is going on and encourage you to go and then when you go, and find out how interesting it is, you continue. They let us know and even come to the room and tell us about things. The activity department lets you know what is going on. You don't have to go but they let you know no matter what. Once you go you find that it is so interesting and nice and you have all ages of people going. Some very good entertainment.... because when I go down to the other dining room there are a lot of people that I know and I feel like we know their names but they are there when we go to the different activities and you share and feel like you are a part of the same leadership.” (Female 87 CCNH)

“I guess really don’t need somebody to tell me or to encourage me. I am self motivated. I help to keep my roommate going, she is ninety-seven. She is hard of hearing and she gets confused on reading the calendar. I tell her Irene this is what is going on. She asks if I am going and I say “no” but you can go. And I tell her what time it is and where it is. I am motivating her mostly. The activities are in the chapel or in the dining room, or in the activity room which is rare.”(Female 90 CCNH)

However, others reported a lack of social networks and/or motivational support from their peers and the facilities.

“The first seven years here I walked sixteen blocks every morning. Of course I miss it. But I have many physical problems. I have vertigo and I fell down the last time I walked and the police told me we can’t come out and pick you up any more and take you back, you shouldn’t come out here so I can’t go that far”. (Male 98 IP)

“They don’t make any effort at all. Well, what they do is, I get in the wheelchair and I can still wheel myself down to the dining room, which is a fair distance from here, so they make me do that. They don’t offer any help to get me from here to the dining room and back again. So I’ve been able to adjust to that and work into that, I do it myself now. I don’t ask anyone for help.... Even the activity department, which is the only one in this place that tries to get the residents to do anything at all outside of themselves, even they don’t, at least at my, they haven’t encouraged me to go outside.” (Male 83 CCNH)

“No, you can’t get out of here. I wanted to go for a walk one time and I asked the gal in therapy if I could walk outside and she said sure if somebody goes with you. It’s a safety thing. You can’t walk even in here by yourself. I can see why. I’m afraid I’ll fall and break something. I walked until the last two weeks I used that walker. My knees got weak.... We have one yeller here that screams all the time. At night she

doesn't bother me cause I sleep well at night. ...I share a table with three others. One can't hear, one can't talk and the other is a ninety-four-year-old woman and she can't see much. She can see me wave but not much else.” (Male 85 CCNH)

The main theme of these responses is that some individuals appreciate the motivational support they receive from family members, friends or staff that encourages them to be active and healthy. There are also other participants who are more indifferent to the presence or absence of peer support, as well as those who feel that the absence of social support has adversely impacted their involvement in physical activities.

Resources and Opportunities

A third factor relevant to the satisfaction of participants regarding their active aging concerns the availability of resources and opportunities that promote an active way of life. Comments about infrastructural resources and organizational opportunities emerged in several interviews. In each of the three retirement facilities, the comments of the participants revealed that the presence of resources and opportunities related to physical activity (e.g., activities classes, exercise equipments, parks) influenced their lifestyle choices.

Some individuals appeared to be thrilled with the opportunities and services surrounding their homes. For example a female participant from Clark-Lindsey mentioned:

“I think they do a lot- all that's necessary. We have all of the equipment necessary, so we don't have an excuse for not exercising. And I think Clara makes the exercise classes fun.” (Female 89 CLV)

“I participate in the exercise that Clara had three days a week, you know of that. Gardening, I have a garden out here. It's only a summertime activity, I wish it was more, but it's not. In the winter time, I don't particularly do anything to replace that,

and I guess I should, but I don't. Other outside activities that I get into, I still go up to the office a couple of times a week. I belong to several organizations that have luncheons during the week, I go to those meetings. There's a group of us who retired, people in our department, civil engineering, we get together once a week, so I go out for that. I go to Bible study class, so I get out to a number of activities. I'm on the Salvation Army Board, been going to that for years, they meet once a month. Oh, I also do shoulder exercises. I've fallen several times, primarily because I was wearing a pair of shoes that didn't resist friction on water. And I'd step on a sidewalk with water on it and fell. So after I do the exercise, I go into the fitness room and do exercises with weights, three times a week. It takes about ten to fifteen minutes."

(Male 87 CLV)

"Strength and balance. Strength and balance and tai chi pretty well takes care of every morning of the week. Tai chi is Monday, Wednesday, Friday and the strength and balance is Tuesday and Thursday... Tai chi is an hour, strength is a half hour, and the balance is a half hour. Also, they have exercise in the morning that's quite popular. I don't go to it because it's right before tai chi. They're chair exercises, and I think they're a half hour."

(Female 81 CLV)

"We have an activities department here in the home. I think all nursing homes have that. They are so stretched out because they're one group serving all the residents, I don't know how many residents there are here, but they don't have time to come around and visit each resident daily or anything like that. But they issue a public pamphlet monthly trying to update and telling the residents what the activities department has planned for the next month. I just got mine the other day."

(Male 83 CCNH)

"We have activities. Actually that is one of the most important things here. We have

activities where no one is forced to go; you can go if you want too. There is all kind of activities that go on. It is not required it is only if you want to go.” (Female 87 CCNH)

“They (The Activity Department) give you a change and opportunity to get up and walk but they are going to offer you something where you can improve as you go and it is up to you to accept and do the best that you can. They have everything to make you feel good; all the activities, there is some type of activity that if you don’t like singing there is someone coming that is going to help you exercise, you have games, and no one pushes you. You don’t have to go to anything if you don’t want to, therefore you can make a choice. If you feel like it then you can go and it helps you because there are different kinds of activity like religious then the games and we have the exercises and other things. I am working on the computer now and these two ladies volunteer to teach me and I love it! If you were not here, you wake up in the morning and there is nothing to do except look at television. We have good three meals a day and we don’t have to cook or wash dishes.” (Female 87 CCNH)

“ They (The Activity Department) have exercise everyday. There is one out here in the morning. I don’t know whether it is everyday but they have exercises all over the building. They are on the program; we have a calendar telling us everything. And they have musical projects and we play bingo. They have things to, things you call mind joggers. They are all things that make you think.” (Female 90 CCNH)

Other participants discussed the negative aspects of the resources and opportunities available in their home settings. These residents described the scarcity of activity programs. For example, a male resident from Champaign County Nursing Home said:

“They have an exercise thing that goes on at two-thirty every day. It used to be only every other day and this woman has got it to where she has gotten the time to where it

is every day for her. I hate it. It comes right at the best time for watching television and she wants to exercise.” (Male 54 IP)

“That the one big drawback of living here. We do not have the activities we should have. I used to volunteer in the nursing home here. They were very active painting or doing music. We do not have that here. The only thing we have here is playing bingo. Anybody can play bingo but you’re not learning anything. One reason my friend left here and went to a lovely new retirement home near her son in Indianapolis. She said they keep us so busy, we are so active. We do so many different things. Right now we are busy discussing about coin collecting. That’s what we miss here. Let’s face it, it’s money. We used to have an activity director. She was the one who called out the number on Bingo. They fired her because they want to save the money. So now we don’t have anyone. Maybe someone that lives here will get up and call the numbers. It’s very bad that way. We do not have an activity director. When I first moved here our activity director was wonderful. They would take us out on trips in the country in a van. No longer. Not if it costs money. We used to have at the end of each hall here a pantry. It would have little boxes of cereal and a variety of soft drinks. That was all removed to save money. They reason why is all the rooms are not filled. Somebody told me they are putting ads in the paper (to get new people). But people are going to the new places and we are the old. The only thing is if you want to be downtown here we are.” (Male 98 IP)

“Here I thought about joining the Y [YMCA] so I could use their pool cause they are suppose to be getting a new pool but it doesn’t seem like it to me or like it’ll be done for a long time and then it’s a problem of transportation. We have a bus here but he doesn’t run on Tuesday and Thursday afternoons.” (Female 96 IP)

“I see some of these people that come in here and live here and I feel sorry for them.

They can't stand to be with themselves very long so they have to be entertained or be doing something or go downstairs and sleep down there instead of [taking a] nap in their own room.” (Female 96 IP)

“One time, I use to hear, before I came to the nursing home, the first time about how they would, once and a while about once a month or so, take the residents that were interested out on a little day trip around the area and sometimes even all the way up to Chicago to the big mall. This was twenty or thirty years ago. I thought, well that's great! That's what they do to keep their residents interested and involved more in what's going on around them. But since I have been here there has not been one mention of taking myself out on one of these ventures. But again, we are on hard economic times and gasoline is expensive. I can understand cause they aren't getting any more money and its only by the increase of tax base, they say they are only trying to catch up with the cost of living which has already gone up before.” (Male 83 CCNH)

“They could start in by forming a committee that comes in and interviews all the residents here and see what our interests are, what we would like to do. They haven't done that yet. If they don't do that then I don't think there is any point in planning anything... Because if I'm not involved in something, I'm not interested in it cause I wasn't asked anything about preparing for it. ” (Male 83 CCNH)

In conclusion, interviews with older adults revealed instances of residents who view the physical resources and opportunities that surround their facilities as an influence on their lifestyle choices. Some individuals found the lack of structures and opportunities to be a barrier that failed to motivate them to become involved in physical activities. However, there are other interviewees who found that the presence of resources and opportunities functioned as facilitators. There are also participants who consider their resources and opportunities to

be facilitators to be active in some instances, and barriers in other occasions.

In summary, the interviews with residents of three retirement communities showed that there were three major components that appear to be important predictors of active aging: the presence of a social network with motivational components that support an active lifestyle; individuals who are optimistic about their health and well-being tend to be involved in active lifestyles more than those who are more pessimistic; and infrastructure and opportunities are necessary for stimulating healthy lifestyles among residents.

4.6 “Location, Location, Location”

The participants in our study were selected from three retirement communities in the Champaign-Urbana area. Each location had a distinct environment and organizational structure. The goal of this section is to provide a brief description of each of these three locations as reflected in the statements of the residents who participated in the interviews. The goal is not to evaluate the relative strengths and/or weaknesses of one facility versus another, but rather to present a brief summary of how residents in each location perceive their respective communities.

Clark-Lindsey Village is a relatively affluent, private residential community whose organizational structure, grounds, and facilities were described in very positive terms by the majority of residents interviewed by this researcher. The residents interviewed appeared to be exceptionally independent and optimistic with respect to their lifestyle choices. When asked about the neighborhood environment, many of the participants provided some positive feedback about the aesthetics of the outdoor spaces and the accessibility that their facility afforded them. Although there were some comments about the lack of nearby shops, restaurants and other urban features, the overall perception was that they regarded the

facility's relatively isolated, semi-rural location to be one of the facility's strong points. The facility provides opportunities, encouragement, and resources for residents to become physically, intellectually, and social active. When the older adults were asked about their perceptions of the importance of physical activity to them on the personal level, most of their responses were positive, which reflected the emphasis on "active aging" that pervades the facility. They attribute to this preference the presence of a strong social network that links residents, their peers, family members and staff members.

Inman Plaza is located in downtown Champaign, and is probably best thought of as a hybrid retirement community that combines certain characteristics of both privately-owned and publicly-funded facilities. The building is owned by a privately-operated company, but most of the residents are completely dependent on public funds to finance their rented apartments.

The residents shared a number of strongly-held opinions about how the structure and organization of their community had deteriorated over the years. The lack of facilities and services appeared to limit the options that were available to residents and restricted their latitude to make active lifestyle choices.

When the residents asked questions about their present location, the participants were unanimous in stating that they chose to live in an urban setting because they preferred having access to nearby shops, cafes, public transportation and other features of urban life. When they were questioned about their surroundings, there expressed mixed reactions to living in the downtown Champaign area. Some of the participants appeared to be physically active and engaged with the urban surroundings of their location. However, at the same time they also complained about the shortage of structural opportunities in the building and the lack of resources that were available to help them maintain active lifestyles. The Inman Plaza facility was in foreclosure when this research was conducted, and numerous services and programs

were either shut down or in the process of being phased out. These circumstances had a significant impact on the quality of life of the residents, and this information was frequently brought up during the interviews. It appears that the lack of motivation and encouragement on the part of staff members, family members and other residents had resulted in the generation of a sense of alienation that inhibited the development of a supportive social network. When the residents were asked about healthy habits, the majority of residents expressed strongly-held opinions about the importance of maintaining good health by sticking with a daily routine. Despite the presence of numerous obstacles in their facility and neighborhood, the residents were emphatic about the need to attempt to maintain active lifestyles.

The Champaign County Nursing Home is primarily a public facility that is surrounded by other public facilities. The participants who lived in this facility had been placed there either by close relatives or by acquaintances due to medical conditions or financial problems. The residents came from different backgrounds, so it is not surprising their attitudes about the facility were diverse. As regards the grounds surrounding the facility, the residents expressed some complaints about the aesthetic appearance of the locale. However, participants generally tended not to elaborate on their feelings regarding their surroundings. One item consistently mentioned by several participants was the location of the facility, which is situated in a suburban neighborhood. Their criticisms centered on the distance they needed to travel to get to an urban setting and on the difficulty they encountered in attempting to access public transportation. However, public transportation was available to come to their facility on request. Another factor brought up by the residents was the lack of interaction between the residents and the staff members, and the lack of support provided by family members, who consistently failed to become engaged with their loved ones' activities. The facility has an activity department that offers different activities each day. However, the participants said that these elements have failed to stimulate the development of a social network. As regards

resources and opportunities, the participants said that some of these activities were more inclusive, or that they needed to be changed in order to better satisfy their demands. The participants were asked about the importance of healthy habits, and the majority expressed enthusiasm about having physical activity induce them to perform their daily active routines. Some participants with health problems stated that these physical activities were no longer useful to them. Despite the presence of resources and opportunities provided by the facility, the perceptions of the residents regarding their environment were such that they had no sense of community, and they had no specific place where they could be physically active.

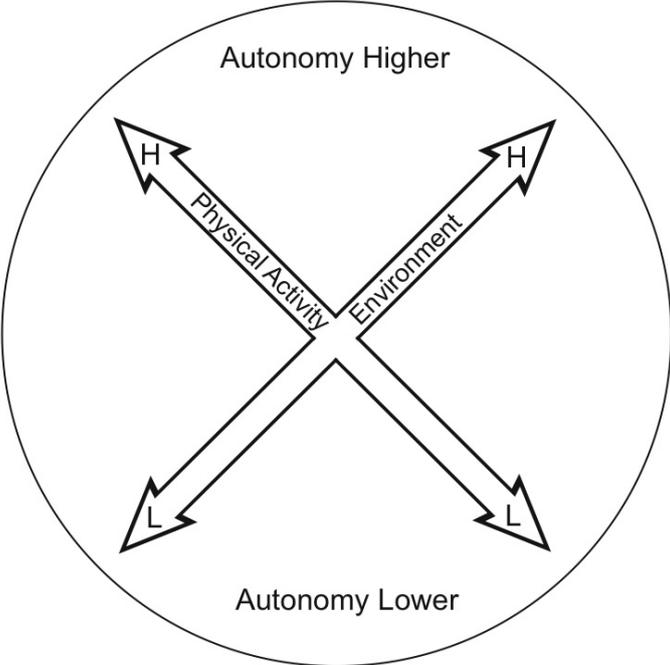


Figure 3 – Model of Autonomy, Physical Activity and Environment Continuum

In our initial proposal we suggested that our interviews would enable us to categorize participants' alignment in two dimensions; Physical Activity and Environment (see Figure 1 pg.11). Our data do suggest that some participants do indeed see more benefits of physical activity than others. Furthermore, others perceive the environments more or less supportive.

However, as a result of our interviews we believe that the model presented in the figure one should be modified in order to acknowledge the importance of the “autonomy” or “self-reliance” factors which emerged in our interviews. In figure 3, we show that decisions about physical activity and the environment are influenced by the degree of autonomy that an individual perceives they have. Our data suggest that older adults who are more autonomous and self-reliant are more likely to adopt physical activity lifestyle and take advantage of the environmental opportunities.

CHAPTER 5

DISCUSSION

The primary goal of this study was to examine the impact of environmental factors on the attitudes of older adults and values regarding physical activity. We selected three distinctly different retirement communities in a mid-sized Midwestern city. We used a qualitative research design for our interviews, and interviewed residents in each retirement community in order to improve our understanding of how individuals perceived their environments and the impact of those environments on their lifestyle choices. This study was inspired by recent research which suggested that selected attributes of the environment can impact perceptions of physical activity and physical activity choices among community-dwelling adults (King, et al. 2005; Fisher et al., 2004; Addy et al., 2004; Duncan, Spence, and Mummery, 2005). These studies have shown that physical activity can be increased as a result of improving the availability of, and access to, physical activity facilities and programs; and by providing environmental support for active lifestyles options (e.g., walking vs. automobile transportation; accessible neighborhoods with shops and services; parks, open spaces and bike trails; Duncan, Spence, and Mummery, 2005; Brownson, et al., 2001; Santos, et al., 2008; Saelens, Sallis, and Frank, 2003; Huston, Evenson, Bors, and Gizlice, 2003; Humpel, Owen, and Leslie, 2002;). These studies generally suggest that people who live in, or close to, enriched physical environments are more likely to be physically active than those who live in impoverished environments. Unfortunately, relatively little is known about what constitutes an enriched environment and whether some environments are more likely to be perceived as “enriched” by some people and not by others (Sallis and Owen, 1997; Troped, et al., 2001; Craig et al, 2002; Pikora et al., 2002). Furthermore, most of the prior research has focused on the general population, and relatively little is known about whether differences

exist between segments of the population of older persons who differ with respect to their likelihood of taking advantage of environmental opportunities for physical activity.

This study sought to obtain a diverse sample of older adults. An effort was made to recruit participants from three settings that have distinctly different surrounding environments. One community consisted of a highly-enriched green environment with landscaped gardens and walkways intentionally designed to promote physical activity (Clark Lindsey Village) (Park et al., 2005). The second community was located in a similarly isolated rural setting, but lacked landscaped gardens, walkways, and other outdoor facilities (Champaign County Nursing Home). The final location was a downtown urban retirement community that lacked green space but was located close to shops and services, and offered easy access to public transportation (Inman Plaza).

Our intent was to interview residents in order to attempt to understand how they feel about the environments that surround their communities and how those environments influence their perceptions and feelings about physical activity and healthy lifestyles choices. We used both the inductive and deductive approaches in interpreting the interview data. During the early stages of this study, the data was analyzed using an inductive approach to analysis for the purpose of discovering patterns, themes, and categories in the data. Three themes emerged from the interviews with participants: Individual Autonomy; Environmental Well-Being; and Lifestyle Choices.

The first theme that appeared was the degree to which an individual reported self-sufficiency and independence as being factors when they made important life decisions. In general, individuals who believed that they had a substantial degree of control over their lives were more likely to report positive attitudes and perceptions about a broad array of different factors. The designation selected for this theme was “Individual Autonomy.” This theme

addressed the perceptions of the residents concerning individual decisions, the choices they had made in their lives and the impacts of their decisions on their health and well-being. All three retirement communities offered examples of individuals who appeared to be self-reliant, intrinsically motivated, and relatively independent when making major lifestyle decisions. However, all three retirement communities also offered examples of individuals who were less independent and more likely to rely on the advice of others when they made major lifestyle decisions. The “individual autonomy” theme emerged as an important variable that impacted individual perceptions of the environment that we had not expected based on our review of the prior literature. However, the results of our study make it appear that this may be an important parameter which influences the likelihood that an individual will feel positive about their environment and the impact that the environment has on their lives.

Our finding that individual autonomy may be an important factor in the perceptions of older adults and their behavior is consistent with an extensive body of psychosocial literature concerning locus of control. Individuals who exhibit a high degree of internal locus of control perceive themselves to be autonomous actors more than is the case among those who exhibit a high degree of external locus of control (Rotter, 1966, 1975). Internal locus of control has been shown to predict positive health behaviors and positive health outcomes; (Dishman, 1980, 1988; 1990; Macdonald, 1970; Lee and Mancini, 1981; Manno and Marston, 1972; Saltzer, 1981).

The second theme which emerged from the analysis of interview transcripts was “Environmental Well-being.” This theme described how individuals perceived their environments and how those environments influence the quality of their lives. A large number of studies suggest that environments enriched with multiple physical activity resources (sidewalks, parks, and fitness clubs) tend to stimulate people to be more active (Brownson, Baker, Housemann, Brennan, Bacak, 2001; Giles-Corti & Donovan, 2002;

Humpel, Owen, & Leslie, 2002; Bauman, Sallis, & Owen, 2002; Li, et al., 2005; Duncan, Duncan, Okut, Strycker, & Hix-Small, 2003; Dzator, et al., 2004). Environments that lack resources for physical activity, or which present barriers to physical activity (traffic, high crime rates, trash), are similarly more likely to be associated with sedentary lifestyle choices (Sallis, Johnson, Calfas, Caparosa, & Nichols, 1997).

Our study identified residents who perceived their environments as being both barriers to, and facilitators of .their overall health and well-being. Three key environmental attributes were consistently identified during the interviews; (1) the presence or absence of “green spaces”; (2) urban vs. rural characteristics; and (3) supportive neighborhoods. All three retirement communities offered examples of individuals who appeared to be optimistic and content with the environments in the vicinities of their communities. However, we also found examples of individuals who were less optimistic and who more likely to be displeased with the appearance of their communities and with the lack of resources available in their retirement facilities and domestic environments.

Our findings are consistent with numerous studies that have shown that the environment can both positively and negatively impact lifestyles choices, including physical activity behavior (Giles-Corti and Donovan, 2002; McCormack, et al., 2004; Stronegger, Titze, and Oja, 2010; Poortinga, 2006). Numerous studies have shown that “green spaces” can function as facilitators of physical activity (Roemmich, et al., 2006; Craig, et al., 2002; Duncan, et al., 2009). However, other studies have shown that the presence of attractive, readily accessible urban features such as shops, cafes, theaters, and malls also stimulate active lifestyle choices (McCormack, Giles-Corti, and Bulsara, 2006; Panter and Jones, 2008; Craig, et al., 2002; Chen and McKnight, 2007; Duncan, et al., 2009). It is increasingly clear that there is no single set of environmental features that will be perceived as being the “optimal” stimuli for physical activity by all types of people (Brownson, et al., 2009; Guo and

Gandavarapu, 2010; Forsyth, Oakes, Lee, and Schmitz, 2009). Some residents found urban resources and facilities attractive, while others were more attracted by “green spaces,” parks, and gardens. One interesting finding was that individuals who reported high levels of “individual autonomy” often stated that they chose to live at their particular retirement community because it offered an environment that suited their personal tastes or preferences. One major finding of this study is that the environment probably impacts an individual’s lifestyle choices, but may do so in several different ways that vary according with individual personal preferences. The implication of this finding for cities and municipalities is that it is best to offer a menu of different types of physical activity opportunities that are available in a variety of different urban and “green” locations. Doing this makes it possible for interested individuals to have opportunities to select active lifestyle choices that are consistent with their personal preferences and prior histories.

The third theme that emerged from the interviews was “Lifestyle Choices.” This theme describes the attitudes of residents regarding health and whether they perceive their personal lifestyles to be barriers to, or facilitators of, their overall health and well-being. Three key components were identified within this theme; (1) Attitudes towards Physical Activity, (2) Social Support; and (3) Resources and Opportunities. All three retirement communities offered examples of individuals who expressed positive attitudes about physical activity and the impact that active lifestyles have on overall health. This is consistent with numerous studies that have demonstrated the physical and psychological benefits of regular physical activity (Mazzeo, et al., 1998; Pate, et al., 2005; USDHHS, 2008; Sallis and Owen, 1999; DiPietro, 2001; Rejeski and Mihalko, 2001). However, we also found examples of individuals who failed to appreciate the importance of physical activity and did not believe that physical activity was important in their lives. This is consistent with studies that have found that many older adults are under-informed about, or do not appreciate the importance

of, the health benefits of physical activity, and do not want to change their sedentary lifestyles (DiPietro, 2001; Rejeski and Mihalko, 2001; USDHHS, 1996, 2008). As regards social support, numerous residents reported that the presence of social support for physical activity facilitated their personal choices regarding physically activity. Their sources of social support could be family members, peers, or facility staff members. This finding is consistent with numerous studies which have shown that social support, or the lack of social support, from family members (McNeill, Kreuter, and Subramanian, 2006; McNeill, et al., 2006; Lechner and De Vries, 1995), peers (McNeill, et al., 2006; Lechner and De Vries, 1995), and other parties (Cerin and Leslie, 2008; McNeill, et al., 2006, McAuley and Blissmar, 2000; Lechner and De Vries, 1995, McAuley et al., 2003) can be an important facilitator of, or barrier to, physical activity. Lifestyle Choices were impacted by the number of resources and opportunities available to the residents at each of the facilities. Some settings had numerous programs and made equipment available to residents, while others offered more limited choices. Not surprisingly, individuals who lived in well-equipped, well-staffed locations were more likely to perceive the resources available in their communities in a positive manner. This finding is consistent with other studies that have underscored the importance of having adequate facilities and programs available to support the physical activity choices of older adults (McAuley, et al., 2003; Li, Fisher, Brownson, and Bosworth, 2005; King, et al., 2005; Booth, et al., 2000).

Our primary goal was to conduct an “inductive analysis” in order to identify themes that emerged from the interview transcripts. Our secondary goal was to conduct a “deductive analysis” of our data in order to determine the degree to which our findings are consistent with the predictions of the “Social Ecological Model of Physical Activity.” The Social Ecological Model (Sallis & Owen, 2002; Stokols, 1992; Stokols, Allen, & Bellingham, 1996) suggests that there are multiple levels of factors which influence individual behavior.

Social ecological theorists propose that a multi-level approach to the study of behavior provides a comprehensive framework for understanding behavioral changes without losing specificity on any level. They argue that ecological models explicitly examine the extent to which inter-level relationships influence each other in a reciprocal manner (McLeroy, Bibeau, Steckler, & Glanz, 1988; Spence & Lee, 2003). The model suggests that behaviors occur in different places and at different times for a variety of complex, but predictable, reasons and that understanding these relationships can assist with the creation of healthy community environments that can promote healthier lifestyles (Stokols, et al., 1996).

Prior research that has used the Social Ecological Model to examine issues concerning physical activity participation suggests that the physical activity behavior of individuals emerge as a result of complex multi-level interactions between individuals and numerous environmental determinants (Sallis and Owen, 1999). In addition to individual lifestyle choices, physical environments, community programs, social support, and local, regional and national policies can impact physical activity choices and other types of lifestyle behavior. Our examinations of the interview transcripts from our study support the notion that the physical activity behaviors of the individuals in our study were often influenced by their living environments. For example, many residents reported that living in residences close to parks and “green spaces” motivated them to be more active. Others were motivated by the presence of a nearby bus station, train station, or shopping center. One common theme that emerged from our interviews with the residents of all three locations was the negative impact that an impoverished environment and resources has on the choices available to older adults.

Given the extent to which our interview transcripts show that interactions between personal and environmental factors were clearly present, we conclude that our study is generally supportive of the Social Ecological Model. However, the precise nature of this relationship is complex, and it is not possible to state unequivocally that certain

environmental attributes (e.g., a park) will always be perceived in a positive light by all individuals. This conclusion is generally consistent with the findings of several previous studies that have examined environmental/individual interactions (Handy, Boarnet, Ewing, & Killingsworth, 2002; Humpel, et al., 2002; Saelens, Sallis, Black, & Chen, 2003; Saelens, Sallis, & Frank, 2003; Sallis, Kraft, & Linton, 2002). Individuals who are more comfortable in urban settings are more likely to gravitate towards urban resources, and individuals who prefer green or rural spaces are more likely to choose parks or open areas when they choose to be active (Giles-Corti and Donovan, 2002; McCormack, et al., 2004; Poortinga, 2006; Roemmich, et al., 2006; Craig, et al., 2002; Duncan, et al., 2009; McCormack, Giles-Corti, and Bulsara, 2006; Panter and Jones, 2008; Craig, et al., 2002; Chen and McKnight, 2007; Duncan, et al., 2009; Brownson, et al., 2009). All three retirement communities offered examples of individuals who were both optimistic and content with respect to the environment in the immediate vicinity of their communities. Respecting individual personal preferences and providing individuals with a degree of individual autonomy that is sufficient to allow them to realize their preferences is almost certainly an important component in determining the directions in which older individuals' lifestyle choices develop. Our data suggest that seniors who are free to select opportunities consistent with their personal preferences are more likely to sustain healthy behaviors than is the case for individuals who perceive themselves to have little say about which directions their aging will take.

In summary, both the inductive and deductive approaches provided us with a modified model with an insight into the complexity of the notion of how older adults perceive the environments around their residences, and the issues that influence their attitudes towards physical activity. The inductive approach helped identify the three major themes that emerged from the interviews and the deductive portion suggested that the Social Ecological Model and Physical Activity helps explain the interaction between individuals and their environment.

This study has several limitations. First, the sample may have been biased because only volunteer participants were included in the study. Limiting the study to volunteers raises the possibility that the perspective of older adults who were less interested, less motivated, less curious and less engaged may have been underrepresented in the interviews that were included in our study. Second, because one of the criteria for participation in this study was that subjects had to have lived in their retirement community for at least six months, the sample consisted, by definition, only of older adults who had chosen to remain in a particular facility. Therefore, it is not possible to draw conclusions from this study concerning older adults who may have moved away from these locations and chose to live elsewhere. Third, the sample was deliberately kept small due to the qualitative nature of the design. This limits the external generalizability of the study findings to the broader population of older adults. Fourth, the sample was not ethnically diverse. The majority were Caucasians. There were two African-Americans and one Asian out of a total of twelve interviewees

The findings of this study center on the concept of “community contentment.” When individuals are personally and socially content within their physical environments, they are more likely to be open to being physically active and making other healthy lifestyle choices. My future research agenda includes further exploration of the concept of “community contentment” by means of examining how individual self-reliance, motivation, social support, and other variables impact lifestyle decision making. I will accomplish this using a combination of qualitative and quantitative research. As regards the promotion of physical activity, health professionals face challenges in seeking to provide multiple options and choices to individuals who face economic constraints, as well as other types of constraints, when they attempt to provide a “one size fits all” solution. Given the determinants of physical activity and their interactions with the environment, additional research is needed to clarify how individual preferences should be taken into consideration within the constraints of the

social ecological framework. I hope that my future research agenda will contribute to the development of more sophisticated theoretical frameworks that can better inform health promotion interventions, programs and campaigns for this segment of the population.

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APPENDIX – INTERVIEW QUESTIONS

Questions related to each category are as follows:

1. Intrapersonal relationship with Physical Activity

- Describe some of the things you did to be active when you were younger.
- Describe some of the things you currently do to be physically active.
- What does the word “exercise” mean to you?
- What does the phrase “physical activity” mean to you?
- How important is physical activity to you?

2. The Perceived environment

- Please describe your overall perceptions about _(insert name of facility)_?
- Why did you decide to live here?
- Describe your feelings about the grounds and green space surrounding this facility (land, green areas, garden, environment)?
- Discuss why you do, or do you not, believe the grounds and/or green space surrounding this facility are safe.
- How important to you are the grounds and green space surrounding this facility?
- How do the grounds and green space around this building compare with where you lived before?

3. Active Living Environment

- How have your physical activity habits changed since you moved here? For example, how have your habits changed in relation to activities like walking, gardening, exercising, biking, and/or playing sports?
- How does the design and location of this facility encourage or discourage you to be physically active?
- If you go outdoors, what do you do?
- How much encouragement do you receive from others to engage in physical activity? From who?
- If you engage in physical activity, what do you usually do?

4. Policy environment

- In your opinion, what should the staff of this facility do to provide opportunities for residents to be physically active?
- How effective is the staff at motivating you to be active?
- How should the city or county government take responsibility for promoting physical activity for older adults? Think in relation to city parks, bike lanes, healthy transportation, and other physical activity options.
- What suggestions would you have for policy makers and planners in relation to promoting physical activity for older adults?
- What role, if any, should Medicare take in relation to encouraging older adults in general to be physically active?

6. Social environment

- i. When you engage in physical activity, do you prefer being alone or with others? Why?
 - How much encouragement do you receive from others to spend time outdoors? From who?
- i. How effective are other residents of this facility at motivating you to be active?

7. Descriptive information

- How long have you been living in this facility?
- Please name each of the schools you have attended?
- What is your birth date and birth year?
- How many children do you have and what are their genders?
- Are you married, and if so, is your spouse still living? (Where does he or she live?)

8. Closing

Is there any important information that you would like to share with me about (facility name) or your life that I may have forgotten to ask?