

**THE PERCEIVED IMPACT OF FALLING AND THE FEAR OF FALLING ON OLDER  
ADULTS LIVING INDEPENDENTLY AT A CONTINUING CARE RETIREMENT  
COMMUNITY IN EASTERN NORTH CAROLINA**

by

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November, 2010

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This study was completed using the phenomenological research strategy to understand the effect that falling and the fear of falling has on independently living residents at a continuing care retirement community in eastern North Carolina. To understand the residents' perspectives, interviews, the Mini Mental State Exam [MMSE], and a poetry exercise were employed. The residents completed one to two interviews, lasting approximately 45 minutes in length, took the MMSE, and wrote down key words and phrases regarding their singular perspectives on falling and the fear of falling. Fifteen men and women, aged 78-94, participated. The researcher used the interviews, the MMSE, the poetry activity, field notes, the researcher's journal, blueprints and other facility-related information, and observation to construct a particular description of falls, the language used regarding falls and the fear of falling, the relevance of the physical environment, and activities, roles, and routines each participant had related to falls and the fear of falling.



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A Thesis

Presented to

the Faculty of the Department of Occupational Therapy

East Carolina University

in Partial Fulfillment

of the Requirements for the Degree

Master of Science in Occupational Therapy

by

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November, 2010

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## DEDICATION

I dedicate this thesis to the brave, intelligent, vital men and women who graciously shared their lives and thoughts with me regarding this research.

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I want to thank all of my dedicated professors who gave me entrance to the world of occupational therapy and all it could entail. I am grateful for your guidance.

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## LIST OF ABBREVIATIONS

AAHSA: American Association of Homes and Services for the Aging

ABC: Activities-Specific Balance Confidence Scale

ADE: Adverse drug event

ADL: Activity of daily living

AGS: American Geriatric Society

AIA: American Institute of Architects

AL: Assisted living facility

AOA: Administration on Aging

BBS: Berg Balance Scale

BRFSS: Behavioral Risk Factor Surveillance System

CDC: Centers for Disease Control

CCRC: Continuing (Continuous) Care Retirement Community

DHHS: Department of Health and Human Services (national government)

DME: Durable medical equipment

ETGUG: Expanded Timed Get-Up-and-Go Test

FES: Falls Efficacy Scale

FF, FOF: Fear of falling

FQ: Fear Questionnaire

FSS-II-OA: Fear Survey Schedule II for Older Adults

GDS: Geriatric Depression Scale

HIPAA: Health Insurance Portability and Accountability Act

IADL: Instrumental activity of daily living

ICAA: International Council on Active Aging

IU: International Units

Mg: milligrams

MMSE: Mini Mental State Exam

NCDAAS: North Carolina Division of Aging and Adult Services

NCDHHS: North Carolina Department of Health and Human Services

NCDOA: North Carolina Division on Aging

NIH: National Institutes of Health

OTPF: Occupational Therapy Practice Framework

PAD: Personal Assistive Device

PCMH: Pitt County Memorial Hospital

SAFFE: Survey of Activities for Fear of Falling in the Elderly

SES: Socioeconomic status

SLR: Senior Living Residences

SNF: Skilled nursing facility

SOC: Sense of coherence

STAI: State Trait Anxiety Inventory

TGUG: Timed Get-Up-and-Go test

UMCIRB: University and Medical Center Institutional Review Board

UMRH: United Methodist Retirement Homes

USDA: United States Department of Agriculture

WHO: World Health Organization

WISQARS: Web-based Injury Statistics Query and Reporting System

WS: Worry Scale

YPAS: Yale Physical Activity Survey

## CHAPTER 1: THE AGING POPULATION

### **Introduction**

Occupational therapists believe that their clients should have meaning and purpose in their lives. We believe people have “the need to do.” Falling and the fear of falling may affect the older adult’s ability to fulfill this need. The older adult’s cultural, physical, social, and personal contexts may exacerbate this inability, especially when these contexts are combined with the aging process. According to the Administration on Aging [AOA] (2007), over 52 per cent of older adults report some type of disability, 28 per cent say they have trouble with at least one activity of daily living (ADL), and 12.9 per cent report difficulty with completing instrumental activities of daily living (IADLs). Most older adults have at least one chronic condition that effects their quality of life, such as diabetes or heart disease (AOA, 2007). Fall-related injuries rank as the second leading cause of unintentional injury death and the third leading cause of years lived with disability, according to the World Health Organization [WHO] (2010) report “Global Burden of Disease.” Occupational therapists may work with clients to reduce and/or prevent falls and the fear of falling. However, older adults who live independently have not been a primary focus of therapeutic intervention unless they have suffered an injury requiring rehabilitation after a fall. This is due to the dearth of strategic, multifactorial fall intervention programs.

It is important to understand the impact falling has on older adults since aging Americans are becoming a bigger and more vocal segment of our population. The “Baby Boomers” are swelling the ranks of older adults (North Carolina Department of Health and Human Services [NCDHHS], 2008). The Centers for Disease Control [CDC] (2007) classify the aging of the US population as “one of the major public health challenges we face in the 21<sup>st</sup> century” (p. 1). In



2006, there were 37.3 million older adults (AOA, 2007) in the United States, which is about 12 per cent of the population. Estimates of the older adult population by the year 2030 are 71 million, or about 20 per cent of the population as a whole (CDC, 2007). North Carolina ranks tenth in the nation in the number of older adults in the population (North Carolina Division of Aging and Adult Services [NCDAAS], 2003). North Carolina's older adult population grew by 20.3 per cent between 1998 and 2008 (AOA, 2009). By the year 2030, the average age of its citizens will have risen from 35.3 years to 38.4 years (NCDAAS, 2003). Pitt County's 2009 older adult population is 22,347; the projected older adult population in the year 2030 is 41, 269 (NCDAAS, 2009). Because a healthy 65-year-old and a frail 90-year-old are very different, researchers often divide age groups within the 65-and-older population. These include the young-old, old-old, and the oldest old (He, Sengupta, Velkoff, & DeBarros, 2005, p. 11; Papalia, Olds, & Feldman, 2007, p. 629).

As North Carolina's population ages, the number of older adults who fall will also rise. Kannus and associates (2005) state that falls and fall-induced injuries are a major health problem for older adults (p. 422). Injuries are the fifth-highest leading cause of death for all ages; most of these injuries occur because of falls (CDC, 2007; Kannus et al., p. 422). These statistics are important to society "because older people, especially the oldest old, are dependent on family, the government, or both for financial, physical, and emotional support" (He et al., 2005, p. 25). In fact, reducing the number of falls is one of the top priorities of the CDC (CDC, 2007.) In addition, as the older adult population increases, more older adults may experience a fear of falling, whether or not they have actually had a fall. A study by Deshpande and associates (2008) suggests that over half of older adults experience this phobia (p. 355). According to

Johansson (1998), fear of falling is common among the elderly, increases as people age, and is more common among women (p. 67).

As an occupational therapy student, I am interested in what falling and the fear of falling mean to older adults. I am also interested in discovering the impacts the cultural, physical, social, and personal contexts may have on older adults' falls and the fear of falling. By understanding the older adult's experiences of falling and the fear of falling, therapists will be better able to understand and serve the older adult population. I am also interested in using the insights provided by the research participants to extend the benefits to people living both within and outside of a continuing care retirement community [CCRC] environment. By examining the contexts that surround falling and the fear of falling (such as the physical and social), we as occupational therapists may shape these influences for a better outcome. For instance, what bearing does living in a CCRC have on a person's response to falling? Can modifying older adults' home environments promote healthy living? Perhaps we can create an environment that precludes falls, rather than restoring function and making adaptations after an older adult has fallen. In a possible attempt to address these issues, I conducted a study to better understand the experiences of older adults living in a CCRC regarding falling and the fear of falling.

### **Research Question**

The areas that have been researched in regards to falling and the fear of falling include what constitutes a fall (CDC, 2007; Tinetti, 1994), the consequences of falls (Johansson, 1998; Tinetti & Williams, 1998), what risk factors contribute to falling (Cesari et al., 2002; Crischelles et al., 2007; Gleason et al., 2009; Huang et al., 2003; Leipzig et al., 1999; Lord, ;Nevitt et al., 1991; Peeters et al., 2009; Perell et al., 2001; Tinetti et al., 1995; Vassallo et al., 2009), the impact falls have on society (CDC, 2007; Seifert, 2010), fall prevention (Godfrey & Studenski,

2010; Guelich, 1999; Hosseini & Hosseini, 2008; Ness et al., 2003; Oakley et al., 1996; Schwab et al., 1999; Seifert, 2010; Tinetti, 1994), defining a fear of falling (Deshpande et al., 2009; Sharaf & Ibrahim, 2008), what plays a part in that fear (Howland et al., 1998; Murphy et al., 2003), and the possible restrictions those fears impose (Deshpande et al., 2008; Fletcher & Hirdes, 2004; Howland et al., 1998; Suzuki et al., 2002; Wert et al., 2010; Zijlstra et al., 2007). To summarize the research areas conducted, there were eight primary categories, as reviewed above. These areas were found to be: what constitutes a fall; the consequences of falls; the risk factors that contribute to falls; the impact falls have on society; fall prevention; defining a fear of falling; the risk factors that play a part in that fear; and the possible restrictions those fears impose.

There are few published studies regarding the personal knowledge, perceptions, attitudes, and accounts of falling and the fear of falling (Hutton et al., 2009; Porter et al., 2010; Ward-Griffin et al., 2004). There have been some studies regarding CCRCs (Cutchin, Marshall, & Aldrich, 2010; Krout, Oggins, & Holmes, 2000; Peck, 2008; Sloan, Shayne, & Conover, 1995), and several quantitative studies that examine falling and fear of falling in community-dwelling older adults (Arfken et al., 1994; Cesari et al., 2002; Deshpande et al., 2008; Murphy et al., 2003; Pluijm et al., 2006; Suzuki et al., 2002; Tinetti & Williams, 1998; Wert et al., 2010; Zijlstra et al., 2007), but no qualitative studies that focus on falling and fear of falling in older adults in a CCRC. Therefore, my research question is “What is the perceived impact the experience of falling and the fear of falling has for older adults who live independently in a Continuing Care Retirement Community in eastern North Carolina?” I believe this study will provide new insights into falls and the fear of falling. This will allow the occupational therapy profession to better

understand and serve the older adult population, both in a clearer concept of what is needed for fall prevention and how to best assist the older adult after a fall has occurred.

### **Researcher Interest**

I am interested in this question because falls and the fear of falling are a major health concern for older adults. I want to understand what falling and the fear of falling mean to the older adult. I want to discover if place and social atmosphere are mitigating factors in both falls and the fear of falling. Living in a CCRC such as Cypress Glen, where it is possible for an older adult to age in place, may lessen the chance of falling due to the physical environment and decrease fear due to the physical, social, and personal contexts. I hope to inform other healthcare professionals regarding the experiences of these older adults. If place and social atmosphere are mitigating factors, perhaps these aspects can be replicated in other CCRCs to reduce falls and the fear of falling in other older independently-living adults.

I learned about Cypress Glen, a CCRC in Greenville, North Carolina, from my thesis director at East Carolina University. I was introduced to the Rehabilitation Director, who was pivotal in familiarizing me with Cypress Glen; the Executive Director of Cypress Glen, who contributed information on the running of Cypress Glen and services and amenities; and to the Marketing Assistant, who gave me critical information describing the residences, the amenities and the services provided, and the financial responsibilities the residents have.

### **Assumptions and Biases**

In speaking with my thesis director, I made several assumptions regarding Cypress Glen and the independently-living residents. My thesis director had conducted research at Cypress Glen in the past, and she briefly outlined the setting and the residents to me, giving me an idea of what I would find there during my own study. The physical setting encompasses a large building

with several wings as well as unattached living spaces and the grounds are vast, so I expected that the residents would experience “separateness” and not necessarily have a feeling of community. I believed that there would be less falls and less fear of falling occurring at Cypress Glen than in community-dwelling older adults as a whole because of the design of the physical space, with durable medical equipment [DME] and a security system in place. I believed that the adults who lived in cottages rather than in one of the residence apartments would be less involved with the activities available to the community because of their “separateness.” I expected that, given their living situation, the residents would have adequate resources: financial, educational, and supportive services. I made the assumption that the residents’ socioeconomic status would correlate with their health status. I believed that they would be college-educated.

Before I began my research, I assumed that falls were a part of growing old. I believed that most older adults experience falls, that many needed to be hospitalized after a fall, and that falling was the beginning of a decline in health and social participation. I considered a loss of balance and/or a stumble part of the falling category. Even if a person saved a fall by grabbing on to something or landing somewhere above ground level, it was a fall. I thought that women were more prone to falling than men, and that women suffered hip fractures and other bone breaks when falling. I did not think about environmental hazards, especially outdoors, or that depression and previous falls were also risk factors for falling. I believed that anyone who fell was going to experience and exhibit a fear of falling and severely limit their activities once they had fallen, at least in the short term. I believed that the residents would, as a daily occurrence, have thoughts regarding falling and the fear of falling. I expected that the residents who had fallen got the required medical attention that they needed, due to their living arrangements and the proximity to Pitt County Memorial Hospital. I expected that even at a facility such as

Cypress Glen, the residents who had fallen would experience social isolation, depression, and anxiety. Finally, I believed that learning about falls and the fear of falling from these residents would benefit occupational therapists in their ability to work with this population, leading to more favorable outcomes.

As a way to elicit my biases and assumptions, I used self-reflection before beginning my research and while my research was ongoing. I used my field notes and a researcher's journal to record these beliefs. Using the input from my director and the literature regarding falling, I developed a set of questions for my research participants that set aside my biases. For example, I asked, "What words would you use to describe a fall?" This type of question is open-ended and relies on the respondent to describe the action in their own words. I also deleted bias by using questions such as, "What emotions did you feel as a result of your fall?" After I had finished transcribing the interviews, I reflected on my assumptions and biases and compared them to the interview transcripts, to assure that I had accurately portrayed my participants' responses, without coloring them with my beliefs. This helped establish trustworthiness in my research.

### **Research Paradigm**

Qualitative research, according to Creswell (2007), "represents a legitimate mode of social and human science exploration, without apology or comparison to quantitative research" (p. 11). Sometimes qualitative research is the best way to get at the truths of a subject in a way that quantitative research cannot. As found in my literature review, there are not enough studies that give a "thick" description of falling and the fear of falling because most of them are quantitatively based. The four cornerstones of qualitative research are ontology, epistemology, axiology, and rhetoric (Creswell, p. 17). Ontology is discovering the nature of reality and its various characteristics (Creswell, p. 16). By going to the source (the residents at Cypress Glen), I

discovered their respective realities. Epistemology is the drawing of the researcher to her subjects (Creswell, p. 18). I wanted to get close to the residents at Cypress Glen so that it would be possible for me to not only hear what they had to say, but to understand their lives by being within their walls: seeing where and how they live. Axiology is the understanding that the researcher brings her own values when conducting this type of research (Creswell, p. 18). There were certain biases that I had regarding the residents in my study, and I needed to acknowledge these biases while conducting my research. Finally, rhetoric means that the narrative is more personal in form (Creswell, p. 19). In conducting this type of research, I could not discount the importance of my voice and that of the residents as they told their stories. Their “eyewitness” accounts gave credence and meaning to the research. Regarding my voice being present in the research: “Writing in the first person, active voice communicates the inquirer’s self-aware role in the inquiry” (Patton, 2002, p. 65). According to Anaf and Sheppard (2007), writing in the first person is “part of many traditional qualitative approaches, which may encourage an appreciation of qualitative research’s difference from quantitative conventions” (p. 90). Therefore, the most meaningful and immediate way to describe, enlighten, and delineate the meaning of falls and the fear of falling for the older adults in this particular culture was to ask the residents themselves and understand that my biases and assumptions were present as well.

### **Definitions of Critical Terms**

I have included these definitions to benefit the reader. The following terms are defined using qualitative research literature, occupational therapy literature, and related journal articles.

**Activities of Daily Living (ADLs):** Activities oriented toward taking care of one’s own body (Occupational Therapy Practice Framework, 2009, p. 669).

**Assistive Technology:** A broad range of devices, services, strategies, and practices that are conceived and applied to ameliorate the problems faced by individuals who have disabilities (Cook & Polgar, 2008).

**Assumptions:** Perceptions that present people with an understanding of the world; evidence of the world (Richards & Morse, 2006).

**Bias:** Any subject that has an unbalanced or unfair slant due to having significant facts omitted from a description (McCullagh, 2000).

**Codes:** The building blocks for theory or model building and the foundation on which the analyst's arguments rest (MacQueen et al., n.d.).

**Community:** A group of people with common interests and beliefs (Letts, Rigby, & Stewart, 2003.)

**Cottage:** At Cypress Glen, a cottage is a free-standing residence owned by the person who lives there, as opposed to an apartment or duplex/triplex, which are leased.

**Haiku:** A poetic form from the Japanese culture that combines form, content, and language in a meaningful, yet compact form. Haiku poets write about everyday things, including nature, feelings, or experiences with simple words and grammar. The most common form for haiku is three short lines. The first line usually contains five (5) syllables, the second line seven (7) syllables, and the third line contains five (5) syllables. Haiku doesn't rhyme. A haiku must "paint" a mental image in the reader's mind

(<http://volweb.utk.edu/school/bedford/harrisms/haiku.htm>, n.d.).

**Hermeneutic Phenomenology:** A descriptive, reflective, interpretive, and engaging mode of inquiry from which the essence of an experience may be elicited. Experience is considered to be an individual's perceptions of his or her presence in the world at the moment when things, truths,



or values are constituted (Richards & Morse, 2007).

**Instrumental Activities of Daily Living (IADLs):** Activities to support daily life within the home and community that often require more complex interactions than self-care used in ADLs (OTPF, 2009, p. 671).

**Older adult:** For the purpose of this research, any person age 65 and older (AOA, 2007).

**Old-old:** Those persons ages 75-84 (He, Sengupta, Velkoff, & DeBarros, 2005).

**Oldest old:** Those persons aged 85 years and older (He, Sengupta, Velkoff, & DeBarros, 2005).

**Phenomenological reduction:** Vivid and detailed attentiveness to description (Richards & Morse, 2007).

**Subtheme:** A theme that is subordinate to a main theme. (merriam-webster.com/dictionary/subtheme, 2010).

**Transcendental phenomenology:** A presuppositionless interpretation by which phenomena are described (Richards & Morse, 2007).

**Young-old:** Those persons ages 65-74 (He, Sengupta, Velkoff, & DeBarros, 2005).

## CHAPTER 2: LITERATURE REVIEW

### **Introduction to the Literature Review**

As defined, a fall is “an unintentional change in position resulting in coming to rest on the ground or other lower level” (Hosseini & Hosseini, 2008, p. 15; National Institute of Health and Clinical Excellence, 2004, Peeters, van Schoor, & Lips, 2009, p. 798). In the literature, a distinction is made between one fall and recurrent falls. Falling refers to any fall and does include occasional falls. Recurrent falling has been defined as two or more falls within six months (Hill, Womer, Russell, Blackberry, & McGann, 2010, p. 1771; Stel et al., 2003, p. 1357). Peeters et al. (2009) state:

Occasional falls are caused mainly by extrinsic factors (i.e., environmental factors that act upon the person), but recurrent falls are usually caused by intrinsic factors (i.e., physical, cognitive and behavioural factors within the person, e.g., mobility limitations) accompanied by an environmental hazard (p. 798).

Fear of falling is defined as a lasting concern about falling that can lead an individual to avoid activities that the person remains capable of performing despite a lack of injury or physical problem (Deshpande, Metter, Lauretani, Bandinelli, & Ferrucci, 2009, p. 355; Tinetti, Richman, & Powell, 1993, p. 239).

Falls are classified as one of the geriatric syndromes (Flacker, 2003, p. 575; Inouye, Studenski, Tinetti, & Kuchel, 2007, p. 780). Geriatric syndromes have a deleterious affect on the older adult’s quality of life and ability to function. One of the earliest definitions of geriatric syndromes is conditions “experienced by older—particularly frail—persons, [that] occur intermittently rather than either continuously or as single episodes, may be triggered by acute insults, and often are linked to subsequent functional decline” (Reuben, 1991, p. 117). Currently,

geriatric syndromes have been reclassified as conditions in which symptoms may result not just from discrete diseases, but also from accumulated impairments across multiple systems (Flacker, 2003, p. 575; Tinetti, Williams, & Gill, 2000, p. 338). According to Inouye et al. (2007), with some people, the processes may involve distinct and distant organs, with no direct connection between the site of the underlying physiological insult and the resulting clinical symptom (p. 780). At times, there is often an intersection between a chronic condition (such as diabetic neuropathy) and an acute mishap (such as tripping over a door ledge) (Tinetti & Kumar, 2010, p. 259-260). Many common conditions that geriatricians treat, including delirium, falls, frailty, weight loss and malnutrition, depression, dizziness, syncope, urinary incontinence, immobility, and gait disorders can be categorized as geriatric syndromes (Amin, Kuhle, & Fitzpatrick, 2003, p. 1159; Inouye et al., 2007, p. 780).

To fully understand falling and the fear of falling, I have explored concepts such as the consequences of falls, the factors that contribute to falls, and the impact falls have on society. I have also examined how fear relates to falling and the factors that contribute to the development of this fear. I conducted my research at Cypress Glen, a CCRC, so I studied continuing care retirement communities in general as well as Cypress Glen in particular. Lastly, in order to understand this experience from an individual's perspective, I used a phenomenological approach, and my literature review briefly discusses phenomenology.

## **Consequences of Falling**

### **Fall Fatalities**

Falling is something that everyone most likely has experienced during their lifetime. However, according to the Web-based Injury Statistics Query and Reporting System [WISQARS], falls are also one of the leading causes of death in the United States for people of

all ages (less than one year through greater than 65 years) (CDC, 2007). The CDC (2007) categorizes falls as unintentional injuries (consisting of things such as traffic accidents, burns, suffocation, poisoning, drowning, accidents with machinery, and falls) when examining causes of death. In the United States, in 2007, falls were the third highest cause of unintentional injury fatality and 22,631 people of all ages died as a result of falls (CDC, 2007). However, according to the CDC (2007), falls in older adults were the leading cause of death from unintentional injury, with a 47.9 per cent fatality rate, or 18,334 deaths. These fall-related deaths may be further subdivided into the young-old adult, the old-old adult, and the oldest-old adult. For the old-old and oldest-old categories, falls were the most prevalent cause of unintentional injury death, while for the youngest-old category, falls were ranked second only to deaths by motor vehicle. The number of fall-related deaths for the young-old adult were 2,594 vs. 6,552 for the old-old adult and 9,188 for the oldest-old adult (CDC, 2007). According to the North Carolina Department of Health and Human Services [NCDHHS] (2009), falls were the leading cause of unintentional injury deaths in older North Carolinians, as well. As noted by North Carolina Injury and Violence Prevention Branch (2007), there were 609 fatal falls in North Carolina in the year 2007 (CDC, 2007).

### **Fall-Related Injuries**

Fall-related injuries are a frequent cause of hospitalization for all ages (CDC, 2007). The Behavioral Risk Factor Surveillance System [BRFSS] (CDC, 2010) defines an injury suffered in a fall as something that causes a person to "limit regular activities for at least a day or to go see a doctor." In a report compiled by WISQARS, in the United States, in 2007, there were 8,035,635 falls of people of all ages requiring visits to emergency departments (CDC, 2007). Again, for older adults, falls were the leading cause of visits to the emergency department, with 1,927,766

older adults requiring treatment (CDC, 2007). Of this number, 628,391 were young-old adults, 790,804 were old-old adults, and 610,680 were the oldest old (CDC, 2007). The North Carolina Department of Health and Human Services [NCDHHS] (2009) has found that falls are the second leading cause of nonfatal injuries among North Carolinians 65 and older. In North Carolina, in 2006, there were 17,579 emergency department visits for falls (Woody, 2009, p. 9).

Some common fall-related injuries for older adults include lacerations; swelling; bruising; fractures, specifically of the spine, hip, forearm, leg, ankle, pelvis, upper arm, and hand; subdural hematomas; and knee effusions (Bradley, Karani, McGinn, & Wisnivesky, 2010, p. 64-65). In 2004, there were 1.8 million older adults treated in emergency departments nationwide after incurring these fall injuries: traumatic brain injuries, lower extremities fractures, and injuries to internal organs (CDC, 2007). Information from “The State of Aging and Health in America” indicates that there were 360,000-480,000 fall-related fractures sustained by older adults in the year 2007 (CDC, 2007). Inability to rise without help, experienced by half of older adults after at least one fall, may cause injuries such as dehydration, pressure ulcers, and rhabdomyolysis (Tinetti & Kumar, 2010, p. 259; Tinetti, Liu, & Claus, 1993, p. 65).

### **Economic Impact of Falls**

In economic terms, falls are becoming a major public health problem, because of the high costs that follow falls among older adults (Hosseini & Hosseini, 2008, p. 15). The CDC (2007) estimated that \$19 billion dollars are spent annually on older adult falls. These are direct costs; that is, the costs that were applicable to the immediate injury and/or hospitalization. It does not take into account the related costs, which included disability pay, lost days of work, and the effect the injury had on the person and his or her significant others (CDC, 2007). In North Carolina “hospital-admitted falls (in direct and work loss) cost \$3.8 billion for those over the age

of 65 in 2006” (Woody, 2009, p. 6). According to the North Carolina Injury and Violence Prevention Branch (2007), in 2006 an average visit to the emergency department after a fall cost \$21,000.00.

### **Factors Contributing to Falls**

For the older adult, there are fall risk factors particular to their age and condition. These risk factors include, but are not limited to, muscle weakness, disease, gender, depression, and cognition deficits, which in turn cause problems for balance, mobility, and daily human activities (American Geriatrics Society Panel on Falls Prevention, 2001, p. 664; Hosseini & Hosseini, 2008, p. 16; Guelich, 1999, p. 16; Markle-Reid et al., 2010, p. 120; Peeters, van Schoor, & Lips, 2009, p. 798). Fall risk factors can be categorized as intrinsic and extrinsic.

#### **Intrinsic Risk Factors**

The intrinsic risk category includes age itself and age-related issues. The most often cited potential intrinsic fall risk factors are older age; female gender; nutritional status, such as having vitamin D or calcium deficiencies; dizziness and balance deficits; inadequate physical activity, which causes weaknesses in gait and strength; cognitive impairment; a deterioration in vision, such as lack of depth perception; and depression (AOA, 2007; Oakley et al., 1996, p. 243; Tinetti, Doucette, Claus, & Marottoli, 1995, p. 1214; Tinetti & Kumar, 2010, p. 260).

**Age.** Older adults fall often. According to Stel et al. (2003), “Approximately 30 per cent of the community-dwelling persons aged 65 and older fall at least once per year, and about 15 per cent fall two or more times per year” (p. 1356). This proportion increases to 40 per cent after the age of 75 (Tinetti & Williams, 1998, p. 112). An age greater than 80 has a strong correlation to falling (Tinetti et al., 2006, p. 718), due in part to an overall decline in physical condition. According to Godfrey and Studenski (2010), there is also a new category to consider when

studying falls: the active older adult, such as “aging women who experience an injurious fall while continuing to pursue old athletic interests, such as skating, skiing, and rollerblading” (p. 185). These older adults are commonly in their 70’s and 80’s (Godfrey & Studenski, p. 185).

**Gender.** Gender plays a role in falling as well. The rate of injuries incurred by a fall are about equal for older men (men over the age of 65) and older women (women over the age of 65) and for African Americans and Caucasians. However, older women are more likely to experience fractures, and older men and African Americans are more likely to experience traumatic brain injuries (CDC, 2007; Tinetti, Doucette, Claus, & Marotolli, 1995, p. 1217; Tinetti & Kumar, 2010, p. 259). Also, fractures constituted a higher percentage of the serious injuries among female than among male fallers (Tinetti, Doucette, Claus, & Marotolli, 1995, p. 1217). Men were 22 per cent more likely than women to sustain *fatal* falls (CDC, 2007; Stevens et al., 1999, p. 27); these death rates may be higher among older men due to a higher prevalence of comorbid conditions in men than women of similar age (Stevens et al., p. 27). Tinetti et al. (1995) also found that the females in their study were more likely to have balance and gait impairments than males (p. 1219.) Finally, female gender was significantly associated with a decline in the level of functioning as a consequence of falling (Stel, Smit, Pluijm, & Lips, 2004, p. 63). According to Stel and associates (2004), “Women reported general physical injury, bruising or extravasation of blood significantly more often compared with men” because of a fall-related injury (p. 61). However, the data do not indicate whether women really suffer more or only report more falling events than men (Stel, Smit, Pluijm, & Lips, 2004, p. 63).

Another consideration in regards to gender is that women have smaller skeletons than their male counterparts and greater bone loss due to menopause, which is one cause of fractures (United States Department of Agriculture [USDA], 2009). Menopausal bone loss occurs because

of a decrease in estrogen levels and an increase in bone resorption, resulting in the weakening of bones (Vondracek, 2010, p. 59). The bone disease resulting from low bone mass (osteopenia) due to excessive bone resorption is called osteoporosis (Black's Medical Dictionary, 2010). Of those who suffer from osteoporosis, 80 per cent are women (USDA, 2009). Tinetti, Doucette, Claus and Marotolli (1995) state, "the greater risk of injury in women compared with men likely reflects, at least partially, the known lower bone mineral density in women that persists in very old persons [72 years and older]" (p. 1218).

**Nutrition.** Nutritional studies have discovered that Vitamin D is a factor in averting falls. The type of Vitamin D used to test for deficiencies is known as serum 25-hydroxyvitamin D, the active form of Vitamin D found in the liver (USDA, 2009). Unfortunately, serum concentrations of 25-hydroxyvitamin D are known to decline as a person ages (Ramel, Jonsson, Bjornsson, & Thorsdottir, 2009, p. 1001; Wilhelm-Leen, Hall, deBoer, & Chertow, 2010, p. 171; Wilkins, Birge, Sheline, & Morris, 2009, p. 349). According to Kessenich (2010), "older adults are at particular risk for vitamin D deficiency due to lack of exposure to the sun and decreased dietary intake and absorption" (p. 12). The USDA (2009) states, "As many as half of older adults in the United States with hip fractures could have serum 25-hydroxyvitamin D at deficient levels." Also, rates of 25-hydroxyvitamin D deficiency are higher among groups that are already at a high risk for poor physical functioning: older individuals, women, and non-whites (Wilhelm-Leen et al., p. 171).

Vitamin D is needed for bone growth and remodeling. Vitamin D helps the body absorb calcium, keeping bones stronger and therefore, less likely to break (USDA, 2009). According to the USDA (2009), "together with calcium, vitamin D helps protect older adults from osteoporosis." This is an important consideration for reducing falls, which are oftentimes caused



by and/or result in hip fractures. Without adequate amounts of Vitamin D, there is an increased bone turnover which results in an increased risk of bone fracture (Kessenich, p. 12). There may also be a correlation between inadequate amounts of Vitamin D<sub>3</sub> and loss of cognition in the older adult, although more research is needed before proof is absolute (Annweiler et al., 2010, p. 29; Wilkins, Birge, Sheline, & Morris, 2009, p. 349). Molano (2010) found that those older adults exhibiting lower vitamin D levels were more likely to have dementia, strokes, and disease processes in the blood vessels to the brain (p. 2). The recommended daily allowance for Vitamin D is currently 200 International Units (IU) per day from birth to age 50 years, 400 IU per day for those aged 51 to 70 years, and 600 IU per day for adults aged 71 years or older (USDA, 2009).

A lack of calcium may also be a factor in falls. Many postmenopausal women do not include enough calcium in their diets, which can lead to osteoporosis (Office of Dietary Supplements, 2009). According to Vondracek (2010), “the average daily dietary calcium intake in women 60 years of age or older is only 660 mg (i.e., roughly half the recommended amount)” (p. 10). People with osteoporosis are prone to falling, incurring osteoporotic fractures at the vertebrae, the femur, the distal radius, and the proximal humerus (Peeters, van Schoor, & Lips, 2009, p. 798). These fractures can also be a direct outcome of falling (CDC, 2010). The prevalence of osteoporosis, which contributes to reduced bone mass and increased bone fragility, is greatest among older white women. “Compared with whites aged greater than or equal to 65 years, blacks of comparable ages have greater bone mass and are less likely to sustain fall-related hip fractures” (Stevens et al., 1999, p. 27).

In another study, Tucker (2003) discovered that “the negative effect of sugars, along with displacement of more nutritive beverages, may explain the several epidemiologic observations that soft drink consumption is negatively associated with bone mass density” (p. 2695). In other

words, if people replace healthy drinks such as milk and water with sodas, bone mass dissipates, leading to osteoporosis and an increased chance of fractures. The same consequences are true for caffeinated beverages. According to Vondracek (2010), “A high caffeine intake (the equivalent of four or more cups of coffee daily) increases the risk for osteoporosis and fractures in women with a low calcium intake (less than 700 mg/day)” (p. 10). According to the Office of Dietary Supplements (USDA, 2009), the recommended daily allowance for calcium is currently 1000 mg for men and women 19–49 years of age, and at least 1200 mg for men and women 50 years of age or older.

**Dizziness/Balance.** Dizziness and lack of balance can result from physical problems, the use of medications, or a combination of the two. Factors that affect balance include orthostatic hypotension, syncope, neurological deficits, gait impairments, and vestibular issues. According to Huang, Gau, Lin, & Kernohan (2003), “dizziness, syncope, and functional disability such as gait impairments have been associated with increased risk of falls” (p. 400).

Orthostatic hypotension, one cause of dizziness, is a sudden dip in blood pressure when coming to a more upright position, especially if the position change is sudden (MayoClinic.com, 2009). Another form of dizziness is syncope, which is a loss of consciousness due to diminished cerebral blood flow (Stedman’s Medical Dictionary, 2006). Syncope can be brought on by tight collars, sudden head turning, looking up, wearing a cervical collar, warm atmospheres, prolonged standing, fasting, fatigue and/or dehydration (McIntosh, Da Costa, & Kenny, 1993, p. 56).

Neurological deficits (such as Parkinsonism) manifest themselves as difficulty with sensorimotor processing and/or somatosensory loss (Painter, 2009; Guelich, 1999, p. 16).

Sensorimotor processing is the ability of the brain to translate the input received from the senses

into motor output (Schuktz-Krohn, Royeen, McCormack, Pope-Davis, & Jourdan, 2006, p. 730). Somatosensory loss is the inability of the body to register input from the senses (Cooper & Abrams, 2006, p. 515). These two system failures may also be a factor in gait impairment. Gait impairment includes problems with path deviation, turning, step continuity (i.e., steps of equal length), and step symmetry (i.e., alternating arms and legs moving in synchronicity) (Murphy, Dubin, & Gill, 2003, p. 944). Gait impairments commonly result from arthritis of the hips and knees, stroke, muscle weakness, and/or other lower extremity problems (Huang, Gau, Lin, & Kernohan, 2003, p. 402).

Vestibular dysfunction has two separate components: vertigo (a false sense of motion) and imbalance (a problem with gaze or postural stability), and either can result in a fall (Agrawal, Carey, Della Santina, Schubert, & Minor, 2009, p. 938). Vestibular dysfunction includes such problems as Benign Paroxysmal Positional Vertigo and Meniere's Disease, both causes of dizziness (Black's Medical Dictionary, 2010). Imbalance can be caused by deficits in vision, proprioception, and musculoskeletal function (Agrawal et al., p. 939).

There is no treatment that eliminates dizziness or restores balance completely, but there are ways to minimize effects from the two conditions. One method of improving balance is Tai Chi, which works on increasing flexibility and balance by increasing strength in the lower extremities and improving core stability (Li et al., 2005, p. 187). Other forms of exercise are beneficial as well, since they keep the muscles toned, enabling the muscles to cope more easily with changes in position (Huang, Gau, Lin, & Kernohan, 2003, p. 404).

**Physical activity.** Physical activity is defined as anything that gets the body moving (National Institute on Aging, 2010), and may include gardening, walking and/or other occupations. Inadequate physical activity can lead to loss of coordination, lack of muscle

strength, poor endurance, poor reaction time, inflexibility, and gait abnormalities (moving slowly or unsteadily) (Painter, 2009; Province et al., 1995, p. 1342). Less than thirty minutes of moderate intensity physical activity five days out of the week is not enough to maintain heart, muscle, and joint health (National Institute on Aging, 2010). Muscle strength does decrease with age and may lead to loss of independence and increased disability (Elsawy & Higgins, 2010, pp. 57-58; Vogel et al., 2009, p. 303). Some identified causes of reduced muscle mass include decreased physical activity, hormones, malnutrition, and chronic disease (Baumgartner, Waters, Gallagher, Morley, & Garry, 1999, p. 123). Falls appear to be associated with age related declines in musculoskeletal function (Nevitt, Cummings, Kidd, & Black, 1989, p. 2663).

Workouts including balance training, strength training, and flexibility exercises have been associated with a reduced risk of falls in older adults (Vogel et al., p. 313). Balance exercises and moderate-intensity, muscle strengthening activities should be performed at least three days a week for a total of 90 minutes (Elsawy & Higgins, p. 59; Department of Health and Human Services [DHHS], 2008). Tai Chi (a Chinese martial art) is frequently mentioned in the literature as very beneficial for older adults because it is slow, controlled and purposeful in movement, dynamic in nature, and involves the use of large muscle groups, which increases balance, strengthening and resistance (American Geriatrics Society Panel on Falls Prevention, 2001, p. 668; Huang, 2004, p. 139; Li et al., 2005, p. 187; Vogel et al., p. 313). However, increase in physical activity has also been associated with a greater risk of falls (Lawton et al., 2009, p. 123; Vogel et al., p. 315).

**Cognition.** Cognitively, the person who falls may do so because of lack of attention, lack of good judgment, compromised protective responses, engagement in dual-task activities (such as walking while carrying a heavy object), or engagement in hazardous activities (due to not

recognizing limitations) (Painter, 2009; Tinetti, Doucette, Claus and Marotolli, 1995, p. 1218). Older adults who have cognitive impairments are prone to gait and balance disturbances, which in turn may lead to an increased risk of falls, injurious falls, and recurrent falls (Vassallo et al., 2009, p. 41). Older adults with dementia are three times more likely to be seriously injured in a fall (Mirolsky-Scala & Kraemer, 2009, p. 181; Vassallo et al., 2009, p. 41). Research conducted by Gleason, Gangnon, Fischer, & Mahoney (2009) found that older adults with a Mini-Mental State Exam [MMSE] score above the cut-off line for dementia (i.e., those with a mild cognitive impairment and MMSE score from 28-30) still have an increased risk of falling if they have a previous history of falls (p. 561).

As with imbalance, there is no reversal strategy for cognitive decline. However, engaging in some form of physical activity and having adequate social support have been shown to support cognitive functioning (Hosseini & Hosseini, 2008, p. 17; Vogel et al., 2009, p. 315). Social support such as that provided by family and friends may decrease other risk factors for falling (Huang, 2004, p. 132). Reducing the hazards in the environment also helps cognitively impaired older adults maintain independence (Painter, 2009).

**Vision.** According to Rudman, Huot, Klinger, Leipert, & Spafford (2010), “the impact of low vision on occupation has been related to negative psychosocial and physical outcomes, including falls, depression, social isolation, decreased quality of life, and greater probability of nursing home placement” (p. 87). Several population-based studies have identified reduced visual acuity as one of the most common risk factors for falls (Lamoureux et al., 2010, p. 528). The visual dysfunctions most closely linked to falling are cataracts, glaucoma medication, and deficiencies in depth perception, low-contrast visual acuity, and contrast sensitivity (American Geriatrics Society Panel on Falls Prevention, 2001, p. 669; Godfrey & Studenski, 2010, p. 187;

Lord, 2006, p. 45; Tinetti, 2001, p. 676). Individuals with poor vision, compared to fully sighted older adults, are almost twice as likely to fall, have recurrent falls, and sustain fractures (Lamoreux et al., 2010, p. 528; Lord, 2006, p. 44). Lord (2006) states, “regular eye examinations, use of correct prescription glasses, cataract surgery and the removal of tripping hazards in the home and public places have the potential to prevent falls in older people” (p. 43).

**Depression.** Depression has also been identified as a possible risk factor in falling and the fear of falling (Sharaf & Ibrahim, 2008, p. 33; Stel, Smit, Pluijm, Lips, 2004, p. 63). Population-based studies have shown depression or a high number of depressive symptoms to be associated with falls, either by preceding or following them (Cesari et al., 2002, p. 723; Stel et al., 2004, p. 62; Tinetti & Williams, 1998, p. 114; Whooley et al., 1999, p. 488). Depression may erode the older adult’s independence and confidence to perform activities, which in turn may lead to activity restriction and social isolation (Sharaf & Ibrahim, 2008, p. 33). In a study by Whooley et al. (1999), “women with depression had a 40% increased odds of subsequent falls” (p. 488). In some older adult women, depression may manifest itself as psychomotor slowing, which can have a biological impact on reaction time, hindering the ability to prevent a fall (Godfrey & Studenski, 2010, p. 186). The use of anti-depressive medications, such as serotonin-reuptake inhibitors and tricyclic antidepressants, has actually been shown to increase the chance of falling in older adults (Cesari et al., 2002, p. 725; Leipzig, Cumming, & Tinetti, 1999, p. 33). As with cognition and dizziness, physical activity has been shown to lessen depression (Cesari et al., 2002, p. 725).

### **Extrinsic Risk Factors**

Extrinsic risk factors associated with falls include environmental hazards (such as poor lighting, irregular or slippery floor surfaces, unsafe stairways, crowded walkways, loose

carpeting or throw rugs, and furniture), poor footwear, fear of falling, polypharmacy (taking four or more medications at the same time), inadequate supports (devices such as walkers and bathroom fixtures) and previous history of falls and fall injuries (Huang, 2004, p. 131; Hosseini & Hosseini, 2008, p. 17; Peeters et al., 2009, p. 798).

**Environmental hazards.** Seifert (2010) identifies environmental hazards as one of the extrinsic fall risk factors (p. 8). Environmental hazards are those things that pose obstacles to safely moving around indoor living spaces and the wider community. According to Gill, Williams, & Tinetti (2000), “the home environment has been implicated in 35% to 45% of falls” (p. 1175). Lamoreux et al. (2010) found that almost 65 per cent of the falls happened inside the home (e.g., in the bedroom or bathroom); the majority of all falls (60 per cent) took place at home and in the surrounding environments (e.g., garden or backyard areas); and for falls occurring in the wider community, over 50 per cent involved negotiating barriers (e.g., curbs and steps) and slick surfaces (p. 529). Indoor hazards include risks that come from flooring issues (loose rugs, carpet folds, etc.), immovable equipment (such as sofas, etc.), other objects on the floor (cords, hampers, footstools, etc.), mobility aids out of reach (such as canes and walkers), poor lighting, and certain types of footwear (Gill et al., 2000, p. 1177; Seifert, 2010, p. 8).

Home modifications recommended in the living space to lessen the chances of a fall include the removal of rugs, a change to safer footwear (this includes footwear that is more supportive, non-slip, and fits properly), the use of nonslip bathmats, the use of lighting at night, and the addition of stair rails (Consumer Reports on Health, 2010; Seifert, p. 8). One study has found that after minor home safety modifications were made, the number of falls experienced by older adults were reduced anywhere from 6 per cent to 33 per cent (Lifetime Homes, Lifetime Neighbourhoods, 2008, p. 137.)

Environmental inequality is defined as “the unequal social distribution of environmental risks and hazards and access to environmental services and goods” (Barnett & Mordey, 2010, p. 14). Increasingly, communities are beginning to understand that most neighborhoods, streets, and public places are not-user friendly for older adults (Crosby & Clark, 2008, p. 21; Lifetime Homes, Lifetime Neighbourhoods, 2008, p. 96). Problems such as poor paving, street clutter, and lack of benches and public restrooms pose significant barriers to moving around the neighborhood, especially as people age (Lifetime Homes, Lifetime Neighbourhoods, 2008, p. 96). The lack of these environmental features may have a bearing on older adults’ well-being and may cause falls, a loss of confidence, social isolation, and/or the necessity of institutionalization (Crosby & Clark, p.21). Outdoor hazards around residences can include uneven steps, unsafe stair design, and lack of safety features such as handrails, grab bars, and ramps (Consumer Reports on Health, 2010). Outdoor community hazards include uneven pavement or surfaces, curb cuts, pavement cracks, tree roots, slippery walking surfaces, obstacles in walkways and snow or ice on walkways or steps (Huang, Gau, Lin, & Kernohan, 2003, p. 401).

There is a movement toward making communities more livable for all residents. Design objectives should include pedestrian routes that are continuous, direct, and have adequate signage. Pedestrian crossings should be safe and convenient with curb cuts provided where necessary. Paths should be at least 1.8-m wide and should have smooth, firm surfaces that are well-drained and lit. Ramps should be no steeper than a 5 per cent grade. (Mitchell, 2006, p. 51)

**Polypharmacy.** Polypharmacy is associated with an increased risk of falls in older people (Tinetti, Gordon, Sogolow, Lapin, & Bradley, 2006, p. 718). Adverse drug events [ADEs] are considered to be side effects, unwanted reactions, or other problems from medications (Crischilles et al. 2007, p. 20). Crischilles et al. (2007) state, “the rate of ADEs



increases substantially as the number of drugs in a regimen increases” (p. 29). Drugs in certain categories, such as psychotropics (classes such as stimulants and antidepressants) or anti-hypertensives (the diuretics), are among the main offenders. Drugs most often linked to a greater risk of falls include serotonin-reuptake inhibitors, tricyclic antidepressants, neuroleptic agents, benzodiazapines, and anticonvulsants (Leipzig, Cumming, & Tinetti, 1999, p. 33; Tinetti, 2003, p. 43). Medication such as thiazide diuretics may also contribute to falls in older adults (Heidrich, Stergachis, & Gross, 1991, p. 1; Leipzig et al., p. 40). Tinetti (2003) states that “practical methods are needed to balance the benefits of medications for the treatment of specific diseases with the risk of adverse events, including falls, in elderly persons” (p. 48). Rubenstein, Robbins, Josephson, Schuman, & Osterweil (1990) maintain “when choosing medications, the clinician should consider drugs that are least associated with postural hypotension, are shortacting, and are less likely to have sedative effects” (p. 309). Healthcare professionals should review the older adult’s medications annually and the same pharmacy should be used for all prescriptions so that drug records are accurate and can be compared (Snowden, 2008, p. 117).

**Previous Falls.** Unsurprisingly, systematic reviews show that previous falls and fall injuries were the most prevalent factor contributing to a fall (American Geriatric Society, 2001; Peeters, van Schoor, & Lips, 2009, p. 798; Pluijm et al., 2006, p. 418; Tinetti, 1994, p. 757; Tinetti and Kumar, 2010, p. 260). With respect to most health-related and other potentially fall-related characteristics, recurrent fallers were significantly worse off than non- and once-fallers (Stel et al., 2003, p. 1360). “Recurrent fallers were more prone to have a fall-related fracture than those who were not defined as recurrent fallers” (Pluijm et al., 2006, p. 418). These older adults are at a greater risk for falling and incurring injuries precisely because they have fallen before.

## **Multiple Factors**

According to the American Geriatrics Association (2001), “falls generally result from an interaction of multiple and diverse risk factors and situations” (p. 664). The more risk factors present, the greater the likelihood of a fall. The risk of falling increases as these factors increase, indicating that falling is a multifaceted health problem that results from the different effects of coexisting conditions and the treatments being used to manage them (Godfrey & Studenski, 2010, p. 185; Nevitt et al., 1991, p. 169; Tinetti et al., 1988, p. 117; Tinetti, 1994, p. 757). Falling may also result from the accumulated effect of multiple specific disabilities, such as diabetes and circulatory disorders (Godfrey & Studenski, p. 186; Tinetti, Williams, & Mayewski, 1986, p. 431). According to Kelley-Moore, Schumaker, Kahana, & Kahana (2006), for older adults, each additional health problem was associated with a higher perception of disability, regardless of actual physical or cognitive functional status (p. 135).

Because multiple factors influence falls, multiple interventions are called for and have proven to be the most successful in reducing the number of falls experienced by older adults. “An interdisciplinary approach to older adults who have fallen helped decrease further falls and limited functional impairment” (Schwab, Roder, Morike, & Thon, 1999, p. 928). Successful programs implement various elements such as education, exercise (especially formalized programs), home assessments, medication modifications/withdrawal, and dietary interventions (adding Vitamin D<sub>3</sub> and calcium to the diet) (Hosseini & Hosseini, 2008, p. 19; Oakley et al., 1996, p. 248; Schwab, Roder, Morike, & Thon, 1999, p. 928; Tinetti & Kumar, 2010, p. 261).

## **Fall Risk Screening Tools and Assessments**

Many screenings and assessments have been developed to help measure the risk factors for falling in older adults. They include self-report surveys such as The Yale Physical Activity

Survey (Bixby et al., 2007) and Short Form-36 Health Survey (known as SF-36) (McHorney, Ware, Lu, & Sherbourne, 1994); physical screenings, such as the Timed Get-Up-and-Go (TUG) (Podsiadlo & Richardson, 1991) and Berg Balance Scale (BBS) (Talley, Wyman, & Gross, 2008); cognitive measures such as the Mini-Mental State Exam (MMSE) (Folstein, Folstein, & McHugh, 1975); and vision tests such as visual acuity and contrast screenings. The health community felt the need for a more thorough instrument, so an assessment called The Falls Risk for Older People in the Community (FROP-Com) was developed at the National Ageing Research Institute in 2001 (Russell, Hill, Blackberry, Day, & Dharmage, 2008, p. 634).

**Yale Physical Activity Survey (YPAS).** Some screening tools are meant to assess the respondent's level of physical activity as a way of determining fall risk. The YPAS is a questionnaire that can be administered face to face or over the phone. It focuses on community-dwelling older adults' physical activities including those in categories such as household chores, recreation, and structured exercise. It works well in evaluating physical activity in older adults because it examines low-intensity activities. Participants report how much time they spend on a wide array activities as well as the frequency and duration of physical activity in five categories (i.e., vigorous activity, leisurely walking, moving, standing, and sitting) during a typical week (Bixby et al., 2007, p. 1410; Harada, Chiu, King, & Stewart, 2001, p. 964). According to Young, Jee, & Appel (2001), the YPAS has relatively good reliability as compared with the Physical Activity Recall (PAR) test: "Significant correlations were found between PAR measures and the YPAS dimensions that assessed the global and vigorous aspects of activity" (p. 956). In addition, in the original validation aspect of the study, the analysis of 25 subjects showed that weekly energy expenditure and daily hours spent sitting correlated with resting diastolic blood pressure (Young, Jee, & Appel, 2001, p. 956).

**Short Form (SF)-36.** The SF-36 is another self-report survey that assesses eight separate areas to determine health-related quality of life. This screen may also be conducted in person or over the phone. Sections of the SF-36 include role limitations due to physical health issues, vitality, pain measurement, role limitations due to mental health issues, ability to function, mental health, social functioning, and the respondent's insight regarding his or her health (Harada, Chiu, King, & Stewart, 2001, p. 965; McHorney, Ware, Lu, and Sherbourne, 1994, p. 44). The internal consistency reliability of these measures for people over the age of 65 yr is 0.92 for physical functioning, 0.78 for general health perceptions, 0.88 for mental health, and 0.85 for pain (Harada, Chiu, King, & Stewart, 2001, p. 965; Martin, 2007, p. 224). Validity studies show good predictive, criterion, discriminant, and convergent validity (Martin, 2007, p. 224).

**Timed Get-Up-and-Go (TGUG).** Some screening tools are specifically designed to identify persons with balance deficits, which may predict a risk of falling. One of these instruments is the "Get-up-and-Go" (GUG) test that has the subject rise from a chair, walk 3 m, turn around, return to the chair, and sit down. Performance is graded on a 5-point scale in which 1 is normal and 5, severely abnormal. The test was further changed (to eliminate subjectivity) to include the time taken to complete the test: the TGUG test (Podsiadlo & Richardson, 1991, p. 142). Wall, Bell, Campbell, & Davis (2000) have modified the test to measure each of its component parts so that it is more sensitive in judging problem areas, calling it the Expanded Timed Get-Up-and-Go, but both tests adequately demonstrate balance deficits in their subjects (p. 112). This screening tool may be administered by any health care professional and has been shown to have both sensitivity and specificity above the median (Perell et al., 2001, p. 765). According to Podsiadlo & Richardson (1991), the TGUG test "demonstrated good reliability and

moderate correlation to the scores on the Berg Balance Scale and gait speed” (Podsiadlo & Richardson, 1991, p. 147).

**Berg Balance Scale (BBS).** The BBS, although originally developed just to look at balance, is a validated instrument that predicts the risk of falling and measures the ability to perform 14 balance tasks. The participants are rated on the performance of each task using a four-point Likert scale. A higher total score indicates better balance performance by the individual (Talley, Wyman, & Gross, 2008, p. 331). The BBS, when combined with a person’s fall history, has been reported to have a sensitivity of 91 per cent and a specificity of 82 per cent to classify those community-dwelling older adults who fall and those who do not (Ness, Gurney, & Ice, 2003, p. 634). Reliability coefficients are: interrater intraclass correlation: 0.98; interrater  $r$ : 0.88; and internal consistency: 0.96 (Amini, 2007, p. 289). Validity was based on comparisons to scores w/ Barthel Index ( $r= 0.67$ ); Timed Up and Go ( $r= 0.76$ ), and Tinetti Balance Test ( $r= 0.91$ ) (Amini, p. 289).

**Mini-Mental State Exam (MMSE).** Cognitive screenings show levels of global cognitive functioning. The MMSE is considered a dementia screening instrument (Federman, Cole, & Sano, 2009, p. 670). According to Folstein, Folstein, and McHugh (1975), “it is a quantified assessment of cognitive state of demonstrable reliability and validity; it makes more objective what is commonly a vague and subjective impression of cognitive disability during an assessment of a patient” (p. 195). Cognitive status is a good predictor for the risk of falling in the older adult. Scores of less than 20 points indicate that the person may be at risk for a fall. Test-retest reliability is 0.887; interrater reliability is 0.82. Concurrent validity is demonstrated in correlations with the Wechsler Adult Intelligence Scale at 0.776 (Cooke & Kline, 2007, p. 537).

**Falls Risk for Older People in the Community (FROP-Com).** The FROP-Com assessment can be used by health professionals in emergency departments (EDs), primary care, hospital outpatient clinics and/or private homes. It was modified from the Falls Risk for Hospitalised Older People (FRHOP) to suit community needs. The FROP-Com covers 13 risk factors in 26 questions. Individual scores are totaled and provide an overall score of falls risk, with higher scores indicative of greater risk (Russell, Hill, Blackberry, Day, & Dharmage, 2008, p. 635). The intra-rater reliability for the FROP-Com was 0.93 and for inter-rater reliability was 0.81.

### **Fear and the Fear of Falling**

#### **Fear**

A person of any age may fall, and a person of any age may have fears. However, fears change as people age. Previous studies of older adults' fears revealed these fears: "changes in sensory functioning, mental decline, isolation or loneliness, strangers, separation from loved ones, dependence upon health care providers, falling, and loss of control of bodily functions" (Kogan & Edelstein, 2004, p. 398). Kogan and Edelstein's study (2004) revealed several additional fears: the poor well-being of loved ones, diminished health, physical disability, criminal attack, burdening loved ones, loss of sight, and loss of hearing (p. 400). According to an AARP survey of civic involvement, "59% of 1500 adults older than 50 years of age agreed with the statement 'I hate to depend on other people'" (Cannuscio, Block, & Kawachi, 2003, p. 397). The fear of criminal activity in an older adult's environment can lead to self-restriction of personal and social activities and avoidance behaviors (Waters & Neale, 2010, p. 49). Psychological symptoms, such as fear and anxiety, have a reciprocal relationship with physical problems: an illness may cause the older adult to experience anxiety, or fear may bring about

physical problems, such as a heart attack. Medication may also play a role in the interchange between physical and psychological issues. Medication may mimic anxiety symptoms such as lack of sleep, which then could precipitate similar troubles in regard to physical problems (Kogan, Edelstein, & McKee, 2000, p. 114).

### **Fear Assessments**

Researchers have developed assessments to help determine the types of fears older adults have and the strength of those fears. According to Kogan and Edelstein (2004), the most valid and reliable assessment is the Fear Survey Schedule II for older adults (FSS-II-OA) (p. 406). Other tests include the Worry Scale (WS), the State-Trait Anxiety Inventory (STAI), the Fear Questionnaire (FQ), and the Geriatric Depression Scale (GDS) (Kogan, Edelstein, & McKee, 2000, p. 116, 119, 121).

**FSS-II-OA.** This is a self-report survey that asks questions about specific objects/situations that older adults fear, including falling, inability to care for oneself, diminished health, and mental decline. It also asks “To what extent does this fear interfere with your daily life (e.g., daily routine, job, social activities)?” (Kogan & Edelstein, 2004, p. 400). According to a study by Kogan and Edelstein (2004), FSS-II-OA is a content-valid, reliable, and construct valid index of older adult fears and fear interference with daily life (p. 405).

**Worry Scale (WS).** The WS is a self-reporting questionnaire which contains 35 items designed to assess worry specifically in older adults (Kogan, Edelstein, & McKee, 2000, p. 116). The WS measures worry pertaining to financial, health, and social issues. In research conducted by Kogan, Edelstein, and McKee (2000), adequate test–retest reliability was found (p. 116). Modest convergent evidence was found for the construct validity of the WS with moderate relations established with the STAI Trait scale ( $r=5.57$ ), and the STAI State scale ( $r=5.41$ ).

**State-Trait Anxiety Inventory (STAI).** The STAI was developed by Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983) and comprises 20 state questions and 20 trait questions and is designed to evaluate a general anxiety level (Kogan, Edelstein, & McKee, 2000, p. 119; Sharaf & Ibrahim, 2008, p. 30). State anxiety can be referred to as a more temporary condition, while trait anxiety is a long-term, general condition (Speilberger, n.d.). Individuals respond to each item on a four-point Likert scale (Kogan, Edelstein, & McKee, 2000, p. 119; Speilberger, n.d.). Kogan, Edelstein, and McKee (2000) reviewed evidence of two different studies of the STAI that revealed that reliability of the STAI was high: in the Trait Scale the reliability was  $r= 0.88$ ,  $r=0.92$  and in the State Scale the reliability was  $r= 0.90$ ,  $r= 0.94$ . Construct and concurrent validity were moderate when compared to the WS (p. 118).

**Fear Questionnaire (FQ).** The FQ is a 15-item inventory designed to assess the severity of avoidance behaviors related to agoraphobia, social fears, and fears regarding injuries involving blood (Kogan & Edelstein, 2000, p. 121; Cox, Parker, & Swinson, 1996, p. 497). Again, this screening tool uses a Likert scale to answer the questions and it can be self-administered. This test was not created specifically for older adults. Poor test-retest reliability was noted, as was convergent validity when the test was given to older adults (Kogan & Edelstein, 2000, p. 121).

**Geriatric Depression Scale (GDS).** The GDS was developed by Yesavage et al. (1982-1983) to assess affective, cognitive, behavioral, and physical disturbances associated with depression among older adults. It does not require a trained assessor to be administered (Debruyne et al., 2009, p. 557). The GDS is a self-report screening tool. The scale is made up of 30 yes-or-no questions, with a total score ranging from 0 to 30. A higher score indicates greater depression (Sharaf & Ibrahim, p. 30). Assessing the reliability of these tests specifically for older



adults is finally gaining attention in research (Kogan & Edelstein, 2004, p. 398), although the GDS has been reliably established for older adult use. In a study by Debruyne et al. (2009), the GDS-30 appears to be a reliable screening instrument for depressive symptoms in a group of patients diagnosed with a mild cognitive impairment (p. 562). A shortened version of the GDS, the GDS-15, is a commonly used measure of depression in research with older persons. It has been well validated for use as a screening tool for Major Depressive Disorder in aged-care settings. Example items include “Are you in good spirits most of the time?” and “Do you feel that your situation is hopeless?” Each item is rated “yes” or “no” by the participant, and the total number of symptoms is summated. Identification for depression is a score of 6 or more points (Davison, McCabe, & Mellor, 2009, p. 361).

### **Fear of Falling**

**Prevalence of the fear of falling.** Fear of falling is defined by Tinetti, Richman, and Powell (1990) as “low perceived self-efficacy at avoiding falls during essential, nonhazardous activities of daily living” (p. 239). Fear of falling is one of the most prevalent fears in older adults. Older adults rate fear of falling highest among other common fears such as criminal violence, financial crisis, or an adverse health event (Deshpande et al., 2008, p. 91). According to Boyd and Stevens (2009), 12.9 million or 36 per cent of United States older adults are moderately or very afraid of falling (p. 427). The prevalence of this fear ranks even higher in older women, those with physical frailty, those who have fallen before, those who perceive they are in poor health, those with a lack of emotional support, and in persons with certain comorbidities such as rheumatoid arthritis and stroke (Deshpande et al., 2008, p. 91; Sharaf & Ibrahim, 2008, p. 28). Fear of falling may occur whether or not the person has experienced a fall (Sharaf & Ibrahim, 2008, p. 28). However, “the proportion of elderly persons acknowledging this fear range from

43-70% among recent fallers compared to 20-46% among elderly persons not reporting recent falls” (Tinetti, 1994, p. 756).

**Consequences of the fear of falling.** A fear of falling may result in loss of confidence, which in turn may lead to reduced mobility, increased dependency on caregivers and services, reduced social contact, isolation, and depression (Sharaf & Ibrahim, 2008, p. 33; Swift, 2001, p. 857). Fear of falling may also result in a decreased quality of life, functional decline, activity restriction, decreased self-efficacy, physical frailty, and loss of independence, precipitating the need for long-term care. (Boyd and Stevens, 2009, p. 426; Deshpande et al., 2008, p. 355; Friedman et al., 2002, p. 1334; Kennedy, 2010, p. 506). Bertera and Bertera, (2008) state: “Fear of falling was positively associated with avoiding common activities such as lifting, bending, walking, reaching, and going outside” (p. 57). Tinetti (2003) found that 18 per cent of older adults who fall avoid some of their regular daily activities such as walking and grocery shopping (p. 756). Deshpande et al. (2008) state: “Almost 65% of those who reported FF also reported fear-induced activity restriction” (p. 357). Suzuki, Ohyama, Yamada, and Kanamori (2002) found that “For females, walking and bathing had a highly significant relationship with fear of falling and the need for assistance with dressing and toileting tended to be significantly associated with fear of falling” [for all older adults] (p. 157). Howland, Lachman, Peterson, Cote, Kasten, Jette (1998) found that, in their study, 43 per cent curtailed activities, or had stopped doing things, because they might fall (p.551).

Research studies indicate that fear of falling can become a vicious cycle for the older adult experiencing it (Bertera & Bertera, 2008, p. 55; Deshpande et al., 2008, p. 355; Hill, Womer, Russell, Blackberry, & McGann, 2010, p. 1776). In other words, as seen above, older adults who fear falling may restrict their activities. By restricting these activities they decrease

their mobility, either within their homes and/or within their communities; the less moving around they do, the lower their physical capacity becomes, and their risk of falling increases. These self-imposed activity restrictions create even more limitations in their activities, and the downward spiral continues.

However, there appears to be less fear of falling among healthy older adults who tend to avoid risky activities (that may cause falls) without compromising daily activity (Suzuki, Ohyama, Yamada, & Kanamori, 2002, p. 160). Sharaf and Ibrahim (2008) found that participants who were engaged in leisure activities had a lower fear of falling than those who were not (p. 32). Howland and associates (1998) state that “the support of family and friends may be an important prerequisite for continuing to remain active even in the face of fear of falling” (p. 554). They propose that this may be due to encouragement from those who give support to the older adults.

### **Factors Contributing to the Fear of Falling**

**Frailty.** Frailty, as defined by Merriam-Webster Dictionary (2010), means “physically weak.” Frailty may include such things as impaired balance, lower extremity weakness, lack of stamina, poor vision, and the need for an assistive device when walking, such as a cane (Arfken, Lach, Birge, & Miller, 1994, p. 567). According to Sharaf and Ibrahim (2008) and Bertera and Bertera (2008), the two main contributing factors to fear of falling in the older adult are frailty and psychological factors (p. 28, p. 55). The CDC (2007) states that the fear of falling is worse in older adults when they have weakness in their lower bodies and/or they have balance problems. Murphy et al. (2003) also identified having a vision impairment, unsteady balance, and gait deficits as risk factors for the fear of falling (p. 945). Fletcher and Hirdes (2004) also found impaired gait to be positively associated with the fear of falling (p. 277). Functional decline is a

result of frailty in older adults, as evidenced by using an assistive device for walking and/or needing help with ADLs (Bertera & Bertera, 2008, p. 56 and Sharaf & Ibrahim, 2008, p. 32). An older adult's frailty can be real or perceived. That is, either there are physical deficits that cause the older adult to lose mobility or the older adult perceives a loss of mobility. Perceived poor health is a risk factor for fear of falling in studies conducted by Fletcher and Hirdes (2004), Filiatrault, Desrosiers, and Trottier (2009) and Howland et al. (1998) (p. 277, p. 889, p. 552).

**Psychosocial factors.** As far as psychosocial causes, the older adult may experience depression, a cognitive impairment, and/or trait anxiety. In a study of older adults conducted by Arfken, Lach, Birge, and Miller (1994), depression was found to be a risk factor for the fear of falling (p. 567). Howland et al. (1998) found that participants in their study “had significantly lower Mental Health Index scores” and should be screened for depression and anxiety (p. 552). Any of these psychosocial impairments may cause the older adult to limit physical activities, leading to isolation, which then furthers depression and/or causes a loss of confidence (Sharaf & Ibrahim, 2008, p. 33)..

**Age.** In several studies, age greater than eighty years has been shown to be a factor in developing a fear of falling (CDC, 2007; Murphy, Dubin, & Gill, 2003, p. 945). Community-dwelling women who are eighty years of age or greater have been shown to develop a fear of falling over a twelve-month period with no initial fear of falling [at onset of study] solely because of their age (Murphy, Dubin, & Gill, 2003, p. 945). Bertera and Bertera (2008) discovered that the oldest old were four times more likely to have a fear of falling than the youngest old (p. 56). “As individuals age, they encounter many obstacles that undermine their abilities, confidence and desire in conducting physical activity” (Chen, 2009, p. 433).

**Gender.** Female gender is positively associated with having a fear of falling (Bertera & Bertera, 2008, p. 56; CDC, 2007; Filiatrault, Desrosiers, & Trottier, 2009, p. 889; Sharaf & Ibrahim, 2008, p. 31). Females were significantly more likely than males to be afraid of falling (60.2 per cent vs. 36.7 per cent) in the study by Howland et al. (1998) (p. 552).

**History of falls.** Another risk factor for fear of falling in older adults is a past history of falls (CDC, 2007; Filiatrault, Desrosiers, & Trottier, 2009, p. 889). In Sharaf and Ibrahim's (2008) research, more than half of the older adults (55.8 per cent) had a previous history of at least one fall, with a total mean of 3.03 falls (p. 31). This group of previous fallers had a significantly greater fear of falling than those who had not experienced previous falls (Sharaf & Ibrahim, 2008, p. 31). Those who were afraid of falling were significantly more likely to have had a fall in the past three months and significantly more likely to have had falls requiring medical attention in the past five years (Howland et al., 1998, p. 552).

**Environment.** There are different kinds of environment. Physical environment is location in a geographical sense and a person's immediate surroundings. Filiatrault, Desrosiers, and Trottier (2009) determined that older adults living in a smaller city or rural area are more likely to be afraid of falling than older adults living in a metropolitan area or large city (p. 891). Wert, Talkowski, Brach, and VanSwearingen (2010) state that "older adults who perceive the external environment as less safe typically report more fear of falling and are less likely to be physically active than older adults living in perceived safe environments" (p. 43). In a sample of community-dwelling older adults who received home care services, Fletcher and Hirdes (2004) found that 41 per cent of clients limited going outdoors due to a fear of falling (p. 276). The social setting of the individual is another aspect of environment. A study by Filiatrault, Desrosiers, and Trottier (2009) also indicates an increased risk for fear of falling in the absence

of social support from a spouse or partner (p. 889). Conversely, an enhanced environment may foster a sense of security, enabling the residents to be more active. The sense of security may have influenced older adults in Senior Living Residences [SLR] to report a lower fear of falling (Wert, Talkowski, Brach, & VanSwearingen, 2010, p. 44).

**Other factors.** The development of a fear of falling may also be due to other measures: the circumstances of the fall, whether it was a recurrent fall, or the severity of the resulting injury (Arfken, Lach, Birge, & Miller, 1994, p. 565). Fear of falling is also correlated to chronic medical conditions (CDC, 2007), such as rheumatoid arthritis, stroke, heart disease, arthritis, and osteoporosis (Deshpande et al., 2008; Fletcher & Hirdes, 2004).

### **Fear of Falling Assessments**

Three common assessments used to indicate the presence of fear of falling are the Falls Efficacy Scale (FES), Activities-Specific Balance Confidence Scale (ABC Scale) and Survey of Activities for Fear of Falling in the Elderly (SAFFE) (Painter, 2009; Zijlstra et al.; 2007), all self-report surveys.

**Falls Efficacy Scale (FES).** The FES, developed by Tinetti, Richman, and Powell (1990), has sixteen items that help determine the amount of concern the community-dwelling older adult has regarding falling (p. 241) and can be used as a self-report measure or as part of an interview process (D'Amico & Mortera, 2007, p. 689). The FES uses common activities (such as reaching up to a cabinet) related to how the respondent feels regarding self-confidence; the respondent grades them on a scale of one to ten (D'Amico & Mortera, 2007, p. 689). The FES scale was found to be internally consistent and demonstrated good test-retest reliability, and convergent and criterion validity (Powell & Myers, 1995, p. 28). There is also a shortened version that uses only seven questions.

**Activities-Specific Balance Confidence Scale (ABC Scale).** The ABC defines fear of falling as “balance confidence,” or confidence in the ability to maintain one’s balance while completing certain selected activities (Talley, Wyman, & Gross, 2008, p.328). The ABC may be self-reported or administered by personal or telephone interview (Powell & Myers, 1995, p. 28). The ABC is a 16-point scale with ratings of whole numbers (0-100) for each item, which are then totaled and divided by 16 to get the score. Any score 80 per cent or greater demonstrates a high level of physical functioning; any score below 50 per cent shows a low level of physical ability (Myers, Fletcher, Myers, & Sherk, 1998, p. 287). The ABC scale, like the FES, was found to be internally consistent and demonstrated good test-retest reliability, and convergent and criterion validity (Powell & Myers, 1995, p. 28).

**Survey of Activities for Fear of Falling in the Elderly (SAFFE).** The SAFFE defines fear of falling as the “worry about falling” during specific daily activities. It holds that fear alone is harmless unless it leads to sedentary ways or activity restriction, interferes with judgment, or consumes the person’s thoughts (Talley, Wyman, & Gross, 2008, p.328). According to its developers, Lachman and associates (1998), “The instrument assesses fear of falling during performance of 11 activities, and gathers information about participation in these activities as well as the extent to which fear is a source of activity restriction” (p. 43). The SAFFE had good internal consistency reliability and showed convergent validity with other fear of falling tools. Concurrent validity was demonstrated as well (Lachman et al., 1998, p. 43).

### **Aging in Place**

Continuing care retirement communities [CCRCs] are a growing trend concerning seniors aging in place, or aging in community. Thomas and Blanchard (2009) offer the following definition of this phenomenon: “People working together create mutually supportive

neighborhoods to enhance well-being and quality of life for older people at home and as integral members of the community” (p. 12). The word community in this context refers to a small group of people who choose to rely on each other and to be relied upon over an extended period of time (Thomas & Blanchard, 2009, p. 12). This is a lifestyle that offers daily opportunities for social connection in the context of smaller settings, whether urban or rural. Some important qualities that this type of living embraces include inclusivity, sustainability, health, accessibility, interdependence, and engagement (Thomas & Blanchard, 2009, p. 14). In Great Britain, the Centre for Policy on Aging reports that the government is beginning to recognize “that older age is an active and inclusive time during which older people are to be treated as an integral and important part of mainstream life” (Crosby & Clark, 2008, p. 12). The qualities that are important to people as they grow older include companionship and friendship, sharing common interests, availability of support and personal care, freedom from fear of isolation, loneliness and danger, social activity and easing of responsibility for daily chores such as house cleaning, cooking and gardening (Crosby & Clark, 2008, p. 13).

### **Aging in Place: Environment**

Successful aging in place demands certain environmental design precepts. Kenyon Morgan, American Institute of Architects [AIA] (2008), advocates several design strategies to enhance living spaces, including neighborhoods with a discernable center and basing most dwellings within a five-minute walk of the center. There should be a variety of dwelling types-- houses, row houses, and apartments. At the edge of the neighborhood, there should be shops and offices of sufficiently varied types to supply the weekly needs of a household. Streets within the neighborhood should form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination. The streets should be relatively narrow and



shaded by rows of trees. This will slow traffic, creating an environment suitable for pedestrians and bicycles. Buildings in the neighborhood center should be placed close to the street, creating a well-defined outdoor room. Parking lots and garage doors should rarely front the street. Parking should be relegated to the rear of buildings, usually accessed by alleys. Certain prominent sites at the termination of street vistas or in the neighborhood center should be reserved for civic buildings, providing places for community meetings, education, and religious or cultural activities (Peck, 2008, p. 24).

### **Livable Communities**

AARP (2005) defines a livable community as “one that has affordable and appropriate housing, supportive community features and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life.” According to Wert, Talkowski, Brach, and VanSwearingen (2010), “SLR [sic] were designed in part to reduce barriers to walking, physical function, and activity for older adults by enhancing the physical surrounding for ease of navigation” (p. 43). For residents in SLR, easy access to indoor walking areas (hallways) and fitness center; walking to meals, social events, and mailbox; and volunteer opportunities within the residential community may promote physical activity (Wert, Talkowski, Brach, & VanSwearingen, 2010, p. 44). According to market research conducted by Judson (a construction group that builds CCRCs for older adults), older adults want to downsize, but not downgrade; want a strong connection with the community outside the senior living space; a cohesive master plan with multiple buildings rather than the institutional feel of one main building; and open, light-filled dwellings (Hrehocik, 2009, p. 20). Upscale finishes are important; high-end kitchens and appliances are the most sought after pieces, along with the ability for the resident to choose options; and the exterior landscape needs to mirror the

architecture of the buildings and provide a green environment (Hrehocik, 2009, p. 20). Crosby and Clark (2008) state:

Older adults say that they want retirement community housing to have many of the same features that mainstream housing has: space, with a minimum of two bedrooms; lay-out for recreation, activities, dining together, welcoming visitors and families; community and leisure amenities; and a wider choice of tenure options (p. 21).

### **Social Capital**

Successful aging in place also recognizes the concept of social capital. “It is the web of informal, voluntary, reciprocal relationships found within the mundane routines of daily life that forms the core of any society’s social capital” (Thomas & Blanchard, 2009, p. 12). Social capital is defined as “the resources available to individuals and groups through social connections and social relations with others” (Thomas & Blanchard, 2009, p. 12). Access to social capital enables older adults to maintain productive, independent, and fulfilling lives. It is the collective dimension of social capital that most sharply distinguishes it from other existing concepts, such as social networks and social support. Older individuals are at greater risk for losing critical parts of their social ties as they age, which may make them more dependent on social capital available within their communities. According to Cotter and Gonzalez (2009), those older adults with a stronger and more positive social network are significantly less likely to perceive themselves as disabled, despite their actual functional status and number of health conditions (p. 342).

### **Resilience**

Resilience is defined as “the ability to withstand mental and/or physical stress” (Taber’s Cyclopedic Medical Dictionary, 2009). Psychological resilience is a “broad construct that

represents a combination of positive traits and coping responses or behaviors that facilitate the successful management of unexpected changes or formidable stresses in one's life" (Pierini & Stuifbergen, 2010, p. 167). This ability to be resilient may come from a combination of things such as a personal value and belief system, specific personality traits, behaviors, and interpersonal resources (Pierini & Stuifbergen, 2010, p. 168). Individual resilience may depend on the person's cultural view and environmental factors as well (Pierini & Stuifbergen, 2010, p. 168). The degree of resilience a person possesses can have an effect on how satisfactory life is. A relationship has been shown in some research regarding resilience factors and acceptance, self-efficacy, personal resources/social support, interpersonal relationships, a sense of humor, being committed to persons and ideas, higher self-rated health, spirituality, and stress management (McFadden & Basting, 2009, p. 152; Pierini & Stuifbergen, 2010, p. 168). Alfieri and Borgogni (2010) feel that resilience is "the added capacity of humans to anticipate and plan for the future. At any age [sic]" (p. 602). Another way of conceptualizing resilience is to think of it as a sense of coherence (SOC). Soderhamn and Soderhamn (2010) believe a sense of coherence means that a person

has a pervasive, enduring, and dynamic feeling of confidence that stimuli in the course of living are possible to comprehend, that the available resources are sufficient in order to manage the demands placed by the stimuli, and that it is meaningful to meet these demands as worthy of investment and engagement (p. 376).

All of these concepts, in turn, have been shown to promote a higher level of physical activity, perceived health, and health status (Soderhamn & Soderhamn, 2010, p. 376).

## Continuing Care Retirement Communities (CCRCs)

### What is a CCRC?

A continuing care retirement community is an all-inclusive community that attends to the needs of the older adult across their older life spans (NCDHHS, 2003). Continuing Care is defined by North Carolina General Statutes as:

the furnishing to an individual other than an individual by blood, marriage, or adoption to the person furnishing the care, of lodging together with nursing services, medical services, or other health related services pursuant to an agreement effective for the life of the individual or for a period in excess of one year (North Carolina Division of Aging and Adult Services [NCDAAS], 2007).

Kingston, Bernard, Biggs, and Nettleton (2001) state that:

retirement communities can be seen to combine: a *retirement* [sic] element, i.e. where residents/tenants are no longer in full-time employment and this affects their use of time and space; a *community* [sic] element, i.e. an age-specific population, living in the same geographically bounded area; a degree of *collectivity*[sic], i.e. with which residents/tenants identify, and which may include shared activities, interests and facilities; and a sense of *autonomy with security* [sic] (p. 228-229).

According to the American Association of Homes and Services for the Aging [AAHSA], there are 2,240 CCRCs in the United States, and the number of older adults living in them has more than doubled in the past decade: from 350,000 in 1997 to 745,000 in 2007 (Shippee, 2009, p. 418). There is a change in the nursing home market toward concepts that may encourage more successful aging, mainly represented by “vertically integrated” housing alternatives. These types

of communities connect nursing homes to a continuum of retirement apartments, assisted living, and skilled nursing facilities (Cannuscio, Block, & Kawachi, 2003, p. 398).

### **Why a CCRC?**

The main reasons older adults choose a CCRC include: a desire for health care and medical services, a wish to remain independent, and a desire not to maintain a home (Krout, Oggins, & Holmes, 2000, p. 699). According to Jon Head of Hanover Housing Group (2009), “People living in our retirement housing tell us that they value independence, but also access to ‘a little bit of help’ makes all the difference to their quality of life” (p. 26) Wert, Talkowski, Brach, and VanSwearingen (2010) state that:

SLRs offer their residents access to services that may reduce the need for residents to participate in at-risk activities, including yard work, home maintenance, vigorous housecleaning, and stair negotiation. The enhanced environment may, in turn, create a sense of security, enabling residents of SLRs to be more active in their environment (p. 44).

In an Australian study, the move to CCRCs by older adults involve the following reasons: their children have moved away, they feel a need for increased security, the upkeep of their own property is too much to handle, they are downsizing/changing their lifestyle, the death of spouse, a medical ‘scare,’ or it is preferred by their children (McLaughlin & Mills, 2008, p.17).

### **What Does a CCRC Do?**

CCRCs are designed to provide facilities that are capable of managing the increasing needs of their clients as they age. “Continuous Care Retirement Communities allow seniors to ‘age in place’” (CarePathways, n.d.). Older adults usually join these communities when they are still able to live independently (CarePathways, n.d.; NCDAAS, 2007). For the resident, the

communities offer a range of living spaces and levels of medical care as determined by the resident's needs. In other words, a person may come into the community in good health, but may experience a decline in health over time, with a concomitant change in living space. Part of the appeal of a community such as this is the "permanence" of the older adults' situation. Even as their requirements grow, they remain in the same community, keep the same friends, and are in a location that is familiar to them. Older adults living in a CCRC are reassured that their long-term care needs will be met without the need to change facilities (AARP, 2004). In this type of community, being able to interact with friends, neighbors, familiar housekeeping staff, and the same medical staff reduces the level of stress as aging takes its toll (Rose, di Benedectis, & Russell, 2007).

Residents' needs for retirement housing, as they age, fall into four main areas: visual, body steadiness and capacity, neuromuscular, and access (McLaughlin & Mills, 2008, p. 20). Residents' visual needs include improved lighting and higher contrast between surfaces; body steadiness involves ensuring that flooring is easy to maneuver across with a lack of clutter, hidden electrical cords, and scatter rugs anchored so that they will not slip, and grab bars in place; body capacity means that all cabinets, doors, etc. are easy to lift, lower, and swing shut; neuromuscular involves changes in door and drawer handles, light switches, etc. to make them easier to use; and access means there are entrances that do not require steps or a ramp, and doorways that are wide enough to maneuver a wheelchair through (Mitka, 2001, p. 1699).

### **CCRC Housing Options**

In some CCRCs, older adults who live independently may own their living space (usually a house), while in other CCRCs, all residents rent their space. The independent residences may include cottages, duplexes/triplexes, and/or apartment living (CarePathways, n.d.). The assisted

living section usually consists of smaller apartments with more modest kitchens; residents generally are not as capable of cooking and share more meals in the community setting. The nursing home accommodations are usually one-room units with a bathroom (NCDHHS, 2003). All of these living spaces are equipped with safety features such as grab bars in the bathrooms and/or safety and security alarms. As the resident requires more assistance with everyday activities and/or encounters health problems, the person will transition to a higher level of care. At all levels of the CCRC, there are a wide range of services included in the initial contract, such as housekeeping, meals, and transportation. The communities also have a variety of amenities that are optional, such as exercise activities, crafts, trips, and/or other opportunities (CarePathways, n.d.; NCDHHS, 2003).

Most older adults enter into this type of community under a contractual basis, but policies vary by facility (NCDHHS, 2003). According to the NCDHHS (2003), an “entrance fee” is usually charged, plus a monthly fee for services provided. Since the entry into this type of community is voluntary and the care provided is so wide-ranging, CCRCs can be very expensive. Depending on the facility, residents can purchase varying levels of contracts. CCRCs may also be planned to limit entry to a certain religious denomination or have other types of restrictions (CarePathways, n.d.). The fees charged may also be modified by the services and amenities the resident wishes to have. For instance, the resident can decide how many meals/week he or she would like to share in the communal dining room and how many he or she would like to cook for him- or herself.

The NCDAAS (2007) identifies four main types of contracts prevalent throughout the industry. The first is an extensive, or life care contract, whereby the resident pays a price (commonly an entry fee and monthly fees) for his or her living and health-related services, and

there are no additional fees as care levels increase. The second type is a modified contract, where the resident pays for living and a specified amount of health-related services, through the entrance and monthly fees. This can either mean the health services are free for a certain number of days, or that the services are provided at a subsidized rate. The third, a fee-for-service contract, provides for independent living and guarantees access to health care, but it is at the going, *per diem* rate at that specific time and place. Finally, the fourth type of arrangement involves an equity contract, where the resident owns his or her dwelling and the health services contract varies (NCDAAS, 2007).

### **The Future**

As to the future, CCRCs are now focusing on prevention of physical and mental decline in older adults, rather than addressing these problems after they have occurred. Another focal point for these communities is switching from an emphasis on wellness to an emphasis on engagement. The International Council on Active Aging [ICAA] has identified eight trends that define active aging: the new relevance of electronic media for connecting the older adult to knowledge of health and other types of news important to this age group; new trends in CCRCs, including mixing older adult populations with younger generations and providing the older adult with more choices in regards to activities; maintaining mental and intellectual health; using technology to promote activity (such as the Nintendo Wii gaming system); flexibility in work and work schedules; all forms of continuing education; age-friendly ways of staying fit and active; and being proactive concerning health by focusing on prevention and an active lifestyle (Hrehocik, 2008, p .14). Mara & Ziegenfuss (2000) have identified the following factors as part of the coming changes in managing a CCRC: empowerment of clients and staff through teams, governing committees, and participative management; increased involvement of clients in their



care and in the evaluation of their care; increased communication of clients and staff with outside resources; and the ability of clients and staff to develop a healthful social, physical, emotional, and psychological environment (p. 116).

### **Cypress Glen**

Cypress Glen Retirement Community is a CCRC in Greenville, North Carolina, owned by the United Methodist Retirement Homes, Inc. [UMRH] and is a not-for-profit, faith-based corporation which opened in 1987. Cypress Glen is one of four such residences owned by UMRH. The mission of Cypress Glen is to “provide quality care and services for an inclusive and diverse population of senior adults” (Cypress Glen, 2006). Its vision is to be the provider of choice for retirement and continuing care services in North Carolina. Cypress Glen professes values important to the community: human dignity, ethical practices, financial integrity, benevolent care, workforce excellence, continuous quality improvement, governance accountability, public disclosure and accountability, community involvement/collaboration, and education. All of these guidelines were adopted in 2006.

### **Physical Layout and Finances**

Cypress Glen encompasses 91 acres and offers the following choices for living space: cottages, duplexes and triplexes, and apartments. Total living space ranges from 230 square feet for a studio apartment to 2, 250+ square feet for their largest cottage, the Evergreen. There are 199 independent living residences, 60 Health Center beds (Assisted Living and Skilled Nursing), and 12 memory care beds, which cater to residents with varying types, degrees, and stages of dementia. There are various community facilities, including a dining room, wellness and fitness center, game room, computer lab, library, a chapel, a rehabilitation area with treatment rooms, a small gym and a small pool; an art studio/craft room, a multi-purpose auditorium, a

beauty/barber shop, walking trails, and a resident gardening area. In the living spaces, Cypress Glen provides wall-to-wall carpeting, full-size kitchen appliances, individualized temperature control, and cable television. Residents own their cottages; the duplexes and triplexes and apartment spaces are rented on a monthly basis.

Cypress Glen charges an entrance fee to all residents. This is based on the type of residence the person wants: the larger the size, the larger the entrance fee. The entrance fees currently set at Cypress Glen range from \$18,000.00 for a studio apartment all the way to \$240,000.00 for a cottage. Monthly service fees are also charged, again based on the size of the residence. For a cottage the fee can be \$3,800.00 per month and for a studio apartment, \$1,200.00 per month.

### **Services**

Services included in these monthly fees are a meal plan (25 meals allotted per month), utilities, weekly housekeeping, grounds keeping, building/appliance maintenance, 24 hour security, transportation, including weekly shopping (grocery and general purpose), the emergency communication system, special diets, document copying, and other services. Optional services include dry cleaning, tailoring, and postal services. In addition to the service provided by the Assisted Living and Skilled Nursing segments of the facility, Cypress Glen offers a service called "Independence Plus." This allows the older adult with some physical limitations (such as arthritis or someone recovering from hip surgery) to retain independence, but receive assistance with activities of daily living in his or her own residence, rather than moving to the Assisted Living section. Any services above and beyond what is routinely included are added to the monthly fee. For example, if a resident ate an extra meal and got a haircut, those charges

would be added to the bill and the total for the month would be recalculated. All services and activities fall under the direction of the Resident Programming and Services Department.

## **Demographics**

Cypress Glen's current population is 282 residents, including 37 couples, of all races and religions. The average age of the independent living residents is 83, and there are more female than male residents. In this study, the average age is slightly greater than 85. There are independently living adults in cottages, duplexes/triplexes, and apartments. Qualifications for entry into Cypress Glen include an age of 55 years or greater, an ability to live independently, and certain financial criteria.

## **Summary**

To summarize, older adults are prone to having falls, and, in doing so, they may seriously injure themselves or even die as a result (NCDHHS, 2007). The cost of these injuries is enormous, and only promises to increase as the Baby Boomers join the ranks of the older adult population (CDC, 2007). Factors contributing to falls can be extrinsic (related to the environment in which the older adult lives) or intrinsic (related to the health of the individual older adult). Older adults have fears specific to their age including isolation, separation from loved ones, being dependent on health care providers, sensory dysfunction, and mental decline (Kogan & Edelstein, 2001, p. 398). The fear of falling can either exacerbate these fears or be a result of these fears. The fear of falling may lead many older adults to restrict their activity level, which may lead to further loss of balance and stamina, social isolation, and/or loss of mobility. Living in a CCRC may or may not help lessen some of those fears, due to such factors as design of the facility, ease of use of the facility, social contacts, and availability of health care. Cypress Glen embodies the ideas of community living for older adults, with a wide range of services and

amenities as well as a community design that enhances social capital as well as security and space. The experiences of older adults living independently in a CCRC will help further my understanding of the sources and consequences of falling and the fear of falling. As a result, there may be further development of interventions that will help reduce this fear and lessen the frequency of falls among adults living in a CCRC.

### **Phenomenology**

To conduct this study, I used a qualitative research approach called phenomenology. “Phenomenology implies an epistemology for social science research in which the question of meaning is central” (Skuzza, 2007, p. 450). The purpose of phenomenological research is to reveal the essential meaning of a phenomenon by distinguishing its features and to describe the meaning of a phenomenon within the context of how it is experienced (Dahlberg & Drew, 1997, p. 304; Hein & Austin, 2001, p. 3; Skuzza, 2007, p. 450). Dahlberg, Drew, and Nystrom (2001) describe it as “The description and elucidation of the everyday world in a way that expands our understanding of human experience” (p. 49).

### **Transcendental Phenomenology**

Phenomenology itself has more than one way of looking at an experience: its specific origins are found in the work of Edmund Husserl, whose conception of phenomenology is described as transcendental phenomenology (Ihde, 2008, p. 2; McConnell-Henry, Chapman, & Francis, 2009, p. 8). Husserl believed that meaningful experiences and their essences belong to the lifeworld and the everyday manner in which we live our lives. He believed that one’s “visible” body was the starting point for experience, but that each of us possess, “behind” our bodies, “invisible” essences and experiences that cannot be separated from our visible body. “My body is a subject, I am my body, my body is me” (Dahlberg & Dahlberg, 2004, p. 270).

Understanding a given experience means that we have to combine the visible with the invisible. Transcendental phenomenology also contends that there are essential experiences for any given phenomenon (McConnell-Henry et al., 2009, p. 11).

There are other ideas central to transcendental phenomenology. Transcendental researchers seek to pare away the “outside” appearances of the experience by a process called phenomenological reduction (McConnell-Henry Chapman, & Francis, p. 10). Reduction strips the experience down to its elemental meaning, revealing a true, and at times collective, experience. Following along with the concept of reduction, Husserl devised “bracketing” to describe a way of removing “the world of interpretation” to eliminate the influence of the researcher (Finlay, 2008, p. 5). By setting aside any of the researcher’s preconceived notions about the subject, the essence of the experience can stand alone (McConnell-Henry et al., 2009, p. 10). Another key consideration for transcendental phenomenologists is “intentionality of consciousness” (Sadala & Adorno, 2001, p. 283). This concept means that one’s consciousness is always directed toward understanding the world. In other words, all human actions have meaning as they are understood and experienced from an individual’s consciousness (Sadala & Adorno, 2001, p. 283). Husserl also believed that meaning is derived from a situation (Dahlberg & Dahlberg, 2004, p. 271).

### **Hermeneutic Phenomenology**

Martin Heidegger rooted his ideas in Husserl’s phenomenological perspective, but shifted to a more historical–cultural–language base and created hermeneutic phenomenology (Ihde, 2008, p. 2; McConnell-Henry, Chapman, & Francis, 2009, p. 8). Hermeneutic phenomenology posits that meaning is brought about primarily by a person’s place in the world. Meaning and experience cannot be separated from each other (often referred to as “being-in-the-world”)

(McConnell-Henry et al., p. 8). In other words, a person's experience depends on the meaning already brought to the phenomenon, in direct contrast to Husserl's assertion that meaning is taken from an event (Hein & Austin, 2001, p. 6).

This type of understanding of the phenomenon impacts the researcher as well. Heidegger understood people exist in a social world, and because of this, a person's experiences are accessible to others. By studying the participants' experiences, the researcher assimilates the knowledge. This experience is then non-extractable from the rich context surrounding the phenomenon (McConnell-Henry et al., p. 11). Finlay (2008) states:

Heidegger, Gadamer and Merleau-Ponty, in line with their view that we cannot escape our historicity and our own personal 'take' on the world, extend the scope of presuppositions to include "foreunderstandings" and suggest the possibility of *exploring* their meaning, content and impact (p. 5).

In fact, in hermeneutic phenomenology, the researcher's experience is acknowledged and given the title of "horizon" ("range of vision from a particular vantage point") (Hein & Austin, 2001, p. 7). This is in direct contrast with Husserl's approach, whereby the researcher's understanding and interpretation is subtracted from the actual experience.

## CHAPTER 3: METHODOLOGY

### **Introduction to Methodology: Phenomenology**

I chose a phenomenological approach to my research so I could more fully understand what falling and the fear of falling meant to the residents at Cypress Glen. Phenomenologists believe: “there is a structure and essence to personal experience that can be communicated to others in a systematic way” (Luborsky & Lysack, 2006, p. 336). I believed phenomenology would allow me to explore the data from an intimate standpoint, and would provide me with a methodical description of the thoughts, emotions, and images these residents experienced. I then added a picture of life at Cypress Glen because “phenomenological researchers conceptualize the person and the environment as a whole” (Luborsky & Lysack, 2006, p. 337). Phenomenology’s early developers described phenomenology as a way of “questioning and conceptualizing thought” (Luborsky & Lysack, p. 335). Only by examining the thoughts concerning falling and the fear of falling through the people who have actually experienced it, can we as researchers and therapists begin to capture the nature of the problem and how to address it.

I selected hermeneutic phenomenology as opposed to transcendental phenomenology for this research because of its emphasis on language and the way it involves the researcher. These concepts in hermeneutic phenomenology were particularly applicable in studying the residents at Cypress Glen. First, meaning arises through language and understanding (McConnell-Henry, Chapman, & Francis, 2009, p. 11; Richards & Morse, 2007, p. 49). Therefore, the actual words the participants used to depict their thoughts were crucial to the study. I analyzed the words and language used to describe the participants’ experiences of falling and the fear of falling, and their descriptions of Cypress Glen. The hermeneutic approach allowed me to accentuate the description and experience of the phenomena, rather than paring the phenomena down to the

core representation. While I searched for and discussed commonalities, the hermeneutic approach could not ignore the richness and individuality of each lived experience. The research went beyond the essence or nature of the experience in part because Heideggerian phenomenology is situated in time, space, and mood (McConnell-Henry, Chapman, & Francis, 2009, p. 11). A participant's understanding of a fall, for example, was reliant on *where* and *when* the fall occurred; then *what was going on at the time* was added: "truth is intertwined within perception" (McConnell-Henry, Chapman, & Francis, p. 12). In other words, not only were the time and the space crucial to the understanding of a fall, but also how the participant was feeling in time and space. This belief also applied to ideas concerning the fear of falling and how the participants felt about Cypress Glen.

These hermeneutic concepts also pertained to the researcher when investigating the experiences. Hermeneutic phenomenology sees the researcher as bringing her own knowledge and perspective to the study, something Heidegger termed "fore-structure" (McConnell-Henry, Chapman, & Francis, p. 8). Unlike Husserl, Heidegger believed that it was impossible to rid one's self of prior knowledge, and that the prior knowledge actually helped the researcher understand and interpret the presented data (McConnell-Henry, Chapman, & Francis, p. 9). My thoughts regarding falling and having a fear of falling were reflected in the data. Finally, hermeneutic phenomenology asks the researcher to identify themes, reflect on them, write about them, reflect again, and rewrite again until a thorough knowledge of the subject is reached (McConnell-Henry, Chapman, & Francis, p. 11; Richards & Morse, 2006, p. 52). As a researcher, I became part of the participants' experiences and was able to understand the phenomena from within by examining and reexamining the data. The participants' voices and the contexts surrounding their experiences were the gateway to understanding. I came to know my



participants' understanding of falling and the fear of falling and what life was like at Cypress Glen by my immersion in their lives and the contexts surrounding the phenomena.

### **Recruitment**

I was able to access the Cypress Glen community through my thesis director, who had conducted research at Cypress Glen in the past. She introduced me to the Director of Rehabilitation at Cypress Glen, who was very familiar with the residents. The Director of Rehabilitation was able to suggest to me names of possible participants. The Director of Rehabilitation and I started with the criterion of residents living independently at Cypress Glen, then started recruiting alphabetically from that list. Because some of the residents at Cypress Glen on the primary list were unable to participate due to time constraints or lack of interest, the Director of Rehabilitation and I collaborated on other possible participants throughout the recruitment process. To begin recruiting, I contacted the residents via phone and introduced myself. I then gave the residents a brief synopsis regarding my research area of interest, the amount of time to which they would likely need to commit, a description of the types of questions I might pose during the interview, and options concerning where I would meet with them. If they were available, I then set up a time and place for an interview, which was to last one to two hours. I looked to recruit a purposeful sample: participants who could enhance, deepen, and relate information relevant to the research question (Coyne, 1997, p. 627).

### **Sampling and Selection**

The setting for my study was Cypress Glen Retirement Community, a CCRC in eastern North Carolina. Residents who lived independently at Cypress Glen comprised the participants of my study. Wert, Talkowski, Brach, and Van Swearingen (2010) defined independence as older adults who “do not require the assistance of another person to perform their basic day-to-

day activities, such as bathing, toileting, dressing, cooking, and light housecleaning” (p. 41). For the purpose of this study, I defined “living independently” as residents who were able to function in their own residence with no or minimal assistance. These residents were scattered throughout various buildings at Cypress Glen and maintained residences of varying sizes, including cottages, a duplex, and apartments.

Within purposeful sampling, there are several ways to select participants, including typical case (participants who can illustrate basic concepts), extreme/deviant (participants show the farthest apart examples of the question), and maximum variation (participants demonstrate as much variety as possible) (Coyne, 1997, p. 628). I used a purposeful sample of participants that had maximum variation. In this manner, the phenomena could be understood from as many different perspectives as possible. These perspectives, while presumably different, also had some commonalities that could be explored. Richards and Morse (2007) believe the researcher who chooses purposeful sampling has participants “who know the information required, are willing to reflect on the phenomena of interest, have the time, and are willing to participate” (p. 195). The sample I chose was based on the following inclusion criteria: residents that were adults ages 65 and older, of any gender, of any ethnicity, living independently at Cypress Glen, willing to participate in one or two interviews regarding falling and the fear of falling, and who would voluntarily sign a consent form to participate. My exclusion criteria were adults younger than 65, non-residents of the Cypress Glen or those who were not living independently at the Cypress Glen, those who could not speak English, and anyone who had a traumatic brain injury, aphasia, a developmental disability, or who was mentally incompetent.

## **Gaining Access**

Following the approved protocol from the East Carolina University and Medical Center Institutional Review Board [UMCIRB] (Appendix A), I gained permission from the Director of Cypress Glen to conduct my research. I first toured the facility with my thesis director and the Director of Rehabilitation to familiarize myself with the layout of the buildings and grounds. The Director of Rehabilitation related the history of Cypress Glen, along with other basic facts. The Director of Rehabilitation also pointed out the various wings of the building and what types of living space and common spaces were available in each area. I was also shown the cottages and duplexes/triplexes that are in a specific area on the grounds and the open space behind the buildings, which contain a walking trail and a vegetable garden. Each resident was allotted a small plot in the vegetable garden in which to grow whatever vegetables they chose.

I obtained floor plans for the various types of residences and a brochure with information regarding the amenities, services, and frequently asked questions. I also received financial information regarding entry into Cypress Glen, maintaining a residence there, and what type of contract was available for continuing health care and their respective costs. In addition, I was given three newsletters devoted to sharing information about the facility, the people in it, and the greater community of CCRCs in North Carolina. I recorded my observations regarding the community in my field notes.

I was able to come and go at Cypress Glen, and did so several times throughout my research. I spoke with the Director of Rehabilitation on several occasions. She continued to enlighten me about the facility throughout the study, answering questions regarding usage of the rehabilitation area, the provision of mobility aids, and names of other staff who could answer questions that she could not. I spoke with the Marketing Assistant regarding the demographic

information needed for my research, such as number of males vs. number of females in the total population. I also talked with the Executive Director of Cypress Glen about how and why the facility was run. I observed several staff members, including other therapists, receptionists, cleaning staff, maintenance men, and wait staff as they did their jobs. Because of the essentially free access given to me by Cypress Glen, I was able to understand more about how this specific facility was run and the people who worked and lived there. I recorded my observations and any ideas generated by this part of my research in my field notes.

### **Methods**

I began conducting my research in the Fall of 2009. According to Creswell (2007), when conducting phenomenological research, “the process for collecting information involves primarily in-depth interviews” (p. 131). The residents were allowed to choose the location for the interview, so they would feel comfortable. With two exceptions, I interviewed all of my participants in their homes. In one instance, I met the resident in the rehabilitation area at his request. I met the other resident in a small parlor in one of the residence wings due to a project that left her apartment space too cluttered to move around in easily. I wore my ECU nametag as a means of identification. My interviews were conducted face-to-face and generally one-on-one, due to the intimate nature of what was being discussed, with one exception. Regarding the exception, two residents who were roommates indicated that conducting their interviews at the same time was acceptable.

I used a *LiveScribe* digital recording pen, which allowed the user to audiotape an event and take notes simultaneously. *Livescribe* also provided a free software package that enabled the user to download the information stored on the pen onto a computer. After an interview was over, the recording and the notes could both be transferred to the computer through a USB

connector. The pen was also capable of storing a certain number of events itself because it had four gigabytes available for memory. The *LiveScribe* pen was capable of audiotaping because it contained a digital recording device within the structure of the pen, with a built-in speaker and microphone. It let the person using it record the information as it was heard while taking notes. *Livescribe* required the use of a special dot-matrix notepad for note-taking, which allowed an infrared camera embedded in the tip of the pen to visually record the notes while audiotaping. Later, the *Livescribe* pen could play back the audio piece of the interview itself, with or without headphones, or the user could access the same information through the files downloaded onto the computer. The *Livescribe* pen could be “reminded” about a particular interview that occurred by placing the pen at any point on a given page in the notepad. This would cause the pen to replay the audio portion of that interview from that point on the page forward. This feature was used to help me transcribe the entire interviews initially, and then afterwards go back and relisten to particular sections of the interviews for further clarity. If there was an area I wanted to revisit, I could simply place the tip of the pen at that point on the notes pages, and the interview would pick up from that spot (<http://www.livescribe.com/en-us/smartpen/pulse/>, n.d.). In addition, I could use the computer in the same manner, by placing the cursor over the section of the interview in which I was interested. Because of the confidential nature of these interviews, any transcribing and/or listening to of interviews was done with the use of headphones only.

After introducing myself to the participants, all information on the consent form (Appendix B) was read aloud. The participants were free to ask questions regarding confidentiality and any other concerns prior to signing the form and beginning the interview process. The participants then kept a copy of the consent form for their records with my contact

information for any further questions and concerns, and I kept a copy with their signature to confirm that I had gone over the confidentiality notice with them.

I then administered the MMSE (Appendix D) to determine where the participant fell on the scale in regards to his or her current mental acuity. The MMSE is a short test (with the highest possible score being thirty points) used to screen for cognitive impairment. It takes approximately ten minutes to conduct and it assesses memory, math, language use, motor skills, comprehension, and orientation (Hill, 2008). Scores of greater than or equal to 25/30 are considered to be in the normal range (see Appendix F for participants' results). The MMSE can be used to determine a person's cognitive status at a given point in time or be given multiple times at specific intervals to check for changes in cognitive status over time (Alzheimer's Association, 2010). It is often used as a screening tool to detect dementia (Federman, Cole, & Sano, 2009, p. 670). I was not using the MMSE on an exclusionary basis, but to see how the participants fared cognitively at the point in time of the interview. If a participant scored less than 25, I would then know to phrase my questions in a way that would be more easily understood by the participant.

Next, we began the interview process. Participant interviews were the single most important route to understanding the experiences of the participants. I prefaced the interviews by explaining the way the *LiveScribe* digital recording pen worked, and letting the participants know when I was actually recording. I had engendered a short list of "grand tour" questions modeled on previous research conducted by my thesis director (Appendix C). "Grand tour" questions were designed to emphasize the central topic and keep the participant directed toward that topic (DiCicco-Bloom & Crabtree, 2006, p. 315; Richards & Morse, p. 132). I used an unstructured, interactive approach in my interviews, simply allowing the participant to share his

or her story (DiCicco-Bloom & Crabtree, 2006, p. 315; Richards & Morse, 2006, p. 113). In this way, the participant very much led the interview. My two overarching questions were “What does the experience of falling mean to you?” and “What is your experience of the fear of falling?”

I interviewed fifteen participants regarding these two topics. I developed the broad questions by thinking about my research question, topics I discovered related to falls, and topics generated regarding living at a CCRC. The questions came about through conversations with my thesis director, another member of my thesis committee, the Director of Rehabilitation at Cypress Glen, and from reading fall-related and CCRC-related literature. A probe is a type of question that attempts to garner further information from the participant. Once the participants had begun answering the question about falling, I was able then to use follow-up probes. I narrowed the focus by asking questions such as “Where were you when the fall occurred?” and “What happened after you fell?” In this manner, the participant could provide more information, but within the framework of their story and continuing to be led by what was important to the participant (Richards & Morse, 2006, p. 113).

Finally, I employed a strategy that made use of the participants’ own words through asking them to complete a poetry activity (Appendix E). They were requested to come up with words or phrases that came to their mind when they thought about falling and the fear of falling. Then I asked them to select the words that best represented what they thought and to use those words and phrases to create a short, haiku-type poem—something very simple, about three lines long. That way, I incorporated their personal language-- another link to grasping the meaning of these experiences. These poems, words, and phrases tended to mirror the feelings and thoughts

expressed during the interviews. The participants most frequently mentioned independence, age, caution, and activity in relation to falling and the fear of falling.

### **Data Sources and Types**

My data sources were residents of the CCRC, myself, the Director of Rehabilitation, the Executive Director of Cypress Glen, and the Marketing Assistant at Cypress Glen. In addition to the interviews, the MMSE, and the poetry activity completed by the participants, I used my field notes, researcher's log, researcher's journal, and demographic and general information regarding Cypress Glen. These data types added to the understanding of my research question and prompted new ways of looking at the data. The MMSE gave me better insight into my participants' cognitive status, which allowed me to adjust my questions to suit the level on which they were functioning.

I looked at data from current and past scholarly journals, occupational therapy books, brochures, and internet websites, both governmental and private, to broaden my knowledge of falls, the fear of falling, and CCRCs before beginning my interviews. This allowed me to develop questions that would prompt descriptive responses from my participants. I examined my biases and assumptions to ensure that the questions I chose did not lead the participants' responses down any particular path. I anticipated the interviews would last one to two hours and would occur at a place and time convenient and confidential for the participant. During this time, the participants would also complete the poetry exercise.

### **Researcher's Field Notes**

According to Knight (2009), field notes are "handwritten notes taken during an interview or fieldwork and immediately after an interview or being in the field" (p. 4). I recorded field notes during and after each interview which consisted of observations of the time of day, day of



the week, location of the interview, the participant's demeanor at the beginning, middle, and end of the interview, specific ideas the participant generated about the fear of falling, falling, and fear (important words or phrases), voice quality and tone (and whether it changed during the interview and when), and any body language that emphasized the participant's emotions. I observed the dress of the participant, including footwear, and whether they were wearing glasses or hearing aids. I took note of the type of residence, the number of people living there, the way the furniture was positioned and what use they made of the space in which they were living, and the safety issues that might be present, such as electrical cords, scatter rugs, and whether or not the participant was wearing the security bracelet. In some residences I was given a tour, in some I was restricted to the area where the interview took place, and in others, I was shown specific items the participant thought might be of importance to my research (such as a raised toilet seat or type of walker they used). The interviews took place in varying locations throughout the residents' living spaces and community spaces. These included living rooms, dining rooms, kitchens, a sun room, outside on a terrace, in a studio apartment, at the rehabilitation clinic, and in a small parlor in one of the residential wings.

### **Researcher's Log and Researcher's Journal**

The researcher's log contained the logistics of the research: where and when the study was conducted, important dates regarding the research, details regarding key contacts with persons relevant to the study, and anything else that helped the research progress (Knight, 2009, p. 3). It was the most concrete and mechanical part of the research. The researcher's journal was a place to record biases and assumptions, thoughts regarding the research, and new ideas and concepts as they arose (Knight, 2009, p. 5). My biases and assumptions formed my initial understanding of the phenomena. I reflected upon these aspects as my research evolved to make

sure that I remained aware of what I thought. Reflexivity is “the realization that researchers are part of the social world that they study” (Ahern, 1999, p. 408). Hermeneutic phenomenology sees reflexivity as incontrovertible (Creswell, 2007, p. 189); therefore, I was present in the data through the use of the researcher’s log and other reflective pieces. I used them to compare my understanding with that of my participants’. My participants and I, each expressing our thoughts and feelings, became co-constructors of the data.

The initial participant interviews were conducted over a three month period from November 2009 through early February 2010. Because the interviews were not conducted consecutively, I had time to reflect between each interview. The ideas and emotions expressed by the participant in the first interview gave rise to new thoughts, ideas, and directions to pursue for the next interview as well as a new slant on my previous biases and assumptions. This continued to be the case throughout the interview process, although I tried to make sure the basic interview questions were still in place for each interview for consistency’s sake.

### **Saturation**

Saturation, a term common to qualitative research, is reached when the researcher no longer finds new information that adds to the understanding of the subject (Creswell, 2007, p. 240). In hermeneutic phenomenology, saturation is an invalid concept because hermeneutic phenomenologists believe that there is a continuous cycle of knowledge (Hein & Austin, 2001, p. 9). This “back-and-forth movement, re-examining the text, results in an ever-expanding circle of ideas” referred to as the “hermeneutic circle” (McConnell-Henry, Chapman, & Francis, p. 11). However, in the interest of time, I limited my initial research to a period of three months.

## **Trustworthiness**

### **Confidentiality**

During the process of conducting this study, I kept my participants and their feelings anonymous and confidential by using pseudonyms and interviewing them privately. I then transcribed the interviews and provided written descriptions of the phenomena as I understood it from the interviews. The recorded portions of the interviews had some minute spots that were unintelligible, and were marked as such in the transcriptions. All of the printed files were stored in a locked safety box in a secure location in my home, including the poetry activity and the results from the MMSE. I also backed up the computer files by saving them on a memory stick kept in my possession and on a password-protected laptop. The *Livescribe* digital recording pen was also stored in the locked box at my home to maintain confidentiality. All computer files, including the transcriptions, researcher's log, researcher's journal, and field notes were kept on the password protected laptop. The documents stored on the laptop and memory stick will be kept for a minimum of five years.

### **Rigor**

In all research, data must have rigor: i.e., “investigators carefully follow rules, procedures, and techniques that have been developed and agreed upon by the scientific community as providing confidence in the information generated by research” (Kielhofner, 2006, p. 36). In quantitative research, the outcome of this concept is termed validity. This means that the data measures what it was supposed to measure at the outset (Kielhofner & Fossey, 2006, p. 29). However, in qualitative research the data cannot be pre-standardized, so the concept of validity does not apply. There is great argument regarding the concepts and terminology applicable to rigor in qualitative research. The term most frequently used is called

“trustworthiness”, which includes the aspects of credibility (the truth inherent in the study), applicability (the ability of the results of the study to transfer), and consistency (the dependability of the results) (Richards & Morse, 2006, p. 189).

During the course of this research, there was a technical challenge because the *Livescribe* pen I was using to record the interviews broke, making the data stored in it irretrievable. I had basic notes that I had taken while the pen was recording, but had not yet downloaded the information stored in the pen onto the computer. There was not enough information from the notes to make a full description of the phenomena that the participants had experienced and reported. At the time the pen stopped working, I had done ten interviews. I bought another pen and then called these ten participants and explained the situation to them. Nine out of ten participants graciously made themselves available for a second interview. I was unable to re-interview the tenth person due to scheduling conflicts, so to relate his experiences I used the notes I had taken during our first interview. The participants did not seem to be overly concerned about this technical mishap, or mistrustful of me, but instead reacted positively to a second chance to talk. I let them know that as soon as each interview was done I was going to immediately download the information onto a computer as well as onto a jump drive for backup in case of another pen failure. I found this second iteration of the interviews had little effect on the previous research, even though at least three months had passed between interviews, and both the participants and I had had further time to reflect on what we had talked about previously. The second interviews were conducted in April and May of 2010, and three of the nine previously interviewed participants had undergone either a medical procedure, brief hospitalization, or a change in health status, and one participant had fallen who had not fallen prior to the start of my research. As indicated below, these circumstances affected the outlooks of these participants

slightly regarding their general health status, but did not seem to affect their earlier attitudes towards falls or the fear of falling.

Positively, the opportunity to go back and speak with these nine participants actually enhanced the rigor of the study, using a strategy called member checks. As noted by Creswell and Miller (2000), member checks enlist the aid of the participants in reviewing the data already recorded (p. 127), by having the participants examine rough drafts and change any language that does not ring true from what they said (Creswell, 2007, p. 209). The nine participants in this study accomplished this by reviewing the notes I had taken during our prior interviews. These participants were able to explore what they had said previously, and clarified and corrected any statements that were not clear or were wrong. They also reaffirmed almost all of what had been discussed previously, which helped prove the data's trustworthiness.

### **Triangulation**

Triangulation is another important part of trustworthiness. Creswell and Miller (2000) state "triangulation is a validity procedure where researchers search for convergence among multiple and different sources of information" (p. 126). Drisko (2005) believes "combining interviews and observations, documents and interviews, or interviews, observations, and artifacts enhances the quality of qualitative research by providing a basis for triangulated analysis" (p. 591). By ascertaining that the information reads the same from more than one source, the data prove their trustworthiness. I triangulated my data with a structured exercise based on haiku, a Japanese type of poetry, created by the participants themselves. I also used my observations of the participants during the interviews. By using more than one source of information, such as the participant interview, I increased the rigor of my study.

## **Audit Trail**

An audit trail establishes “that recorded raw data have gone through a process of analysis, reduction, and synthesis” (Wolf, 2003, p. 175). According to Creswell and Miller (2000), “in establishing an audit trail, researchers provide clear documentation of all research decisions and activities” (p. 128). There are many documents commonly used in an audit trail. My documents included my researcher’s journal and researcher’s log. By reprocessing the material as necessary with peer reviewers and my thesis director, I fulfilled the requirements of the hermeneutic process. “A peer reviewer provides support, plays devil’s advocate, challenges the researcher’s assumptions... and asks hard questions about methods and interpretations” (Creswell & Miller, 2000, p. 129). My thesis director was someone I turned to consistently for this sort of advice.

## **Data Analysis**

There were several kinds of data to be analyzed at the end of my research, including the verbatim transcriptions, the poetry activity, the field notes, log, and journal of the researcher, and community materials and media gathered from the community and the literature. Data analysis occurred throughout the data collection process and was informed by the ongoing research conducted by my thesis director as well as material developed at Cypress Glen (such as newsletters). The purpose of this data analysis was to discover the significant phrases that related directly to the lived experience the residents of Cypress Glen had regarding falling and the fear of falling. The following describes each step I took in the process of analyzing the data: 1) use of reflective thinking regarding my topic at the start of my research and as an ongoing process throughout in order to further illuminate and deepen my understanding of the topic; 2) sorting and classifying data into varying categories; 3) assigning codes to all written data; 4) including transcriptions, the poetry activity, public material, the field notes, the researcher’s log,

and researcher's journal to develop preliminary categories; 5) using the data and their relationships to create and discover further categories; 6) refining the categories uncovered through the data; 7) developing themes from these categories by grouping similar categories; 8) developing these themes into a clear description of the lived phenomenon, while respecting the differences that may be present as well as the common experience; and 9) remembering to acknowledge my assumptions and biases. By having my assumptions and biases in the forefront, I was able to analyze the data in a more impartial manner.

My data was at first arranged by participants, myself as a researcher, and the community of Cypress Glen. Then I subdivided the data into subjective and objective categories. The subjective category included information obtained from the participants themselves, and from my input, such as field notes and journal, while the objective category contained the facts and data provided by Cypress Glen. The community information was classified as objective because even though it was created by someone, it was information generated by the community, not myself or the participants. My assumptions and biases were kept next to me as I began to analyze the data gathered.

To help with the data analysis, I used the Nvivo 8.0 qualitative analysis software program. This software, developed by Tom Richards and Lyn Richards, was specifically created to use when interpreting qualitative data. With it, the researcher has the ability to manage, warehouse, code, and link pieces of non-numerical data (such as words and phrases) (Richards & Morse, 2007, p. 134).

Once the data was sorted, I was then able to start forming the categories (or "coding"). The primary benefit of using the Nvivo software was in the process of coding. Richards and Morse (2007) term coding as "getting from unstructured and messy data to ideas about what is

going on in the data” (p. 133). According to MacQueen et al. (n.d.), “codes are the building blocks for theory or model building and the foundation on which the analyst’s arguments rest” p. 31). I coded the original data by participant, examining the pieces of data from the participant (such as quotes or ideas) and sorting them into categories. The poetry exercise was also analyzed and categorized for each participant. This is known as topic coding, which “entails creating a category... reflecting on where it belongs...and reflecting on the data...and how they fit with the other coded data” (Richards & Morse, 2007, p. 139). I did the participant sorting, then integrated the categories across all the participants. I also used this method with my own observations and when looking at the objective data provided by the community information. Coding helps the researcher understand the experience by more easily translating the data into relevant themes. Richards and Morse (2007) make the point that using the computer to do this is very helpful (p. 148).

To begin coding, I listened to the audio portion of the interviews while comparing them with the transcripts to make sure that the transcripts were accurate in terms of what the participants said. By rereading the transcripts multiple times, I achieved a better, more thorough understanding of the material as well as a reminder of the voices and language of the participants. The audio portion was transcribed into Microsoft Word 2007 software, and then saved in a rich text format that was imported into the NVivo software. I coded the transcripts manually first, using Microsoft formatting options. I began coding manually because of my lack of familiarity with the NVivo software and because I acknowledged Richards and Morse’s (2007) idea that the researcher is actually the data analyzer (p. 148). Each part of the interview was highlighted with a different color for a different idea (such as green for medications and yellow for social activity). The original (not highlighted) data was then transferred to the NVivo



software. I used the same method with the NVivo software as I had manually to create nodes of data. Nodes are “where you store data about ideas and themes that emerge as you work on your project” (NVivo 8 Fundamentals, p. 55). By using nodes, I could compare my coded pieces of information for greater verification of my results.

After reviewing the transcripts both manually and through the NVivo software, the initial nodes gleaned from the interviews included: a) circumstances of falls, b) types of falls, c) locations of falls, d) attitudes toward falls, e) healthcare necessary for falls, f) frequency of falls, g) consequences of falls, h) fear of falling, i) attitudes regarding fear of falling, j) activity restriction, k) mobility aid, l) physical activity/exercise, m) social activities (on and off campus), n) demographic information, o) community support, p) medical issues/medication, q) driving/travel, s) balance, t) careful vs. fearful, u) walking, v) housework at the residence, w) social support, x) why this CCRC?, and y) resilience.

After using NVivo to encode my data, I examined what I had coded manually and compared the two to verify that I had the same categories. Upon review, the categories often implied the same idea, but sometimes used different wording. For instance, when manually coding with Microsoft, I used the category “circumstances of falls,” and in NVivo, I called the category “why falls happened.” However, the categories contained in each site matched each other in terms of their basic tenet. I then renamed the categories in the NVivo software with what I thought were the word choices that were most appropriate and easiest to understand.

I then went back to the NVivo software to examine the quotes and parts of the text that I felt belonged to certain categories. By doing this, I discovered related groups that I thought should be combined for similarity and clarity. NVivo was very beneficial in analyzing these categories. After I reexamined these categories, I was able to combine some of the original

twenty-three into thirteen categories. I found some material fit into more than one category, such as “circumstances of falls” and “location of falls.” For instance, if a fall occurred because a participant caught her foot on curbing, it would fit under “circumstances of falls,” but it would also fit under “location of falls” because it happened while negotiating a curb. I used this rationale to combine categories that were similar in nature. The result was the following categories: a) causes of falls, b) types of falls, c) consequences of falls, d) attitudes toward falls, e) fear of falling, f) mobility aids, g) physical activity, h) social activity, i) demographics, j) community, k) medical issues, l) careful vs. fearful, and m) resilience. All of the previous data in the transcripts were then recoded into the larger, more comprehensive categories.

The original categories “circumstances of falls” and “locations of falls” were combined to form “causes of falls.” The categories “types of falls” and “frequency of falls” were combined to form “types of falls.” “Consequences of falls,” “healthcare necessary for falls,” and “activity restriction” were combined under “consequences of falls.” “Fear of falling” and “attitudes regarding fear of falling” were combined under “fear of falling.” I combined “physical activity/exercise” with “walking” and “working at the residence” to form “physical activity.” I combined “social activities (on and off campus)” with “driving/travel” to form “social activities.” I combined “community support,” “why this CCRC?” and “social support” to form “community.” I combined “medical issues/medication” with “balance” to form “medical issues.” By merging these categories, there was a more comprehensive view of the topics. I kept the topics “mobility aids,” “demographic information,” “resilience,” and “careful vs. fearful.”

I used this method to analyze the poetry activity as well. When examining the poetry activity, the following nodes emerged: a) falling, b) circumstances of falls, c) locations of falls, d) caution, e) activity, f) age, g) fear of falling, h) independence, i) Cypress Glen, j) attitude

toward falling and the fear of falling, and k) determination. I combined “circumstances of falls,” “age,” and “locations of falls” into “causes of falls.” I combined “independence” and “activity,” into “activity.” I combined “caution” and “fear of falling” into “fear of falling.” I combined “attitude toward falling and the fear of falling” and “determination” into “attitude toward falling and fear of falling.” I kept “falling” and “Cypress Glen” discrete.

The same coding and analysis techniques were used on my field notes. I first coded the notes manually, then followed with the NVivo coding. These were the codes I found from my field notes: a) state of the residence, b) whether or not security bracelet was being worn/why, c) what, if any, mobility aids the resident was using, d) what footwear the resident had on, e) whether or not the resident owned a pet, f) the tone of voice when speaking about falls or the fear of falling, g) posture, h) physical appearance (frail, hardy, put-together, wearing glasses/hearing aids, etc.), i) security consciousness/lack thereof, j) hesitancy/willingness to discuss FOF, k) weight, l) ability to move and balance when getting up and down, m) DME, other equipment in room, n) speech delivery, o) medication list, p) energy level, q) body language, and r) furniture/decoration.

I then combined these into several broader categories. I combined “state of the residence” with “furniture/decoration” to make “residence.” I combined “posture,” “weight,” “energy level,” and “physical appearance” into “physical ability.” I combined “mobility aids,” “security bracelet,” “medication list,” and “DME, other equipment” into “mobility aids.” I combined “what footwear the resident had on” and “ability to move and balance when getting up and down” into “mobility.” I combined the “tone of voice when speaking about falls or the fear of falling,” with “hesitancy/willingness to discuss FOF,” and “speech delivery” into “tone of voice

during interview.” I left the categories of “pet ownership,” “security consciousness/lack thereof,” and “body language” intact.

I then examined my researcher’s journal, studying my assumptions, biases, and thoughts concerning the research. The themes I found in my journal included: a) fall risk factors, b) consequences of falls, c) fear of falling, d) location, and e) socioeconomic status.

The same process of coding manually and then using NVivo was used when analyzing all community data. I examined brochures; the Cypress Glen web site; the Cypress Glen mission vision, and values statement; newsletters, frequently asked questions; list of services and amenities; a brief explanation of the health services available; floor plans for apartments and cottages; and a brief overview of financial costs per month, depending on size and location of residence. I used both the text and visual images to create these categories. I found the following nodes: a) social activity, b) independence, c) variety, d) inclusion, e) exercise, f) friendly staff, g) services and amenities, h) variety of residences, i) health services, j) familiar surroundings, k) pets, l) respect, m) family, n) accessibility, o) financial options, p) accountability, q) community involvement, r) education, s) leisure time, t) wait list, u) self- governance, v) community newsletters, w) volunteer opportunities, and x) location.

Once again I went through the data to combine ideas where possible and create larger, more inclusive categories. The ones I ended up with are: a) choices (a combination of “services and amenities,” “variety of residences,” “health services,” “pets,” and “financial options”); b) community involvement (made up of “social activity,” “variety,” “inclusion,” “exercise,” “community involvement,” “education,” “leisure time,” “self-governance,” “community newsletters,” and “volunteer opportunities”); c) location (a combination of “independence,”

“familiar surroundings,” and “location”); d) values ( combining “friendly staff,” “respect,” “family,” “accessibility,” and “accountability”); and e) wait list (the one I didn’t combine).

At this point, I had looked at all the data sources and types generated. As another way to organize this data, I decided to use Microsoft Word to develop an outline that would help me examine and sort the themes that were emerging. I made a list of all the categories that appeared during my data analysis, then grouped similar ones together, such as “community” and “community involvement.” After that, I then listed data with similar ideas under the appropriate categories. This grouping of the data caused themes and subthemes to emerge, and overarching themes to develop. A theme is “A common thread that runs through the data” (Richards & Morse, 2007, p. 135). NVivo 8 also helped me sort the various themes and assisted in storing, retrieving, and identifying them throughout the project (Richards & Morse, p. 148).

## CHAPTER 4: RESULTS

### Participants

Table 1 contains some of the demographic information regarding the participants at Cypress Glen. Fifteen Caucasian men and women ages 78-94 participated in the study. Table 1 lists the participants' age, gender, residence within Cypress Glen, and the length of time they had lived at Cypress Glen. Participants who lived independently were found throughout Cypress Glen, in cottages, apartments, and in a duplex.

Table 1

Basic Demographics of Participants at Cypress Glen

Participant	Age in Years	Gender	Residence at Cypress Glen	Length of time lived at Cypress Glen
Q.A.	81	F	cottage	10 years
D.D.	84	F	apartment	5 years
D.O.	87	M	apartment	10 years
D.B.	89	F	apartment	12.5 years
A.C.	81	M	duplex	3 years
C.E.	80	F	cottage	13 years
E.F.	83	M	apartment	< 1 year
N.S.	92	F	apartment	2 years
N.A.	85	F	cottage	9 years
N.L.	94	F	cottage	12 years
B.D.	85	M	apartment	4 years
E.E.	89	M	apartment	5 years

Participant	Age in Years	Gender	Residence at Cypress Glen	Length of time lived at Cypress Glen
L.N.	78	F	apartment	2 years
M.F.	91	M	apartment	2 years
K.I.	87	F	apartment	12.5 years

Table 2 is concerned with falling and the fear of falling, as self-reported by each participant. Falls ranged from zero to five times over the last five years, and zero to two over the past six months. These falls did not include stumbles, slips, or trips, where the participant had been able to stop the fall before reaching the ground; only true falls were included. The assistive devices listed were mobility aids only, and included canes, walkers, and power chairs.

Table 2

Falls, Fear of Falling, and Mobility aid

Participant	Number of Falls Last 5 Years	Number of Falls In Past 6 Months	Fear of Falling	Mobility Aids
Q.A.	4	1	No	Walker
D.D.	3	0	Yes	Walker, power chair
D.O.	3	0	No	Cane, walker, power chair
D.B.	1	1	No	Walker, power chair (temp.)
A.C.	3	2	No	Rollator
C.E.	1	1	Yes	Cane, walker
E.F.	numerous	1	Yes	Rollator
N.S.	0	0	No	Cane, walker
N.A.	0	0	No	None
N.L.	2	0	No	Walker

Participant	Number of Falls Last 5 Years	Number of Falls In Past 6 Months	Fear of Falling	Mobility Aids
B.D.	4	1	Yes	Walker
E.E.	2	0	Yes	Rollator, Power chair
L.N.	5	0	Yes	Rollator, Power chair
M.F.	3	1	No	None
K.I.	0	0	No	None

Table 3 looks at aspects of the participants' lives at Cypress Glen, including who they lived with (if anyone), whether or not they wore their personal assistive device (PAD), the number of medications the participants took per day, minus vitamins; and if the participant stated they had balance problems during the interview process. Cypress Glen asked their residents to wear the PAD on their person at all times when in their homes, but as noted in the table, not all participants complied with that policy.

Table 3

Security/Medications/Balance

Participant	Single/Widowed/married Lived alone/w/someone	Wore security bracelet	No.# of medications/day	Balance problems
Q.A.	Married lives w/ spouse	No	6	Yes
D.D.	Widowed/Alone	Yes	8	Yes
D.O.	Widowed/Alone	Yes	5	Yes
D.B.	Single/roommate	At night	5	No
A.C.	Widowed/Alone	Just started	4	Yes
C.E.	Single/Alone	No		Yes



Participant	Single/Widowed/married Lived alone/w/someone	Wore security bracelet	No.# of medications/day	Balance problems
E.F.	Married/Alone	Yes	9	Yes
N.S.	Widowed/Alone	Sometimes		Yes
N.A.	Widowed/Alone	Only when feeling ill	4	No
N.L.	Widowed/Alone	At night	9	Yes
B.D.	Widowed/Alone			Yes
E.E.	Widowed/Alone	Yes	7	Yes
L.N.	Widowed/Alone	Leaves nearby	7	Yes
M.F.	Widowed/Alone	No	<4	Yes
K.I.	Single/Roommate	At night	3	No

Table 4 examines the types of activity in which the participants took part; again, self-reported, and whether or not they felt as if they had restricted themselves from participation in certain things due to falling and/or a fear of falling.

Table 4

Activities and Activity Restriction

Participant	Driving	Physical Activity	Social activity	Volunteerism	Off-campus activities	Activity restriction
Q.A.	Yes	Walks dog, housework	No	No	Shopping, Theatre, concerts	No
D.D.	No	Walks inside	No	No	No	Yes
D.O.	No	Walks, exercises, housework	No	Care Buddies, governance	shopping, theatre	No
D.B.	Yes	Walks, housework, stretch class	Bridge, church	Governance, Care Buddies, church	Governance, travel, shopping, theatre	No

Participant	Driving	Physical Activity	Social activity	Volunteerism	Off-campus activities	Activity restriction
A.C.	Rarely	Walks, housework, treadmill, stretch class	Pop Singers, Make Believers, church	Meals on Wheels, democratic party	Shopping, church	Yes
C.E.	Yes	Walks dog, housework, gentle exercise	No	Gardening for Alzheimer's wing	Shopping	Yes
E.F.	No	Walks inside, laundry	No	No	No	Yes
N.S.	No	Water aerobics, walking	No	No	Eating out, theatre	No
N.A.	Yes	Tai Chi, walks dog, housework, formal exercise	church	Church activities	Shopping, church, travel	No
N.L.	No	Walking	Visiting w/ friends	Gift shop	Shopping, church	No
B.D.	No	Therapy pool	Men's Club	No	No	Yes
E.E.	No	Walking, Exercise equipment	Men's Club, Kiwanis	Finance committee	No	Yes
L.N.	Rarely	No	Listen to singing group, church	No	No	Yes
M.F.	Yes	Walks, laundry		No	Business, shopping, golf	No
K.I.	Yes	Walks, housework	Church, visiting friends	Care Buddies, library, church, governance	Shopping, travel, governance, theatre	No

My research focused on the lived experiences of the participants in regards to falls and the fear of falling, as well as an indication of what life at Cypress Glen consisted of for these older adults. Because hermeneutic phenomenology examines given phenomena, the themes that

emerged from the data and its analysis reflected a certain consistency with regards to attitude and location. Five themes represented this lived experience; they were, in no particular order, 1) Location, 2) Community Involvement, 3) The Language of Falls, 4) Language Regarding the Fear of Falling, and 5) Mobility Aids. Each of these themes contributed equally to an in-depth understanding of the experiences of the participants. These five themes were culled from the outline delineated in the Methods section. I arranged them with Location followed by Community Involvement because they were closely related and The Language of Falls and The Language Regarding the Fear of Falling followed by Mobility Aids, because almost all of the participants relied on mobility aids as a means of fall prevention.

### **Theme 1: Location**

When I was preparing to start my research, I recognized that I had made several assumptions regarding CCRCs: 1) because Cypress Glen is a fairly spread out community, I felt that the residents, especially those living in cottages, would feel a lack of identity or unity with each other; 2) there would be fewer falls and less fear of falling due in part to the installation of DME throughout the residences and the presence of security guards and PADs; 3) I thought the residents would have adequate financial and social support, and that their health status would correspond to their SES.

Theme one examined how and what Cypress Glen provided physically for the residents. Throughout the interviews, the participants made mention of several aspects of Cypress Glen, including the living spaces, the services provided, the amenities, the staff, the presence of the Assisted Living and Skilled Nursing facilities, and Cypress Glen's proximity to and relationship with Greenville. These thoughts and experiences did not change from the first interview to the second.

## **Living Spaces**

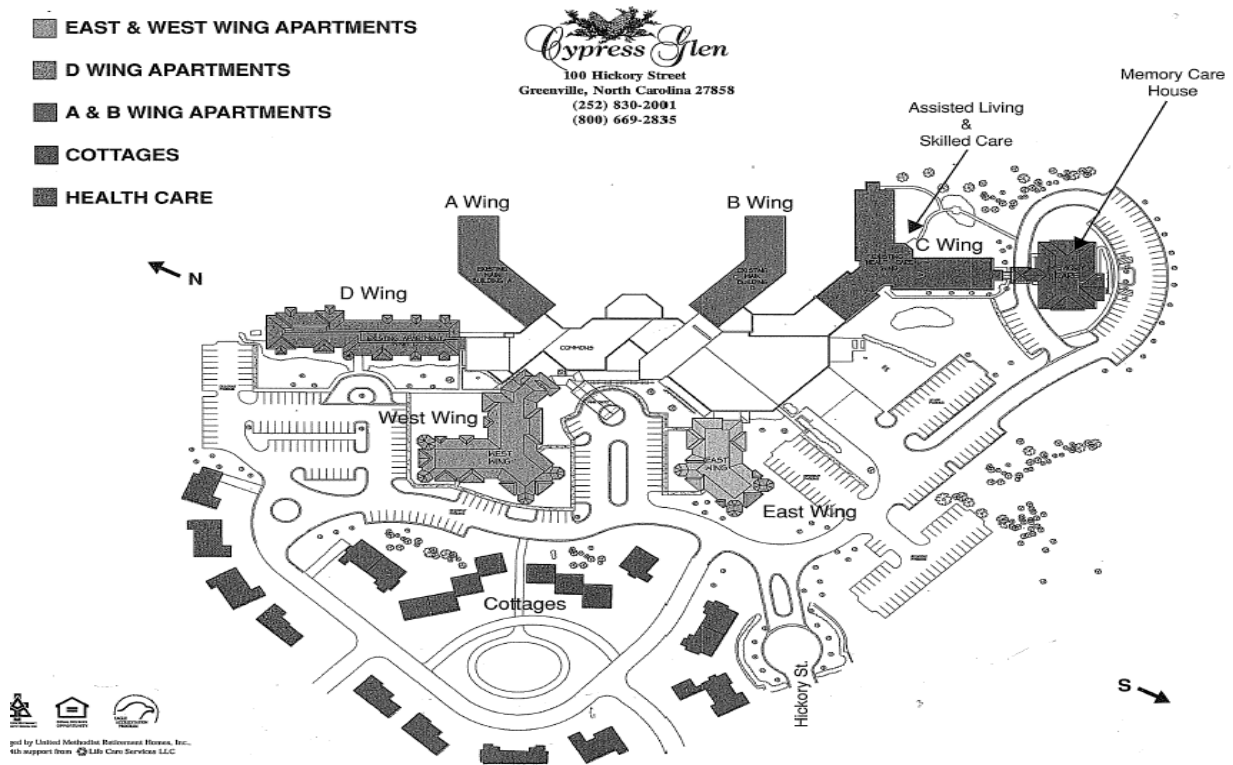
**Physical layout.** There was no change in descriptions between the first and second interviews. The physical layout at Cypress Glen was designed with the leisure and activity spaces centrally located. This meant spaces like the dining hall, auditorium, and wellness center were on the first floor in the middle of the main building, while the apartment spaces were located in wings that attached to the main building. The wings had multiple stories with elevators, but the residents there still had to make their way somehow to the main section to eat and participate in other activities. The cottage-dwelling residents (which, by Cypress Glen's definition, included those living in the duplexes and triplexes) also had to come to the main section of the building. There were numerous parking spaces provided for them if they chose to drive, or they could take the tram, walk, or drive a golf cart, which some residents kept as an alternative to a car. In the cottage area, there were still open lots that future residents might build on, and out the back of the buildings and wings was a large green space backed by woods. The style of architecture incorporated both brick and wood. The front entrance had a large portico, and columns with greenery swept out to the right in front of the dining hall. There was also a large seasonal planting bed at the front entrance. The lobby was large and had clusters of seating, plus a front desk area for inquiries. The wings were arrayed to the side and back of the main building. The cottages were also brick and/or wood on the outside, and had an open floor plan on the inside. The residents could choose to add a sun room or use that space as a carport on some of the designs.

**Furnishings.** Again, there was no change in description from the first to second interviews. The living spaces at Cypress Glen, while varying from approximately 800 square feet through 2,400 square feet in size, had several things in common. One of those was the durable

medical equipment [DME] installed by Cypress Glen. All bathrooms were equipped with raised toilet seats, grab bars, and in shower stalls, a built-in bench. Some of the residents purchased other assistive technology to enable them to stay in their residences, such as bedside commodes, urinals, bed rails, and reachers. All of the cottages and some of the apartments had full-sized kitchen appliances, and even the smallest apartments had a small refrigerator and microwave. The security system tied into the telephone system.

Many participants brought furnishings from previous residences, and included such things as antiques, art, souvenirs from travel, and photographs. All of the participants had photographs of loved ones prominently displayed, and oftentimes made a point of showing them to me. I was also shown special artifacts and, at Christmastime, most residents had a small tree somewhere in the home. In the apartment wings there was a small ledge next to each front door, and most residents had seasonal decorations or other personal objects sitting there, as well as nametags and/or apartment numbers and wreaths on the door. For example, D.D. had a grandson in the military and she had a picture of him on her door.

**FIGURE 1: Map of Cypress Glen**



Courtesy of Laurie Stallings, Executive Director of Cypress Glen

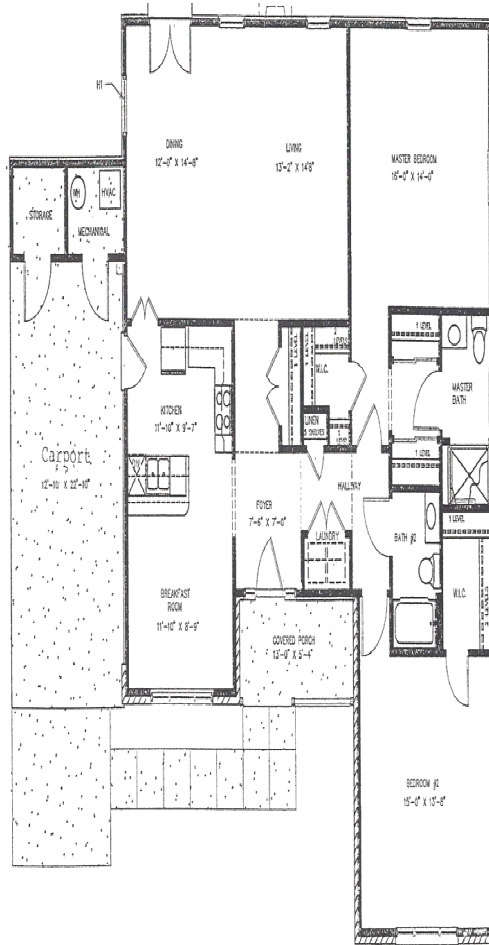
**FIGURE 2: Front Entrance to Cypress Glen**



**FIGURE 3: Blueprint of Cottage at Cypress Glen**



0 Hickory Street  
 e, North Carolina 27858  
 252) 830-2001  
 800) 669-2835



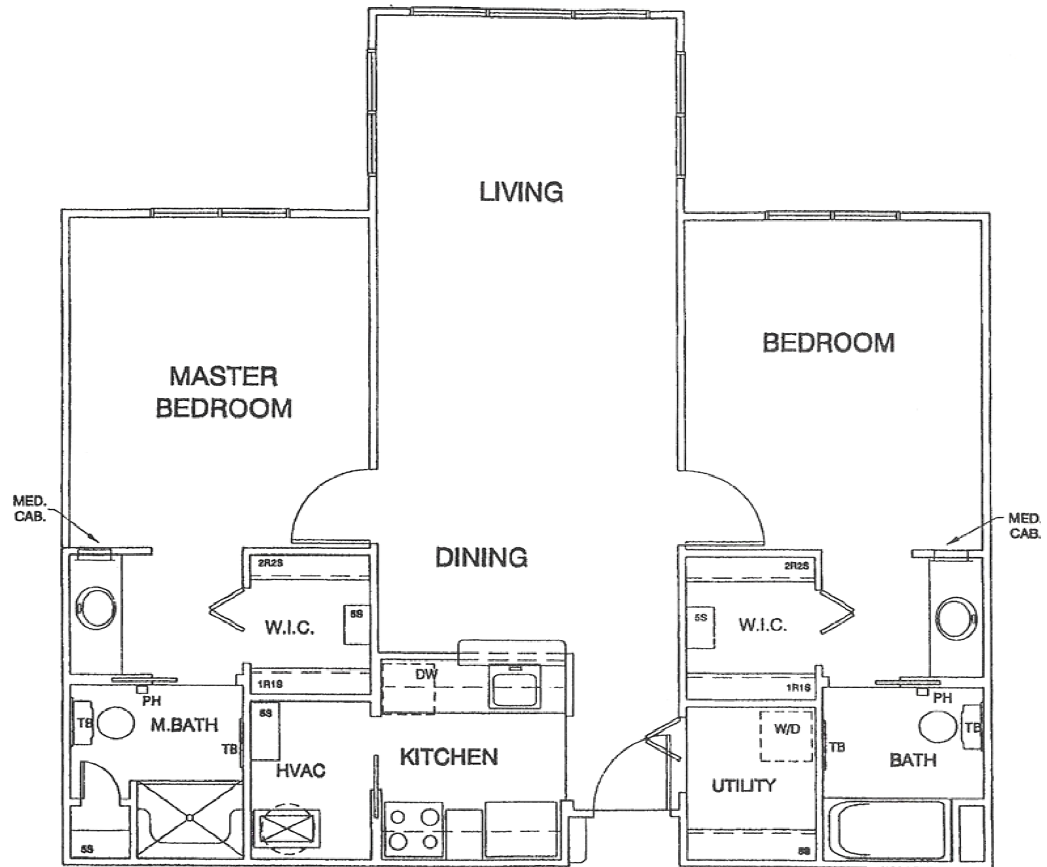
Equal Housing Opportunity  
 Equal Housing Opportunity  
 Equal Housing Opportunity

*The Alder*  
 w/Single Carport  
 1,680 Sq. Ft.



**FIGURE 4: Blueprint of Apartment at Cypress Glen**

2  
58



*Two Bedroom Apartment*

1,076 Sq. Ft.

Enc.  
2

## Services

**Transportation.** N.A. had begun to use the tram due to problems with one of her knees between the first and second interviews. All participants routinely made use of the Cypress Glen services. Given the fact that some participants did not drive, the transportation supplied by Cypress Glen was frequently mentioned. Nine of the participants relied on the shuttle service: they signed up 24 hours ahead of time for transportation by car and were taken to the doctor for routine appointments. There were also two shuttle buses that drove the residents to two nearby grocery stores, and were used for trips to the theatre and other outings as well. E.F. stated, “Another benefit is, to go to a doctor’s appointment, I’ve already got a time set up—I go down there and they’ve got the shuttle car or bus, and they take whoever’s going that day.” A.C. said, “If I go to a doctor, I’ll just ask Cypress Glen and they’ll have transportation.” Residents who lived in the cottages could also ride the tram over to the main building, which the participants took advantage of in inclement weather and/or they were having mobility problems.

**Cleaning/maintenance.** No changes were noted from the first to the second interviews. All residents had weekly cleaning included in their monthly fees. The housekeeping staff came in and dusted, vacuumed, and cleaned bathrooms. Most participants chose to do their own laundry, dishes, and linen changing, regardless of living in an apartment or a cottage. Cypress Glen did, however, provide linen changing upon request. Cypress Glen also assisted the resident with spring cleaning once a year. Another service was the provision of maintenance. A.C. said, “When I have trouble with this light I have to get somebody from maintenance here and put the new bulbs in. They’ll do it for me.” Cypress Glen also did the grounds keeping, so residents were not responsible for lawn mowing, but could add plantings around their dwellings and maintain them on their own.

**Security system.** No one had used the PAD between the first and second interviews. Cypress Glen's security system revolved around the PAD that had a single large button residents could push in case of an emergency. Each resident was supposed to have this PAD on their person at all times while in the residence or building. Most participants wore the PAD as a bracelet held on with Velcro; others wore it as a pendant. Two participants merely kept it handy. As far as using the device, four of the participants chose not to wear the PAD at all because they did not feel in need of backup. Five participants wore the PAD sometimes; responses varied from "only at night," to "in spells," to "only when I'm feeling ill." Six participants wore the PAD constantly. D.O. said, "I'm a firm believer in that. A lot of people—they're crazy—they don't wear that." D.D. said, "I'm a big believer in that—I never take it off, except to take a shower."

**Independence Plus.** The participants using this service did not change from the first interview to the second. This separate service was available to those older adults who were mainly able to care for themselves, but needed a little extra help. A caregiver assisted the resident in bathing and dressing or helped the resident sort and take medication throughout the day. The service was available from 7:00 a.m. through 4:30 p.m. This service enabled the person to remain in the residence, rather than be transferred to Assisted Living. There were three participants in the study who used this service at the time they were interviewed, mainly for bathing and dressing in the morning. One of the participants spoke regarding her helper, "I can trust her completely. She comes 7:30 in the morning, Monday-Friday. I bathe myself and she is right next to the shower and sometimes she'll get my outfits out. She goes down in the morning and gets me breakfast." Another participant, who had had a hip revision and used the service temporarily, said, "Healthcare would come and give me a bath."

**Dining hall.** Again, no one had made any changes between the first and second interviews. One of the aspects about Cypress Glen the participants enjoyed the most was the dining hall. Residents at Cypress Glen were allocated 25 meals per month as part of the service fee, but were free to eat any extra meals in the dining room as long as they paid for them. Residents were also allowed to bring guests with them to meals, again, if they paid. Most of the participants ate their big meal in the middle of the day, then just fixed themselves something light (such as soup) in the evening, although this depended on what was on the menu to some extent. Eight of the participants ate at least half of their meals in the dining hall, and three ate all of their meals there. A.C. stated, “Their breakfasts are superb and ample. The midday meal is very, very good, gracefully served.” E.E. ate three meals per day at the dining hall and said, “The food is delicious.” Another participant, who was diabetic, commented on the availability and flavor of foods that met his diet requirements, stating, “They have some desserts that are sugar-free. We have apple pie—it’s better sugar-free than it is with the sugar. And we have an excellent dietician—she’ll work with you.” L.N. and E.F. mentioned the dining hall had really helped them manage a balanced diet.

The participants who lived in cottages were less likely to eat multiple meals at the dining hall on a daily basis. Of the five participants who lived in cottages, only one ate at the dining hall more than once a day. One of the participants observed that she went over occasionally at lunch “just to be social.” Another cottage resident stated that she went over to the dining hall and brought the meals back to the house to share with her spouse, only occasionally staying and eating there.

## **Amenities**

**Leisure and activity.** The amenities remained the same from the first to the second interviews. There were spaces throughout the building and grounds that were mentioned frequently by the participants. One of these was the exercise room. This room was equipped with various fitness machines, including treadmills and stair climbers. Several of the participants took advantage of this particular area, working out on a routine basis. D.O. stated, “I use the exercise bar in there to do deep knee bends.” Another was the hair salon, allowing the residents to get their hair cut without leaving the building. Two participants mentioned they used this service regularly. The multi-purpose auditorium was used for concerts and plays; many of the participants attended those. There was a United Methodist church service every Sunday that was open to people of any faith and was broadcast throughout the building for those who could not attend in person. There was an arts and crafts studio; one participant mentioned she had taken a ceramics class there and enjoyed the experience. There were gardening plots set aside for each resident to grow their own vegetables, if desired. There was a walking path for exercise (measured at 1,373 feet, according to the Director of Rehabilitation) which several participants took advantage of, and those participants with apartments facing the rear of the property always commented on the view and the resident deer.

**Rehabilitation Department.** No one said anything different about the rehab department between the first and second interviews. The participants who spoke of the Rehabilitation Department were very appreciative of its services. Many of the participants had used or were using the small pool located in the rehab department. Six of the participants used the pool while rehabbing from an injury and four participated in water aerobics classes. D.D. stated, “I had to learn how to stand and walk, all those exercises. That’s how I got back in my apartment. They

wanted to put me in Assisted Living and I didn't want to go there. And I had to work hard." The participants also expressed the fact it was the Rehabilitation Director that helped them determine the appropriate mobility aid. D.B. stated, "And when she [Rehab Director] found out that my leg was bothering me again—she's always said, 'If you ever need the scooter'—and my roommate came back with the scooter for me. Just that quickly." K.I. stated, "There's a wonderful physical therapy department here. Very, very helpful." C.E. agreed: "That [rehab] had been my saving grace, for all of these years." In addition, the Rehabilitation Department did home evaluations to eliminate hazards at the residents' dwellings. N.L. said, "The physical therapist came in after the first time [N.L. fell] and looked over everything."

## **Staff**

The participants' views remained the same between the first and second interviews. The participants at Cypress Glen who lived in the apartments expressed a confidence in and reliance on the staff who worked at Cypress Glen. They felt as if the staff cared about them on an individual basis and were sensitive to their needs. "Friendly" was an adjective frequently used by the participants to describe the people working at Cypress Glen. E.E. believed, "It's a remarkable staff they hire. It's almost like a family." D.B. said, "Friendliness is very important and the staff is very friendly." The participants believed there was a good working relationship between the Residents' Council and the Administration. D.O. stated, "It is definitely a staff-resident community." The wait staff came in for the most praise. K.I. stated, "The wait staff is friendly. We have visited other places and seen the difference." E.E. said, "These kids that help us in the dining room—fantastic." L.N. believed, "Especially all those in the cafeteria—the waiters and waitresses—they're all just as nice as they can be." The participants also felt as if the

rehabilitation staff went above and beyond the normal care and concern. D.B., after a fall, believed the staff were concerned about him when they gave him a walker to use.

Conversely, the participants living in cottages had little to say regarding staff. Many of them spent much less time in the main building, and therefore, had less contact with the staff on a regular basis.

### **Presence of Assisted Living/Skilled Nursing Facility**

In the interim between the first and second interviews, no one had made use of these facilities. Many residents, while hoping they did not have to make use of Assisted Living or Skilled Nursing, expressed the opinion that having these facilities on campus was a major reason for coming to live at Cypress Glen. E.E. stated, “What I like is, if I need Assisted Living I can be transferred to that, and if I need Skilled Care, I end up in Skilled Care. I mean—without going out [of the campus].” D.O. agreed: “I’m glad it’s there.” K.I. stated that knowing the facilities were available was one of the reasons she moved to Cypress Glen, and that if anything happened she would tell her nephew, “Just roll me down the hall.” Not only were these sections available as a permanent residence for some residents, they were a temporary solution for those recovering from an illness or surgery.

### **Proximity to/Relationship with Greenville**

The participants’ thoughts remained the same from the first interview to the second. Most of the participants made use of Greenville and East Carolina University. Many participants went to the University to attend plays and concerts. M.T. said, “I go to all the things at the theatre—as a matter of fact we go tonight to the Moscow Symphony.” Q.A. stated, “I have tickets to Wright Auditorium concerts and to the Geddes Theatre [at ECU].” Of the six participants who drove routinely, all drove to Greenville to pick up groceries, go to the

pharmacy, and make doctor visits. Some also occasionally ate out and did other shopping, and M.F. drove to the golf club and to his office in downtown Greenville.

The participants appreciated the number and diversity of physicians available in Greenville. They mentioned Physicians East (a multi-specialty practice) most frequently as being their doctors of choice and having the most convenient location. One advantage of this practice, according to Q.A., was that all of her medical records were accessible by whichever doctor she was seeing. Physicians East also had an urgent care center. Q.A. appreciated the urgent care center as being closer and having less wait time than the regular emergency department at the larger Pitt County Memorial Hospital [PCMH]. N.A. appreciated the Heart Institute at PCMH: “I went in for the catheterization, and honestly, even if you had gone home to your mother, you wouldn’t have been treated more royally.”

Several of the participants who were no longer driving mentioned the traffic in Greenville as one of the reasons they stopped going places. One said, “Greenville is a fast traffic town with the university.” Another agreed, saying, “If I got cut off, I was afraid I wasn’t going to stop in time. And in Greenville, you get cut off, believe me.”

## **Theme 2: Community Involvement**

Theme 2, Community Involvement, addressed aspects of Cypress Glen that went beyond the physical location. The participants and other data specified community involvement in several areas. Physical activity was a very important part of most participants’ weeks. The design of Cypress Glen called for walking, but there were also other ways to exercise. As far as social involvement, participants mentioned everything from government to music to bridge and Bible study. The participants were also quite active in volunteering their time for various things.



## **Physical Activity**

**Walking.** Walking remained the same between the first and second interviews. Fourteen out of fifteen participants in the study did at least some walking each day. This type of walking was not done specifically with exercise in mind, but as a means of moving from place to place. Nine of the apartment-dwelling participants chose to walk to the dining hall and other spaces within the main portion of the building all the time. Two participants living in the cottage area also chose to walk back and forth to meals, while the others drove and then walked from parking spaces. E.E. stated, “Every breakfast I walk down.” K.I. used the stairs to go back and forth to the dining hall. K.I. also stated she was a physical person and she had “Good legs. Excellent legs.” D.B. also walked to visit friends in the Assisted Living section, while D.D. walked back and forth to her mailbox, and D.O. walked to the accounting office. All of the participants were capable of walking within their own living spaces, to various degrees.

**Formal exercise.** Despite some knee pain that occurred between the first and second interviews, N.A. continued to exercise. Many of the participants not only walked to get from place to place, but also did other exercise. Walking was mentioned frequently by the participants as their main form of exercise. Six of the participants walked for exercise on top of getting around the building and grounds. Three of those participants had dogs, and walked their dogs every day. One of the participants had just started walking and walked up and down the corridor outside of her apartment. Another participant got pneumonia frequently and chose to walk inside, also along a hallway, until warmer weather. The participants varied in how they measured their walking. One participant looked at a measured distance, stating she “walked ½ a mile a day.” Another participant measured it by saying, “I walk from here to the gate two to three times a day and

that's a bit of a hike." D.O. walked inside and measured his distance by going "to the accounting office four times a day."

Other forms of exercise included water aerobics, other exercise classes, and using exercise equipment. As stated previously, four of the participants took water aerobics classes. N.S. said, "I go to water aerobics three times a week." D.O. stated, "I go through an exercise program three days a week." C.A. walked outside, but also worked out on the treadmill and attended stretch classes and chair yoga, which he said "is very good for balance." N.A. did Tai Chi at home and an exercise class three times a week through Cypress Glen. E.E. owned an exercise bike and rode it ten to twenty minutes at least twice a week.

**Other forms of activity.** The participants continued with these activities from the first to the second interview. Other forms of activity included gardening and housework. Two participants helped garden to beautify Cypress Glen. N.A. made use of the plots provided by Cypress Glen and stated that she grew lettuce, spinach, snow peas, and dill. As shown above, in Table 5, nine residents also did some housework, mostly dishes and laundry. Some of the residents had their own washer and drier, others had to use communal machines located in each wing.

### **Social Involvement**

**Community governance.** The participants' community governance remained the same between interviews. Cypress Glen was run under the guidance of United Methodist Retirement Homes, Inc. There was a Board of Trustees that made decisions and one seat on the Board was allocated to the President of the Resident Council. The Executive Director, Laurie Stallings, was the liaison between the residents and the Board of Trustees. There were also resident-run committees at Cypress Glen, such as the Finance Committee, Welcoming Committee, and

Dining Committee. While they were not able to make final decisions regarding the community, these committees, according to the Executive Director, were there to “promote participation and provide feedback to the Executive Director about what’s being discussed.” For example, the Finance Committee might have decided the community should buy a piece of equipment or contribute to a Christmas fund. This was then passed on to the Executive Director as a suggestion, who might then discuss the idea with the committee before reaching a decision. There was a larger organization, CCCR (Continuing Care Community Residents) of North Carolina, which was a state-wide volunteer non-profit organization of residents living in continuing care retirement communities (Cypress Glen, n.d.). K.I. and D.B. represented Cypress Glen in this organization, but had recently decided to relinquish their posts. All of the residents were members of the Resident Council, and according to D.O., 80-100 residents attended the monthly meetings. N.L. stated that she attended all the Resident Council meetings.

**Social activities.** All participants in both interviews kept up their social activities between the interviews. One way the residents found out about the activities that were available was through the two community newsletters, *Cypress Chatter*, written by the residents for the residents, and *Bits and Pieces*, a newsletter put out by the administration. The former came out once a month and the latter, every week. In the October 2010 edition of the *Cypress Chatter*, activities listed included a concert, shopping trip, an outing to Goose Creek State Park, dining out at a local restaurant, and lecture series off campus. On campus, the activities included a Parkinson’s Disease Support Group meeting, a butterbean auction, a Halloween Party, Coffee with Laurie, and pumpkin carving. The newsletter also listed the shopping destinations for the shuttle bus in the month of October, birthdays and anniversaries, and events upcoming in November. The *Bits and Pieces* for 10/29 had on-campus activities such as a Bible study, Veteran’s Day program,

and the fact that Cypress Glen was a polling place in Greenville. There were also volunteer opportunities, such as baking for the Holiday Marketplace, recycling of plastic grocery bags, the Employees' Christmas Gift Fund, and Care Buddy Orientation. The Director of Rehabilitation appended a note regarding safe use of power chairs throughout the building.

Dining in the dining hall was a social activity for many participants. L.N. had a sibling at Cypress Glen, but they lived in different areas of the building. "We visit in the dining room. We eat lunch together and supper, too." As stated before, C.E., who was a cottage resident, used the midday meal as a way to be social. Q.A., another cottage resident, said, "Occasionally my next-door neighbor and I go over to eat." N.S. met friends in the dining hall to help celebrate her birthday. Residents also went out to eat in Greenville throughout the week, either with friends, or family that lived locally. N.L. stated, "Every Sunday morning, my daughter who lives here and her husband and her daughter meet me for a late breakfast, and we have a time to visit." Residents also visited with each other. For example, D.B. and K.I. went to the Assisted Living section to visit friends.

Several of the participants took part in leisure activities. D.B. organized two different bridge games, one for serious players and one for fun. D.B. stated it was "the most important thing in the world that I do. I do all the calling to line up and scheduling—find people. And then I'm in charge of it—once it starts. I tell everybody I just live for Tuesdays, 'cause I laugh so much." Two other participants I spoke with played bridge. A.C. said, "It's a very stimulating game, keeps the mind alert." Two of the residents attended the Men's Group, and one was a member of the Kiwanis Club. A.C. participated in a music group, made up of about thirty residents, called the Community Pop Singers. He also took part in a theatre group, the Make

Believers. They put on short plays once a month. Several of the participants mentioned they went to see the plays and music, including N.L., L.N., and N.S.

Attending church and church-related activities were an important part of the participants' lives. Ten of the participants went to church—some in town and some to the service at Cypress Glen. Two residents watched local church services on their television. A.C. attended a Quaker Meeting at Cypress Glen, and then went to another church in town as well. B.D.'s church came and picked him up from Cypress Glen and took him to their service. D.D. regularly attended Bible Study.

Three of the participants used a computer for various activities. N.L. stated, "Well, my son-in-law, who's real good with the computer, put online the first page of the *Daily Reflector* [the Greenville newspaper] and the *Wall Street Journal*. I go on the computer almost every day. My grandson downloads the pictures of my great-granddaughter and I look at them on the computer." D.B. used the computer to balance her checkbook and did games on the computer "to help my brain." E.F. had a wife that did not live at Cypress Glen, so he used the phone to keep in touch with her. "We talk two-three times a day."

Friends were mentioned as well. N.L. stated, "I have very good friends and they take me with them to places and so I'm grateful for my friends here." K.I. said "I go down to New Bern and visit my friends quite often." She and D.B. stated "We visit a lot—we go down every day to Assisted Living and visit people, 'cause we have a lot of friends here." A.C. said he has "Lots of friends." N.S. said she found Cypress Glen as a whole to be "very friendly."

Residents at Cypress Glen also did activities off campus. As previously mentioned, residents went to Greenville to attend concerts and the theatre. However, residents also ate in Greenville. As N.S. said, "Well by luck, if I get an invitation to go out, well then, we go out."

Participants also mentioned going to the doctor and the pharmacy as the types of trips they generally made. Some participants travelled, either driving themselves or going with family, but most limited themselves to activities in and around Greenville. Of the six participants who routinely drove, most used eastern North Carolina as a boundary. C.E. said, “Locally. And then I drive to Elizabeth City still. But that’s *all* I’m willing to do.” M.F. drove to places such as Kinston and Raleigh. Q.A. stated she would drive for short trips, such as to Edenton. The Executive Director stated the vans can be used for outings such as the one to Goose Creek State Park. The Executive Director indicated that Cypress Glen was willing to accommodate any trip as long as there was enough interest for it.

**Volunteer work.** Again, participants’ volunteerism remained the same between the two interviews. At the time they were interviewed, eight of the participants were actively involved in some type of volunteer work. N.L. volunteered in the gift shop, purchasing cards to later sell. K.I. was the driving force behind the library, working there every day. Two of the participants, K.I. and D.B., volunteered to set up for the church service and tear down afterwards. K.I. said, “You have no idea what that entails.” They turned the lights on, lit the candles, put the programs in the hymnals, seated the residents, and moved the walkers aside and returned them later. They also counted the money for the offering and took it to the business office afterwards. N.A. collected plastic bags for the food bank. D.O. gave away scholarship money for college to the people on staff, as well as volunteering on many governance committees. C.A. hosted meetings of the local Democratic Party. There was a section at Cypress Glen for dementia patients, and C.E. helped do the gardening in that area, using plantings that were not only beautiful to look at, but had a scent to help stimulate the population. E.E. worked on the Finance Committee and N.A. signed cards for men in the armed forces.

One of the volunteer organizations Cypress Glen residents developed and were very proud of was the Care Buddy Program. Because Cypress Glen was a small community, the sense of family prevailed. If one of the residents was taken ill or had an injury, other residents wanted to know so they could help the person and the family involved. The Health Insurance Portability and Accountability Act [HIPAA], passed in 1996, protected people's right to privacy regarding medical conditions. This prevented the community at Cypress Glen from finding out any information regarding their friends. As a way to circumvent HIPAA, while still respecting privacy, the Care Buddy Program was begun. A Care Buddy was someone who volunteered to fill in during emergencies by accompanying fellow residents to the hospital and staying with them as advocates and friends until family was able to be there. Over one hundred Cypress Glen residents volunteered. Three of the participants stated they were enrolled in the Care Buddy Program, one as a founding member. D.O. said, "That to me is the greatest thing I ever did in my life, was to help and being part of developing that Care Buddies system."

### **Theme 3: The Language of Falls**

Prior to beginning my study, I reflected on the language of falls and determined I had the following assumptions and biases: 1) I thought falling was a natural part of aging; 2) most older adults would experience a fall; 3) many fallers would have to go to the hospital as a result of falling; 4) falling signaled a decline in health which led to a restriction in activities; 5) women fell more often than men and also broke more bones when they fell; 6) I also felt stumbles and losses of balance were lucky saves and the person who had them was at risk for falling; and 7) I had not thought about environmental hazards outside of the home as possible risk factors for falling.

Theme three explored how the participants of this particular community spoke of falls. Of the fifteen participants, twelve experienced at least one fall in the last five years, and one participant had fallen between her first and second interviews during the research process. While being interviewed, the participants spoke of the difference between falls and stumbles, where their falls had occurred, how they fell, why they believe the falls occurred, what (if anything) happened as a result of their falls, and the consequences they felt might occur as a result of falling.

### **Falling**

**Falls vs. stumbles/loss of balance.** None of the participants who were interviewed twice changed their descriptions of these episodes. All of the participants, when asked what falling meant, made a distinction between hitting-the-ground falls and having loss of balance episodes. In the latter instance, the participants thought they might fall, but did not end up on the ground. In these circumstances, the participants did not, by definition, fall. D.O. said, “I’ll get—I’ll lose my balance and fall into that couch or this chair or that chair, or I may grab something.” A.C. stated, “I wouldn’t say many falls. More wobbling kinds of situations.” N.S. also referred to at times feeling “a little bit wobbly.” There were also incidents where the participants were not standing, but sitting down or lying down. L.N. said, “I slid off the bed two times in a year—I didn’t fall off, I just slid off. It’s not what I’d call falling.”

**Where their falls occurred.** The only addition was D.B.’s fall over a curb between the first and second interview. The participants who had fallen spoke about where their falls had occurred. Seven out of twelve people who fell had fallen in their residences. D.D. tripped over boxes and fell off her toilet onto a set of bathroom scales in two different falls: “Ooh, that was awful. My knees still bother me.” Q.A. tripped as she moved from the carpet of her hallway onto



the vinyl floor of her kitchen. Several participants had fallen in the bathroom, often when rising from the toilet. E.F. slipped while in his shower stall: “My foot slipped. I fell in the wall. And when I hit the wall either with my cane or my elbow, I fell down.” Three participants fell as they were getting out of bed. Some participants fell in the main building, including C.E. and B.D. The latter person fell while in the dining hall. Other participants had falls outside. Three participants had fallen over curbing, two going forward and one going backward. D.B., after her first interview, had fallen over a curb at PCMH and related this experience in her second interview. L.N. stated that she wasn’t walking well and that her head hit the pavement and her leg hit the curb and “bled and bled.” Q.A. tripped over the wheel of a shopping cart and on uneven pavement. Some participants fell both at home and other venues, including Q.A., C.A., C.E., and E.F.

**How they fell.** These statements did not change when participants were interviewed again. More than one participant stated the fall happened so fast they had no time to prepare and no warning it was going to happen. C.E. said, “I was up and I was down. There was nothing in between.” D.O. had a similar experience: “I never had that sensation when I had no legs at all. I couldn’t stop. I couldn’t do anything. I just had to fall.” E.E. added, “I was just standing there [in his bathroom] and I went down. My legs just gave out.” E.F. agreed: “I’ve fallen a number of times and you don’t realize you’re going to do it.” L.N. said that she had the “instinct to turn and go, but it was too fast. I just fell before I even knew it.” A.C. did the same thing: “I turned around—I thought I heard the telephone ring—and I turned around and fell straight on my back.” Those who had stumbled felt they had tripped over something, lost balance upon rising, or were on an uneven surface.

**Why they believed the falls occurred.** Again, the participants who were interviewed twice felt the same regarding any falls they had incurred. Some of the participants did not have an explanation for their falls. C.E. felt as if a new lift in her shoe, plus a lack of balance contributed to her fall. Other participants who felt as if a lack of balance was a contributing factor in some falls included A.C., N.L., D.D., D.O., and L.N. Uneven footing accounted for two of Q.A.'s falls. Q.A. stated she believed differences in the surfaces really “seems to make a difference” in regards to causing falls. M.F. felt as if a lack of attention was the cause of two of his falls: “I wasn’t looking.” When E.E. fell, he was not feeling well and believed he had a stomach bug: “Something was wrong there, yeah.” D.D., D.B., Q.A., and L.N. tripped over obstacles. D.B. believed she was “at that point [where the curb widens and thins for wheelchair access] because that’s such a wide point. Well, we weren’t at that level—a curbing was there. I went flat on my back.” N.A. had tripped, but never fallen, as had N.S. K.I. had also not fallen, but during her first interview, when she rose from a chair, she momentarily lost her balance. Those who stumbled mainly believed it was from a lack of attention.

### **After the Falls**

**Results of falls.** These descriptions did not change between the first and second interviews. Most of the participants who had fallen suffered minimal or no injuries. However, Q.A. injured her shoulder badly enough to cause nerve damage which affected her left hand and wrist and resulted in her wearing a splint. D.O. was kept in the hospital overnight for observation after falling into his television and cutting his head and injuring his shoulder. C.E. fractured her L1 vertebra. N.L. and L.N. both went to rehab at Cypress Glen after their falls, (N.L. for about four weeks and L.N. for eight weeks to help the recovery process). Other participants had scrapes and bled, while others had had bruises and sore muscles, but these required no medical attention.

Several of the participants had difficulty rising after their falls. N.L. spent thirty hours on the floor before it was discovered she had fallen, thanks to her inability to rise. She said, “I was able to scoot around from room to room, turned on all the lights with my cane, and got a drink of water from the refrigerator, but I could not get up.” After A.C. fell, it took him several minutes to gather the strength to get up: “I couldn’t get up for awhile—I had a tough time getting up.” L.N., when she slid off her bed, said, “I was leaning so far off the bed I couldn’t get up.”

**Personal Assistive Device (PAD).** There had not been any recent use of the PAD at Cypress Glen by the participants, so these statements had not changed from the first interview to the second. The PAD at Cypress Glen was designed for occasions such as falling. Five of the participants used the PAD to notify security they had fallen. Generally, the PAD notification caused security to send a guard and a nurse. L.N. said, “And so the next time they sent a nurse and a security guard. And I think they thought that maybe I’d had a stroke. Because when they got me up, they were in no hurry to leave.” D.O. stated, “We have these little gadgets [the security bracelets], and security came right down.” The PAD did not work for N.L. because someone on the cleaning staff had, while vacuuming, inadvertently pulled the phone cord out of the wall. Because the PAD worked through the phone system, pushing the button did not alert anyone in security to the fact she had fallen. Since then, the cords have been taped to the phone jacks in the wall to prevent another occurrence such as this.

**Furniture walking.** These statements remained the same between the first and second interviews. Within their dwellings, several participants relied on furniture to go from Point A to Point B. After falling, when D.D. entered a room, she began to look for items she could grab: “I try to get near something I can hang on.” She felt afraid if she didn’t see anything she felt she could hold onto: “Probably if I went in a room and there wasn’t anything setting around that I

could grab, I would be very fearful.” When she first moved in, the sight of grab bars in the bathroom was frightening to her, because she could look into the future to the day she would come to rely on them. Now she was grateful for their presence. She also commented in one house she lived in, there were finger marks left by the elderly gentleman who had lived there before her. She couldn’t understand why they were located at door edges and other places, but she came to understand the man had been grabbing them to save himself from falling. D.O. looked to his furniture for support as well. “If you look around here [the apartment], no matter where I fall, there is something for me to either fall into or something to hold me up.” N.S. would also at times forget her mobility aid: “I have a cane, but I leave it there and use furniture.”

**Perceived consequences of falling.** In considering the falls the participants had, none of these perceived consequences, beyond a brief hospital stay, actually happened during any portion of the interviews. The participants were asked what they thought the consequences of falling might involve. D.O. stated ending up in Assisted Living or Skilled Nursing would be his fear. “I’ve seen too many people go in there and some go on for years and years and years and years. My fear is that I would just become a vegetable.” E.E. worried he would end up having a fatal blood clot like his wife did after she had fallen. L.N. said, “If I fall, I could break a bone. That’s the first thing I think about. I’ll have to go somewhere else to live.” M.F. feared being laid up, hospitalization, and being in the Skilled Nursing section. D.D. also said the worst thing would be “to have to go to the hospital. Fear of the hospital.” Q.A. worried she would have to leave her house and go to an apartment or assisted living, and her independence would also be lost.

Conversely, D.B. believed that if a fall happened, it happened. Even after her fall between the first and second interviews, D.B. stated that she felt the same way regarding any

falls. K.I. also stated she was in a place that would take care of her and otherwise, she just did not think about it.

#### **Theme 4: Language Regarding the Fear of Falling**

Prior to conducting this study, I believed 1) anyone who fell would have at least a temporary fear of falling (temporary being anywhere from a few days to a few months); 2) this fear would be something that they felt on a daily basis, throughout the day; 3) I also thought this fear would cause them to limit their activities, and that this restriction would trigger social isolation, depression, and/or anxiety; 4) I felt that fear of falling was a bad thing in that it would prevent people from living full and happy lives; 5) I thought that falls would cause most of the fallers to have an immediate, long-lasting fear; and 6) I did not feel the older adult would necessarily have the emotional or physical energy to endure issues such as chronic medical problems, loss of a loved one, or other obstacles.

Theme four looked at what the participants thought and did regarding a fear of falling. Only six participants stated that they had a real fear of falling. During the interviews, the participants stated whether or not they had a fear of falling, their attitudes regarding falling and its aftermath, their resolution to continue on with their lives, and what they did to prevent falls from happening.

#### **A (Mostly) Positive Approach**

**Fear vs. No fear of falling.** Those participants I interviewed twice did not change their opinion between interviews. Six of the participants stated they had a fear of falling. E.F. said he “had a fear of falling after I did my back. You always have a fear. Makes you a believer.” L.N. said she had a fear of falling “‘cause I know I can fall. Just about every time I move I think about falling.” A.C. stated he “did not have a heavy fear of falling,” he was just “super-cautious.”

However, after reflecting, A.C. said, “They equate the same, probably.” C.E. said because she couldn’t explain her last fall, she was afraid.

N.S. said she did have a fear of falling, “but it’s common sense. I know what to do about it.” E.E. said he had a fear of falling, but “it doesn’t restrict me.”

Other residents asserted they did not have a fear of falling. M.F. stated he did not have a fear of falling, but his third fall made him more aware than the previous two, and another fall would make an “indelible impression” on him. N.L. stated she did not have a fear of falling, but it might affect her subconsciously, but not consciously. When asked if he was fearful of falling again, B.D. was fatalistic about it: “Probably will [fall] someday. It may be the last time I do it.” Q.A. related she was not afraid, she just kept going and moved on. When I asked D.D. if she was afraid of falling, she said, “No, I wouldn’t say so.”

**Variations in attitude toward falls.** These participants remained adamant about their positive attitudes in the second interview. When the participants had fallen, very few of them thought of their falls as debilitating, some were temporarily frightened, while others dismissed their falls. C.E. stated “That’s why that one [the fall where she injured her vertebra] frightened me so—because, as I said, there was nothing in between. My being upright and my being on the floor.” The few who were frightened of falling remained frightened between the first and second interviews, so it was probably more than a temporary anxiety.

In her first interview, D.B. stated if she fell, she fell. D.B. then had a fall and stated she had “had a bad fall recently” and she repeated twice, emphatically, she had been “scared to death.” She was also “afraid that I had hurt this hip again.” However, she chuckled and continued her story by saying, “But I don’t think I had any reaction [to the fall]” and it was “business as usual [afterwards].” She also said, “I don’t fall. Did I indicate that I fall?” despite

having fallen within the last six months. D.B. felt as if her fall was an accident and not anything to dwell on.

Q.A. declared, post-fall, “You can’t anticipate these things.” She also said, “You think it’s not going to happen the next time.” N.L. believed even though she took precautions, “these thoughts [regarding falling] do not affect my activities and I try to be as independent as possible and I want to preserve my independence and not have to rely on anybody else.” D.O. stated, “I’m just more cautious.” Two other participants, K.I. and M.F., looked upon their falls as just mishaps. K.I. described her two falls, which happened several years ago, as “pure, damn accidents!” When I asked K.I. what falling meant to her, she said, “Get up!” and that her falls were just “run-of-the-mill accidents.” She also stated that “Falling just does not occur to me. I just don’t know how else to say it.” M.F. had three falls, but looked upon his first two as “stupid” and “careless.” Q.A. also said her “falls were just accidental.” E.E. stated, “I’m doin my best not to fall. That’s all I can say.”

**Pride.** Three residents mentioned pride in relation to falling. E.E. stated “I am convinced that most falls I see around here—I’ve seen a few good ones—is because people will not use their walker or their cane—the pride. Most of the damage I’ve seen done around here is pride. At another time in my life I think I was the same way, but I’m older now.” N.S. agreed, stating, “There are a couple of people around here who are having bad falls recently. They’re these men who are just too proud to use [mobility aids] and now they’re paying for it.” D.O. had experienced these feelings himself: “I’ll ask somebody to please help me. I am not ashamed to go and ask somebody to help me. I was in the beginning—well, not ashamed, I would feel funny—but then I would.”

**Resilience.** Again, these participants remained true to their original statements regarding their attitudes. The participants in this research study all had multiple health problems, including bouts with cancer, heart problems, diabetes, high blood pressure and cholesterol, arthritis, Alzheimer's Disease, Parkinson's Disease, hip and knee replacements, sleep apnea, chronic obstructive pulmonary disease, incontinence, and depression. However, most participants had a positive outlook on life and tended to minimize health problems and falls. D.O. stated: "I'm still gonna be alive at 100." A.C. declared, "I have a pretty happy, full life. Lots of friends." D.B. said, "For all my ailments, I'm pretty healthy." C.E., during her first interview, discussed how important having a dog was as far as her motivation to exercise and be active. She felt like she lacked incentive and energy without a dog and was looking to adopt a dog since her previous dog had passed away. C.E. did adopt a new dog between the first and second interviews and had a more positive attitude than during the first interview. She stated, "I'm back." When asked if caution would cause her to slow down, N.S. said, "I think if I wanted to do it, I'd forget the caution." N.A. stated "Outlook helps a whole lot." N.L., when she had fallen and was unable to rise, stated that she found the situation funny after awhile. She was also resourceful, trying to draw attention to herself and scooting to the kitchen to get water out of the refrigerator to stave off dehydration. Q.A. said, "My feeling is you do all you can as long as you can. To stop is not good." D.B. agreed: "I try to do as much as I can." E.F., despite a stated fear of falling, declared, "You gotta do what you gotta do." N.A. did not have Cypress Glen change her linens: "I still make my bed up and stuff like that. A lot of the people in the cottages over here get the cleaning women to make their bed, but I don't see any point in that. Not yet, not yet." Even though L.N. had a fear of falling, she also made the comment, "You have the fear, but you keep on doing



what you have to.” D.D., after her fall, went to the rehab department for six days to get therapy to prove she was capable of moving back to her apartment.

### **Attitudinal Benefits**

**Lack of activity restriction.** K.I., D.B., and D.O. each made a decision to cut back on their activities between the first and second interviews. Of the fifteen participants I interviewed, only three felt they had restricted their activities due to a fear they might fall again. E.F. said, “You would place restrictions on yourself—I might get hurt, so I wouldn’t do it.” Since her last fall, L.N. had not gone out to eat (the activity she was doing when she fell) and refused to participate in activities that involved a lot of walking. She also felt vulnerable to crime when going shopping, so she had given that up and ordered clothes through a catalogue. D.D. said there were things she didn’t do in case she might fall.

Most participants had given up certain activities they used to do, but did not attribute the activity restriction solely to a fear of falling. Balance issues restricted C.E. and E.E. C.E. no longer maintained the plantings at her house, and reduced her involvement in gardening for the Memory Care Cottage, due to having lost her balance while trimming bushes. E.E. no longer golfed because he kept losing his balance, and, after his last fall, which happened in the bathroom, was afraid to enter his shower. He declared, “I just lost faith in myself.” With some assistance from the rehab department at Cypress Glen, E.E. overcame his fear quickly and had no current qualms about showering.

Most of the participants who had slowed down felt as if their reduction in activities was brought about more by the aging process in general; they lacked the strength and stamina to do what they had done before. N.S said, “I tire readily, but if I sit down for awhile, I recoup.” D.D. no longer traveled and rarely went on outings. K.I. gave up gardening, except for containers at

the entrance to the D Wing, and she and D.B. decided they could no longer represent Cypress Glen at the CCCR of NC. D.O. recently excused himself from the executive directorship of the Care Buddies Program. Many of the participants felt as if they were unable to travel anymore, especially by themselves.

Some of the participants felt they had not changed their activity level. A.C. stated “It hasn’t slowed my desire [to do things] or my actual activity level.” M.F. agreed that he has not changed his activity level or his approach to activities. K.I. stated she was a physical person and she liked to stay busy.

**A positive change of habits.** Some participants had made modifications between the two interviews. Many participants stated they had become “more careful” as a result of falling. Most participants stated falling had made them more aware of their surroundings. Many changed how they walked. D.B. said she used to look down all the time, but with the help of K.I. she was learning to keep her head up to look where she was going: she was “very straight.” N.L., on the other hand, looked down to make sure her of her footing: “I kind of walk with my head down all the time, because if there’s any variation in the pavement, why I’m afraid I’ll catch it with my walker and fall.” M.F. also stated after his third fall “he looked down to see where his feet were.” N.S. made the comment she didn’t “try to go sailing off on my own” in case she tilted or leaned, in which case she grabbed something.

**Understanding of environmental hazards.** Between the first and second interviews, C.E. had adopted a new dog, but her experiences regarding having a dog remained the same. Many of the participants interviewed already knew about removing environmental hazards within their dwellings. Twelve of the fifteen had clutter-free pathways throughout their living space. D.B. said she tried to keep a clear path through her household, and she tried to keep

everything where it needed to be. Some participants mentioned throw rugs and stated they only had those with non-skid backing. Two participants who used oxygen at night made sure the cords were positioned out of the way. E.F. said maintenance had come in and nailed his oxygen tubing around the walls by the floor so he did not trip on it. Eight residents either kept a nightlight on or had some other means of being able to see at night if they had to get up to make trips to the bathroom or kitchen.

As mentioned before, Cypress Glen had installed DME throughout the site, so participants had these items in place. In addition, several of the participants had bedrails to help them shift position and make it easier to rise from the bed. E.E. had a urinal that he used at night, rather than make a trip to the bathroom. N.L. had a nightlight that went around her head so she could have her hands free for the walker if she needed to get up in the middle of the night.

L.N. mentioned wearing socks because she felt it helped her neuropathies, but “Sometimes my socks get—they’re big, ‘cause my feet and legs swell so I had to get bigger size socks—sometimes they just about fall off and I have to be careful that I don’t step on them and then fall.” She said, “My shoes are so heavy-- diabetic shoes, they turn my leg and then they make my ankle hurt.” Two of the participants mentioned they knew they had clutter, and were aware stuff lying around was a problem. D.O. said “Anyone walking in might say, ‘My God, what is this?’ ‘cause I got stuff all over.” E.E. said, “That’s my problem—I don’t pick up.”

Three of the participants had dogs, which can be considered an environmental hazard. All three participants walked their dogs with leashes. Two of the participants had walkers they used while walking the dogs, and both commented on the awkwardness of handling the leash and the walker simultaneously, along with keeping track of where the dog was. Q.A. stated she was more apt to lose her balance when the dog was to the side of the walker rather than to the front or back.

Q.A. also commented on having to use a leash on the dog in the house when someone came to the door to prevent the dog from darting out. Her fear was she would trip over the leash while answering the door. Q.A. was contemplating purchasing a screen door so the leash on the dog would be unnecessary.

### **Theme 5: Mobility Aids**

Theme five discussed the use of mobility aids by the participants. Residents at Cypress Glen acquired a mobility aid three ways: by doctor prescription, through the Rehabilitation Department, or by purchasing one on their own. The Director of Rehabilitation at Cypress Glen stated residents got the devices from her department in one of two ways. The first was by undergoing an initial evaluation upon arriving at Cypress Glen and the second was by having to have rehab at some point while at Cypress Glen and being evaluated during the rehabilitation process. The Director of Rehabilitation said when the residents were evaluated, it was hoped they could get back to unassisted ambulation. If this was not the case, then the resident was evaluated as to what type of mobility aid was most suitable for his or her needs.

Of the fifteen participants, three used canes, twelve had some type of walker, and five people had power chairs. Three of the participants did not use any type of mobility aid at all. Six participants used two different aids, and one participant had three types of aid. These levels of aid increased slightly for Q.A. and C.E. between the first and second interviews. Q.A. used her walker more often due to further deterioration of her back because of scoliosis. For C.E., she felt that her continuing balance issues warranted using a walker for longer distances. D.B. was temporarily using a power chair to get to the central part of the building due to a hip problem, but anticipated a return to her previous level of function after some medical attention. N.A. had hurt her knee and because of that was using a golf cart or riding the tram to get to the main building

rather than walking over; she also hoped this was temporary. None of these changes appeared to change the participants' responses to questions regarding falling and the fear of falling during the second interview. In fact, Q.A., D.B., and N.A. agreed wholeheartedly with what they had said before.

### **Use of Mobility Aids**

The use of mobility aids did not change from the first to second interviews. The participants viewed the mobility aids in various ways, from a godsend to an irrevocable change. Some of the residents decided for themselves it was the right time to have help in getting around. When asked why he had started using a walker, D.O. responded it was due to his loss of balance and the fall where he hit his head and shoulder. E.F. stated he felt his walker was "better than the cane, 'cause it's more substantial and you got both hands clear." N.L. appreciated the portability of her walker: "I put this in the car so much and the other kind are too heavy." B.D. said, "If I can't see my walker, I'm worried." E.E. called his Rollator walker his "big reliance," that it "gave him the courage to go out and do what he needed to do." Q.A. recognized she had "declining mobility" and said she really "does not walk much without her walker now." She said her walker "is so light and easy to pick up and put in the car."

Conversely, A.C., who had just gotten his Rollator walker, felt "psychologically there's a negative to it. It puts me into the category of the handicapped; a different category." He also stated he could be logical, but he still felt "different." During C.E.'s second interview, when I asked her if she used the walker indoors, she still said, "I refuse to do that."

### **Within the Dwelling**

There was no change in the use of mobility aids within the dwelling between the first and second interviews. Many of the participants changed what type of mobility aid they used

depending on where they were. Inside their dwellings, the participants were more likely to use a lower level of mobility aid, or none at all. D.O. stated he had “two levels of aid: none, and none is in here [the apartment].” However, as stated above, D.O. looked to his furniture to save him should he fall. A.C. did not use any form of mobility aid in his cottage, either. He stated he did not use the walker in the house because he did not have to walk very far. C.E. also did not use her walker or her cane inside her cottage.

N.S. asserted she used her cane in the apartment, “so I can go from piece of furniture to [piece of furniture],” yet she felt “I seem to get around the house pretty well for the most part.” N.L. stated she did not always use her walker in the house: “I answered the door without the walker. No, I don’t always use it, but most of the time I do.” E.E. declared, “The cane is if I’ve got to give this up [the Rollator] and move around someplace, I use the cane for stability.” L.N. stated she used her walker all throughout her apartment. Q.A. used her walker in her house because she had scoliosis and could not walk well without it. D.D. said after rehabilitation she could not have moved back into her apartment unless she had a walker. She stated she had to get rid of three pieces of furniture to make room, “‘cause I have to be able to maneuver.”

### **Outside the Dwelling**

Again, the use of the aids did not change between the interviews, except for D.B.’s temporary use of a scooter outside the residence due to a hip problem. When the participants moved around outside of their dwellings, most chose to use a mobility aid. The Director of Rehabilitation commented on the long hallways the residents must traverse to get to activities and food as a reason for having a mobility aid. D.D. stated she used her power chair to go to the dining hall because “it’s too far to walk.” When Q.A. went to the dining hall, she drove over from her cottage, then used her walker in the main building. E.E. stated he walked to the dining

hall with his walker for breakfast, but when he went for the other meals he used his power chair “50 per cent of the time.”

N.L. used a walker whenever she went anywhere, both at Cypress Glen and in the wider community. C.E. said, resignedly, “I’m using the walker now when I walk outside.” She then said, “I only use my cane when I walk along the berm—I feel comfortable. I feel like if I fall, it’ll be on something soft [the grass].” She asserted she just used the walker when she did her half mile walk with her dog. C.E. had just adopted the dog, and was working with a trainer to acclimate the dog to a walker so that they would not get tangled up when they walked together. Q.A. also walked her dog while using a walker: “She pulls, but I have to pat myself. She doesn’t frighten me.” A.C. said he used his walker everywhere outside the house, including walking to the dining hall and walking for exercise. D.O. had all three types of mobility aids: a cane, a walker, and a power chair. He declared, “I try not to depend on one particular mode of transportation.” For use outside the apartment, D.O. stated he mostly used the walker or the power chair, but he asked himself, “How do I feel? Am I late? Do I have to take a lot of things with me to a meeting or something?” before making his decision.

### **Cautious vs. Fearful**

None of the participants interviewed twice changed their definitions of caution and fear between the first and second interviews. All the participants were asked to define cautious vs. fearful. I found it surprising that many of them answered with their mobility aids in mind. D.O. said cautious was: “now be sure and bring something with you: the cane or the walker,” while fearful was “a serious accident that could be avoided by being cautious.” D.B. felt she was “careful in everything I do,” moving and thinking. Her roommate described D.B. as “deliberate.” D.B. felt fearful was “afraid of something.” A.C. said cautious was “holding back and watching

for danger before you go there.” “Fearful means frightened that something might possibly happen to you.” To C.E., cautious meant taking her cane, watching that there’s nothing in the way, looking out for uneven surfaces. Fearful meant you wouldn’t go anywhere at all, “you would just be right here and never go.” N.S. said caution is “Just common sense. You begin to know your own limits.” N.A. described fearful as “your mind is unsettled, not at rest. You couldn’t sleep or feel normal.” She thought of cautious as “Attention. Paying attention. When I walk, if I focus, fine.” N.L. said cautious meant not walking without your walker [although she did at times]. E.E. stated “Fearful is—if I walk with this thing [the Rollator], it’s because I’m afraid. Cautious is using the equipment.” L.N. said “fearful means I’ve got to be careful, and cautious means that when I’m up, I’ve always got a hold of that—in the bathroom, I turn and go right to the commode with that [walker]—I don’t leave it.” Q.A. asserted “cautious is when I’m walking with this walker, and I go from the street level to the curb level, I put that rubber end down first, going up or down. Fearful would be afraid to go anywhere.” She also believed “fearful would be afraid to go anywhere and I’m not, so that is a distinction.” D.O. stated being careful was to “be in a place, I guess you could say, be in a place where I could catch myself in case I did go off balance.”



## CHAPTER 5: DISCUSSION

The objective of this study was to provide occupational therapists with insight into how falling and the fear of falling impacts independently living older adults in a continuing care retirement community. The data revealed themes that may give researchers and health care providers a greater understanding of the needs of this particular population.

Older adults have particular health risks, two of which are falling and the fear of falling. These subjects are important, in part because of the aging of the United States population. There will be more older adults in the population in the coming years due to the aging of the “Baby Boomers” (NCDHHS, 2008); there will also be a concomitant rise in the number of falls and perhaps the fear of falling. This in turn will cause a greater economic impact as we all share in the burden of paying for the health care costs associated with falling. There may also be a personal cost, as the older adult who falls and/or is afraid of falling may self-restrict activities due to these problems. This may create a vicious cycle of loss of confidence followed by inactivity, followed by a greater loss of confidence followed by greater level of inactivity, and so on.

The subjects of falling and the fear of falling are multifaceted and complex, with various factors influencing and being influenced by other factors. Falling is known as a geriatric syndrome because of the likelihood that multiple underlying concerns play a part in a fall (Flacker, 2003, p. 575). Intrinsic factors, extrinsic factors, or a combination of both may cause falls. A simple example of the intersection of factors is poor vision leading to a stumble on an uneven sidewalk.

Understanding the effects of falling and the fear of falling is not only important for older adults, but also for occupational therapists, other healthcare providers, and researchers studying this population. Examining a particular segment of the older adult population, such as older

adults at a CCRC, not only offers a concentrated examination of falling and the fear of falling, but also contributes to the overall knowledge of both subjects. Examining what life is like for older adults at Cypress Glen adds to the research on falls and the fear of falling because it illustrates how this particular CCRC plays a role in the perceptions of these older adults. Older adults living in a CCRC may have a different perspective on falls and the fear of falling from other segments of the older adult population, like those who live in the community or those living at a SNF. Because living at a CCRC is a relatively new concept, looking to that population for information on falls has been ignored. In addition, research into the subjective aspect of falls and the fear of falling with the older adult population has also been sparse. The purpose of my research study was to understand this unique viewpoint; therefore, my research question was “What is the perceived impact the experiences of falling and the fear of falling have for older adults who live independently in a Continuing Care Retirement Community in eastern North Carolina?”

It is known that there are many different aspects to falling and the fear of falling. The participants’ experiences mirrored this in their interviews. The evidence provided was anecdotal; however, the participants’ first person accounts gave the research immediacy not achieved through quantitative study. The words, phrases, and narrative stories they used were important, but their inflection, tone of voice, body positioning, and body language gave further meaning to what they were saying.

Many of the participants had intrinsic risk factors predisposing them toward falling. Fourteen out of the fifteen participants were over the age of eighty, which made them four times as likely as their younger cohorts to experience a fall (Tinetti et al., 2006, p. 718). Nine of the fifteen participants were women, whose gender also predisposed them to a greater risk of injury

when falling (CDC, 2007). Several of the women were taking calcium supplements, either orally or by injection, to help stave off loss of bone and prevent fractures (Office of Dietary Supplements, 2009). Twelve out of the fifteen participants admitted to experiencing dizziness and/or a loss of balance as they rose from a seated position and/or walked. Although fourteen out of the fifteen participants walked outside of their dwellings, not all participated in an exercise routine, and most of them were not getting the minimum amount of physical activity recommended by the National Institute on Aging (2010). Two out of the fifteen participants' MMSE scores suggested a level of cognitive deficit that could predispose them to falls. Each participant I spoke with had had cataract surgery, but only one participant had further eye problems, that being macular degeneration. Since visual deficits have been identified as one of the top four fall risk factors, all of the participants may be at a higher risk for falls (Painter, 2009). Two of the fifteen participants were also clinically depressed, another intrinsic risk factor for falls (Stel, Smit, Pluijm, Lips, 2004, p. 63).

These participants also had some extrinsic risk factors that could cause falls. Three of the fifteen participants had clutter within their dwellings, but two were mindful of the problem and actually pointed out this condition in their interviews. Three of the participants owned dogs, another potential environmental risk. Polypharmacy, another top four risk factor (Painter, 2009), was prevalent with ten participants, and all ten were either taking anti-hypertensive medication and/or antidepressants, both implicated in causing dizziness (Leipzig, Cumming, & Tinetti, 1999, p. 33). One of the participants was diabetic and had heavy shoes that made it more difficult to walk. The final extrinsic risk factor, previous falls, affected the twelve participants who had fallen in the past. Any fall predisposes the person to having another fall, but only one participant

could be classified as a recurrent faller (having had more than one fall in six month time period). (Hill, Womer, Russell, Blackberry, & McGann, 2010, p. 1769).

Multiple risk factors combine any number of intrinsic and extrinsic fall risk factors (Godfrey & Studenski, 2010, p. 185), which all of the participants at Cypress Glen reported. For example, some participants were over eighty years of age, took more than four medications, had a cognitive impairment, and reported balance concerns and home safety issues. The participant with the fewest risk factors had two issues, age greater than eighty years and being of female gender. The two participants with the highest number of risk factors had six: age greater than eighty years, being of female gender, taking multiple medications, balance and nutrition issues, and previous falls.

Risk factors prevalent for the fear of falling include: frailty, psychosocial factors, age, gender, a history of falls, environmental hazards, and the severity of previous falls experienced (Arfken, Lach, Birge, & Miller, 1994, p. 567; Bertera & Bertera, 2008, p. 56; CDC, 2007; Filiatrault, Desrosiers, and Trottier, 2009; p. 891). Thirteen of the fifteen participants reported frailty concerns due to lower extremity weakness, lack of stamina, lack of balance, and/or the use of a mobility aid. Interestingly, only one of the four participants who reported depression, a cognition impairment, and/or a permanent state of anxiety also reported a fear of falling. Conversely, past research has shown older adults who have both depression and anxiety are more likely to develop a fear of falling (Cesari et al., 2002, p. 723). As stated before, fourteen participants were older than eighty years of age, and nine of fifteen were women, two other risk factors for fear of falling. Another risk factor, a history of falls, is relevant for twelve of the fifteen participants. While outside environmental hazards could not be controlled, six of the fifteen participants had environmental hazards within their living spaces as well. The last risk

factor for fear of falling is the characteristics of a fall. When and where did the fall happen? Was there a resulting injury? Thinking about a previous fall may cause the person to fear another fall. Six of the participants did have a fear of falling, and all six had had previous falls. Three of the participants felt that they had a fear due to these falls in the past.

However, when these participants spoke about falls and the fear of falling, there seemed to be two mitigating factors that helped allay these concerns, resilience and location. The first, resilience, was a characteristic I found to be prevalent in these participants although none of them used this word to describe themselves. Wagnild & Collins (2009) described resilience as “inner strength, competence, optimism, flexibility, and the ability to cope effectively when faced with adversity” (p. 29).

Another definition of resilience is having traits of “purpose, perseverance, equanimity, self-reliance, and existential aloneness” (Wagnild & Collins, 2009, p. 30). Purpose can mean having something to do; an occupation. All of the participants had a physical activity, a social activity, and/or a volunteer job they had undertaken, and therefore, had purpose in their lives. Perseverance is the ability to keep going, despite obstacles in the path. All of the participants had faced difficulties such as the loss a spouse or a chronic medical problem, but managed to continue on with their lives. Equanimity is the ability to take highs and lows in stride and keep life balanced. One of the participants said that he probably would fall again, and if he did, it might be his last fall. However, he was not unduly upset by this thought. Self-reliance is a “belief in one’s personal strengths and capabilities” (Wagnild & Collins, 2009, p. 30). Many of the participants saw themselves as capable individuals who managed their daily routines without assistance. Existential aloneness is the understanding that each person is different and because of this, some experiences are shared, while others are handled alone. While none of the participants

talked about this, they seemed to have an inherent understanding of their places and their lives as opposed to others’.

While most of the participants at Cypress Glen had experienced falls and/or stumbles, and some had a fear of falling, they were resilient enough to continue on with the daily pattern of their lives. Some participants used the falls/stumbles as catalysts for changing how they moved and some began to use mobility aids to help prevent problems. Some became more cautious, but for the most part did not restrict their activities or change their level of activity. Even those participants with the greatest fear of falling did not restrict their activities.

The second factor that helped alleviate the participants’ concerns was the setting of Cypress Glen itself. Aging in place is a concept that embraces the ideas of inclusion, health, engagement, and interdependence (Thomas & Blanchard, 2009, p. 14). In part, these elements can exist because as the older adult ages, they remain in the same facility. Aging in place concepts are compatible with the theory of “therapeutic landscape” which suggests “how places, and the relationship people have with those places, can have beneficial effects for well-being” (Cutchin, Marshall, & Aldrich, 2010, p. 118). A setting that enhances health, inclusion, interdependence, and engagement is therapeutic for its residents. Cypress Glen was a “therapeutic landscape” for the participants.

The descriptions of the setting provided by the participants delineated not only what amenities and services Cypress Glen had, but illustrated how the participants used the facility and what they believed the most important features to be. In addition to what and how, where (in what setting) the activities took place and who the participants were with as they did the activities were other important elements when examining the therapeutic benefits of Cypress

Glen. Participants used all of these components to describe the role Cypress Glen played in their lives.

According to Cutchin, Marshall, & Aldrich (2010), there are a number of things about CCRCs that can be considered therapeutic for older adults (p. 120). Cutchin, Marshall, & Aldrich (2010) believe environment is a therapeutic element (p. 120) and that symbolism within the buildings at a CCRC is typically meant to establish certain cultural values of the generation living there as well as provide a sense of who the residents view themselves as—members of a higher socio-economic class (Cutchin, Marshall, & Aldrich, 2010, p. 120). The appearance and connection the building design makes with its residents is one aspect of environment. Another agrees with the concept of livable communities, which suggests spaces for privacy and spaces for interaction with others, landscaping that is functional yet complements the facility, and ease of use for all (Hrehocik, 2009, p. 20). The environment at Cypress Glen included the physical layout and various services and amenities available to the residents. Cypress Glen created a parklike setting for its facility, and residents on all sides of the building and throughout the cottage area had a view of more than just concrete or pavement. In addition, Cypress Glen provided many of the details older adults look for both inside and outside of the residences: well-lit grounds, landscape detailing, full-size appliances, spacious rooms, wiring for technology, and lots of interior light (Hrehocik, 2009, p. 20). There was a main building with centrally located rooms for various community gatherings, interior hallways for residents, transportation for those in outlying buildings, and a neighborhood feel. Cypress Glen was cognizant of the importance of these features to the quality of life for the older adults living there.

Another component of the therapeutic landscape was security: physical, psychological, and communal (Cutchin, Marshall, & Aldrich, 2010, p. 120). Physical security is the knowledge

that the community has measures in place for emergencies, such as medical problems and/or unlawful acts. Cypress Glen incorporated a PAD system, but also employed security guards to patrol the grounds and buildings in addition to assisting the residents. Added to that is internal feeling of security. This psychological aspect, again, is also a hallmark of aging in place. The residents knew that their needs, whatever they might be, would be taken care of simply by residing at Cypress Glen. They had independence, but if an injury or illness occurred, they would not have to leave their surroundings to get assistance. Finally, there is the security of being surrounded by familiar staff and residents. This is a part of social capital as well; people forming voluntary, reciprocal relationships and being able to call on each other when needed (Thomas & Blanchard, 2009, p. 12). The staff at Cypress Glen showed care and concern for those they served, and it was apparent to the participants that this was true. The residents also looked out for each other, both through strong interpersonal relationships and the Care Buddies program.

The communal design of Cypress Glen might also be considered therapeutic. Cutchin, Marshall, & Aldrich (2010) state:

For many new residents of CCRCs, the communal experience of shared dining, shared spaces, and interactions is a change from pre-CCRC life. While new residents face important adjustments in a CCRC community, the formation of communal relationships among residents, staff, and family is most likely a positive process (p. 120).

Aging in place and social capital also recognize that shared ties unite communities and provide a sense of inclusion. The importance of community cannot be understated when it comes to describing the lives of the participants at Cypress Glen. Many participants commented on the dining hall as one of their favorite places at Cypress Glen, a space for socializing with friends and family, and other activities such as Resident Council meetings where they were a part of a



group. There were exercise classes, arts and crafts, opportunities for governance, and various social activities and volunteer opportunities to further connections among residents. In addition, the residents themselves formed an organization, the Care Buddies, to act as a support for those in need. Being a Care Buddy demonstrated a willingness to participate in community life.

Social capital's main concepts are that the relationships are voluntary and mutual. Residents at Cypress Glen interacted with the staff, other residents, friends, and family members. Two of the participants had spouses, who were central to their lives. Participants mentioned other family too, but for many, their relatives were not close by. However, for those that were, participants often stated that they joined in on- and off-campus activities together. Many participants mentioned friends with whom they did various activities, from exercising to traveling to playing games. Participants often recognized the staff for the time and energy they devoted to the residents, above and beyond job requirements.

In addition, "A fourth dimension of the therapeutic landscape of CCRCs is the range of activities structured into the setting (Cutchin, Marshall, & Aldrich, 2010, p. 120). Cypress Glen provided a Resident Program and Activities staff that organized activities and outings, supplied someone to set-up and tear-down for activities, sponsored classes for art, computer, and other learning experiences, and generally assisted residents in whatever they would like to do. The participants were enthusiastic about the extracurricular activities in which they took part. All of the participants had occupations within the community which added to the fullness of their lives. The participants engaged in physical activity, as well as social activities and volunteer work. Rudman and associates (1997) found that activity, for older adults, is an important contributor to "well-being, identity, social experience, time organization, and the integration of past, present, and future" (p. 647).

Understanding the mitigating factors at Cypress Glen that enhanced engagement and activity led to a greater understanding of what falling and a fear of falling constituted for the older adult who lived there. In the study done by Cutchin and associates (2010), it was discovered that the type of activity changes when an older adult moves to a CCRC. Some of the activities that decreased were housekeeping, cooking, and grocery shopping, while the ones that increased included exercising and attending concerts and movies. Evidence from Cypress Glen's participants followed the same pattern. This turn to activity that is of a more social nature illustrates a lifestyle more concerned with personal well-being and social involvement, which in turn leads to greater life satisfaction and quality of life.

Successful aging can be defined as “the enjoyment of health and vigor of the mind, body, and spirit into middle age and beyond. For many, it is also the freedom from impairment and the ability to live independently” (Wagnild, 2003, p. 43). Participation in physical activity and social activity and absence of disease and disability were indicative of successful aging, as were having close personal contacts and freedom from depression (Wagnild, 2003, p. 43).

In looking at the participants in this study, many embodied the spirit of resilience and successful aging. Many appeared vigorous in mind and spirit, which to a certain extent overcame the debilitations in their bodies. Almost all participated in some physical activity, and all participated socially. All of the participants lived independently, although three needed help in the morning for bathing and dressing. All of the residents had at least one close personal contact, and no more than two were clinically depressed. Out of the fifteen participants, only six declared an outright fear of falling, and many of the participants seemed to shrug off the falls they had experienced. In addition, many of the participants, despite having had a fall, were not recurrent fallers (experiencing two or more falls in a six month time frame). Mobility aids allowed most of

the participants to experience the freedom of independence, and were intrinsic to the participants' ability to be resilient.

### **Implications for Occupational Therapy**

Findings from this novel qualitative study present occupational therapy practitioners with an opportunity to better understand falls and the fear of falling among independent older adults living in a CCRC. Additionally, results provide a picture of what living at a CCRC is like, which helps explicate how falling and the fear of falling are perceived at this venue.

Occupational therapy practitioners could use these findings to discover what concerns are prevalent for older adults living independently at a CCRC and what diminishes those concerns.

While there were identifiable factors that could lead to falling and/or the fear of falling in this population, the most important point to appreciate regarding these older adults was their resilience, or their ability to bounce back after a fall and/or stumble and continue on with their lives. Though twelve of the fifteen older adults interviewed indicated they had fallen at least once in the past five years, there was little diminution in participating in their community. Being cognizant of their vigor, activity level, and passion for life would be important for occupational therapy practitioners in developing wellness and fall prevention programs for older adults living in a CCRC. Engagement in purposeful activities is a basic tenet of the occupational therapy profession (OTPF, 2009, p. 672). Since a component of resilience is purpose, occupational therapy practitioners should make sure their programs give this population a sense of purpose, especially when directing wellness programs.

The primary intrinsic fall risk factors identified by the participants of the study included balance and vision deficits, cognitive insufficiencies, depression, and lack of physical activity. The most prevalent extrinsic factors associated with falling were using furniture and other unsafe

items for assistance and polypharmacy (especially the use of antidepressants and anti-hypertensive drugs). Thus, occupational therapy practitioners and other health professionals working at a CCRC should develop a comprehensive fall prevention program. Fall assessments should address balance issues, vision and cognitive deficits, depression, anxiety, and physical activity level, while environmental issues should be approached from an educational standpoint. As seen in many research studies, a multifactorial approach to fall prevention is the preferred method to address the concerns present with this population (Godfrey & Studenski, 2010, p. 185; Nevitt et al., 1991, p. 169; Tinetti et al., 1988, p. 117). Multifactorial intervention programs concentrate on various identified factors that place an individual at risk for falls. Occupational therapists are suited to administer this type of program because our top-down approach lets us address problems from a comprehensive perspective, looking at the whole individual rather than a collection of body parts.

Occupational therapists are well qualified to speak to the area of fall prevention, in part because of this holistic style. Therapists employ a multifaceted approach to evaluation and treatment of the whole person, including clinical reasoning, observation skills, analytical skills, and the therapeutic use of self (“an occupational therapist’s planned use of his or her personality, insights, perceptions, and judgments as part of the therapeutic process” (OTPF, 2009, p. 653). These aspects of occupational therapy help serve the needs of the client. Falls can occur throughout an older adult’s day, merely by attempting to engage in normal habits and routines. Occupational therapists can give suggestions, demonstrations, and assistive devices to help the older adult at a CCRC in safely completing the ADLs and IADLs common throughout the day. Occupational therapy is a client-centered practice as well, which benefits clients in a setting such as a CCRC, away from the healthcare community. Working collaboratively, the client and the

occupational therapist can plan goals and an individualized course of action, in a way that meets the client's needs and desires. For falling and the fear of falling, the occupational therapist could schedule a home visit to determine what, if any, environmental hazards were present in the home. The therapist could suggest strategies to modify or create better ways of arranging furniture to make clear pathways. If the client had vision issues, the therapist could suggest placing bright tape at the juncture of tile and carpet to help delineate the surfaces. Future CCRC design

Older adults at Cypress Glen naturally gravitated to small groups of shared interests. Occupational therapists could use these events to their benefit when designing fall prevention programs by developing similar groups or using groups that are already in place. Being in a familiar group would put the clients at ease and allow them to draw comfort and inspiration from each other. Using the findings for this study, a therapist could create a group that focused on balance and physical activity deficits, such as Tai Chi. Occupational therapy practitioners could also set up an educational group that concentrated on identifying, eliminating, and/or modifying home hazards.

Because this study was conducted at a CCRC, the findings may prompt other CCRCs, Assisted Living [AL], and Skilled Nursing Facilities [SNF] to replicate the successful implementations of physical and social activities that encouraged the older adults at Cypress Glen to age successfully. In addition, the findings may prompt Cypress Glen and other CCRCs, ALs, and SNFs to create or modify environments that will reduce falls and diminish the fear of falling for their older adult clients in the future.

## **Limitations**

Using the sampling technique called maximum variation, I attempted to show as broad a range as possible of experiences that occurred when an older adult fell and/or developed a fear of falling while living at a CCRC. However, people who live at a particular CCRC generally do so because they want to live among people who have the same cultural values as themselves. While Cypress Glen did not discriminate against any race, gender, or ethnicity, it did have certain financial criteria for the prospective resident. Therefore, a certain SES existed at this facility and dictated in part who my participants would be. There were six men and nine women in the study, making the study slightly imbalanced when looking at gender, which could have influenced the number of people who fell and/or reported a fear of falling. Regarding numbers, phenomenological studies generally look at small cohorts. However, to get a more realistic picture of falling and the fear of falling, a larger number of participants would probably have given a more extensive variation of experiences. There was also not enough variation in age, with only one participant in the old-old category and no participants from the young-old category, leaving almost all participants in the oldest-old group. This may have had an influence on health problems, choice of activities, number of medications taken, level of physical activity, and/or other factors. All of the participants were Caucasian, so diversity in ethnicity and race was not represented. Five of the residents lived in cottages, making the study imbalanced when looking at location within the community. Only two of the participants were married, and only one lived with a spouse, so there was a skew toward participants who were living alone. This could also have caused an impact on choice of activities and the impact of the fear of falling due to a lack of social support. Most of the participants used some form of mobility aid; this too could have had an impact on their activity level, choice of activity, and influence on their fear of

falling. There was another limitation, due to much of the collected data being self-reported. This type of information may not have been as thorough as possible, due to the subjective nature of question and answer. The participant might have been reluctant to ask for clarification when not completely sure of the question, or unable and/or unwilling to give a complete answer to any given question. Some participants had a fear of falling, which was not necessarily comfortable to discuss, especially with a stranger. Due to the intimate nature of the subject, the interview process might have stopped short of fully exploring the participant's experience with this phenomenon. They might not have been as ready and willing as they thought they were to share such private information.

The failure of the *Livescribe* pen was another limitation. Having lost the audio data from my first ten participants, I went back and re-interviewed nine of them. While I do think this increased the rigor of my study, it could also have had an adverse effect. For one thing, it allowed the participants an approximately three month window to reflect on what they had said during the first interview. This time might have led them to clarify and enhance thoughts touched on in the first interview. It also possibly changed my approach to the interview for the same reason: I had had time to reflect on the subject as well, plus I had interviewed five other participants in the meanwhile. Each interview added to my knowledge of the subject from the participant's perspective and might have caused the interviews to be biased based on what I had heard previously. (For example, the idea of resilience became more apparent as the interviews went on.) In addition, I knew the participants better than I had before, and there might have been a certain comfort level between us that did not exist during the first interview, causing them to share more than the other five participants. Therefore, issues may have been stated more baldly in the second interview than the first. By that token, the five people who I only interviewed one

time might not have said everything they could have regarding the subject due to this lack of intimacy.

Due to the small number of participants, these findings are not readily generalizable to other populations. This is also true because the culture to be found in eastern North Carolina is not necessarily the same as the culture in other geographic locations.

### **Suggestions for Future Research**

Additional research regarding falling and the fear of falling at a CCRC is needed. It would be of benefit to look at a wider variation of age, geographical location, ethnicity, race, SES, the married population, location within the facility, and a wider range in the use of mobility aids: issues this study did not address. These broader reaches of falling and fear of falling research would present a more accurate representation of CCRC communities.



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APPENDIX A: UMCIRB Approval

UMCIRB #:

UNIVERSITY AND MEDICAL CENTER INSTITUTIONAL REVIEW BOARD  
HUMAN BEHAVIORAL AND SOCIAL SCIENCE CONTINUING REVIEW OR STUDY CLOSURE

\*\*\*Note: Each section should be completed regardless of whether this form is being submitted for continuing review or closure of a research study.\*\*\*

DEMOGRAPHIC INFORMATION

UMCIRB Number: 09-658 Date this form was completed: 8/22/2010

Title of research (this title must match protocol, consent form and funding application, if applicable): The Lived Experience of the Fear of Falling for Older Adults who Live Independently in a Continuing Care Retirement Community in Eastern North Carolina

Principal Investigator, credentials, department, section and school: Caroline R. Berry, OTS Grad Assistant, Department of Occupational Therapy, College of Allied Health Sciences at East Carolina University

Subinvestigators, credential, department, section and schools: Dr. Jane Painter, EdD, OTR, CAHS, ECU

ITEMS FOR APPROVAL

Research study being submitted for renewal.

Version of the most currently approved protocol:  
Version of most currently approved consent document:  
List all other items that are currently approved (i.e. advertisements, questionnaires, study measures, etc.) and need to be re-approved for new approval period. Listing these items enhances the renewal process to make sure all research items required to conduct the research study will be re-approved:

No items need to be approved since study is being closed.

INVESTIGATOR QUALIFICATIONS

Research study being submitted for renewal.

Provide the date of completion for the UMCIRB Human Subjects Protections training modules for the principal investigator, any subinvestigators and coordinators if this study is being renewed (must be current within 3 years): 2/2009

No UMCIRB Human Subjects Protection training modules information is necessary since study is being closed.

Have there been any changes in your credentialing, licensure, certifications or privileges since the last continuing review?  yes  no If yes, describe.

SOURCE OF FUNDING:

- Government Agency, Name:
- Private Agency, Name:
- Institution or Department Sponsor, Name:
- no source of funding exists for this research

UMCIRB #:

Fund number for IRB fee collection (applies to continuing review of all for-profit, private industry or pharmaceutical company sponsored projects):

Fund	Organization	Account	Program	Activity (optional)
		73059		

**CHECK ALL INSTITUTIONS OR SITES WHERE THIS RESEARCH STUDY WILL BE CONDUCTED:**

- East Carolina University  
Greenville, NC
- Other Cypress Glen Continuing Care Retirement Community,

**AMENDMENTS / REVISIONS / MODIFICATIONS**

There have been no amendments, revisions or modifications to the research protocol since the last review.  
 Yes, there have been amendments, revisions or modifications since the last continuing review. Attach the UMCIRB revision form for any revision that is being considered for approval along with this continuing review. List the title or reference each item including version date and UMCIRB approval date.

There have been no amendments, revisions or modifications to the consent document since the last review.  
 Yes, there have been amendments, revisions or modifications to the consent document since the last continuing review. Attach the UMCIRB revision form for any revision that is being considered for approval along with this continuing review. List the title or reference for each the item including version date and UMCIRB approval date.

This is not a grant funded study.  
 There have been no amendments, revisions or modifications to the grant since the last review.  
 Yes, there have been amendments, revisions or modifications to the grant since the last continuing review. Attach a copy of the updated grant application with changes outlined or highlighted.

**PARTICIPANT ACTIVITY**

Sample size proposed in the research	12-15
Total number of participants enrolled at all research sites to date	15
Total number of participants enrolled at this site since the research was initially approved	15
Total number of participants enrolled at this site since the last continuing review	0
Total number of participants completing all aspects of research at this site since the last review	15
Total number of participants involved in the follow-up portion of the research at this site	14
Total number of participants locally withdrawn prior to research completion	0

Provide specific details regarding all participant withdrawals from the research study, whether voluntary or initiated by the investigator.

Describe any difficulties in participant enrollment, specifically if the enrollment goals have not been reached as originally outlined. Describe the impact this will have on completing the study.

If you have exceeded the sample size initially proposed for this research study, provide a rationale.

**MONITORING AND ONGOING ACTIVITIES**

There have been no locally occurring serious adverse events or events resulting in unanticipated risks to participants or others since the last review.  
 Yes, there have been locally occurring serious adverse events or events resulting in unanticipated risks to

UMCIRB #:

participants or others since the last review. Attach an Adverse Event Reporting Form for any previously unreported serious adverse events. Applicable serious adverse events that have previously been reported should be listed by referring to the study participant code/number, date of event, type of event, and date submitted to the IRB office.

There have been no protocol deviations/violations for this research study since the last review.  
 Yes, there have been protocol deviations/violations for this research study since the last review. Attach a Protocol Deviation Form for any previously unreported protocol deviations/violations. Any protocol deviations/violations that have previously been reported should be listed by referring to the study participant code/number, date of event, type of event, and date submitted to the IRB office.

There have been no regulatory auditing activities or monitoring visits by a sponsor, institutional officials or outside agency since the last review.  
 Yes, there have been regulatory auditing activities or monitoring visits by a sponsor, institutional officials or outside agency since the last review. Attach a report of these activities if the outcome was unfavorable or unacceptable. List the auditor/monitor (sponsor, institution, federal agency) and date of the activity.

There has been no analysis or reports by a data monitoring committee since the last review.  
 There has been an analysis or report by a data monitoring committee since the last review. Attach the report to the continuing review form if not previously submitted. If this report has been previously submitted to the UMCIRB, list that date.

There have been no publications or presentations generated from the local investigator involved in this research since the last review.  
 There have been publications or presentations generated from the local investigator involved in this research since the last review. List all publications or presentation resulting from information generated by this research generated by local investigators or sponsors. Attach the published materials to the continuing review form.

There have been no new developments generated by this research that have an impact on the assessment of potential risks or benefits for participation in this research study since the last review.  
 There have been new developments generated by this research that have an impact on the assessment of potential risks or benefits for participation in this research study since the last review. Describe these new developments.

There are no additional comments or information that may be pertinent to the review of this research.  
 There are additional comments or information that may be pertinent to the review of this research.

#### CONFLICT OF INTEREST

There are no potential conflicts of interest involving any member of the research team since the last review.  
 There is now a potential or actual conflict of interest involving a member of the research team since the last review. Complete and attach an updated UMCIRB Conflict of Interest disclosure form.

#### REQUIRED ATTACHMENTS FOR CONTINUING REVIEW

\*\*\*Note: To determine whether a research study should go to the full committee for review and approval or if the study can be approved by expedited review, see [Instructions](#).

#### Full Committee Review:

- 2 copies of protocol
- 2 copies of publications/presentations
- 20 copies of continuing review form

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UMCIRB #:

- 20 copies of ALL consents/assents
- 20 copies of protocol summary

\*\*These should be collated into individual packets with 2 of the packets containing the protocol and any publications/presentation information.

Expedited Review:

- 1 copy of protocol
- 1 copy of continuing review form
- 1 copy of ALL consents/assents
- 1 copy of protocol summary
- 1 copy of publications/presentations

\*\*\*Consent Documents

- 1) Continuing participant enrollment: Attach one clean copy (no notes, no highlighting, no stamps or no signatures) of the current consent document. This clean copy of the consent document will be stamped and returned to the investigator with the current approval period. *This stamped consent document should be the only form used to consent participants.* All previous versions of this consent document are considered invalid and may not be used to consent participants.
- 2) Closed to participant enrollment: Attach one copy of the current consent document. Note: A stamped consent document with the new approval period will not be sent to the investigator.

\*\*\*HIPAA Authorizations and Waivers of Authorization do not expire and, therefore, do not need to be resubmitted to the UMCIRB office.

CLOSURE OF A RESEARCH STUDY

- Each section should be completed regardless of whether this form is being submitted for continuing review or closure of a research study
- No consent documents are necessary.
- A copy of the protocol or protocol summary is not required.

ACTION REQUESTED

- Renew—continued participant enrollment
- Renew—no additional participant enrollment with follow-up for enrolled participants only, utilizing research related interventions conducted solely for gathering protocol related information
- Renew—no additional participant enrollment with long-term follow-up for enrolled participants only, utilizing follow-up interventions considered standard of practice that creates no research related burden for participants
- X  Renew—no additional participant enrollment; data analysis and interpretation only
- Terminate—research completed with no additional participant enrollment or collection of follow-up information. Provide rationale for study termination:

---

Principal Investigator Signature

Print

Date

## APPENDIX B: Consent Form

### Consent Form

**Title of Research Study:** *The Lived Experience of the Fear of Falling for Older Adults Who Live Independently in a Continuing Care Retirement Community in Eastern North Carolina*

**Principle Investigator:** Caroline R. Berry, OTS

**Institution:** ECU, CAHS, Department of Occupational Therapy

**Telephone #:** 252-744-6194

#### Introduction:

You have been asked to participate in a research study being conducted by Caroline Berry. This research study is designed to better understand some of the issues related to a fear of falling in older adults who live in a Continuing Care Retirement Community (CCRC). A fear of falling may be present even when an individual has never fallen before, and is more likely to be present in someone who has fallen in the past. The test that will be performed is to understand your level of cognitive functioning.

Further to the study, I will ask questions to find out how you feel about falls, fear, and the fear of falling, as well as your activities and activity level and what influences your decisions on your activities. I will also ask you about the feelings you experience in your everyday life. You may refuse to answer any of the questions asked of you. Your answers will be voice recorded and notes will be taken, with your consent, during this question period. Interview content that is voice recorded will assist the researcher in analyzing the results of the interviews. Lastly, general information will be gathered about your age and past experience with falls.

I will also ask you to participate in a poetry activity that will help you and I, as partners in research, to discover feelings and thoughts about falling and fear of falling. You may also be asked to draw these thoughts and feelings.

You will also be asked to sign a separate photographic release that will indicate you either accept or decline to have your picture taken while participating in this research project. Your acceptance or refusal to have your picture taken will not influence your ability to participate in this study. Your photographs may only be used for presentations of the research study.

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FROM 9.18.05  
TO 9.19.10

fear of falling. Also, it is hoped that the information gathered from this study will help therapists understand how a fear of falling influence an older person's daily life and his or her choices. You will have a better understanding of your risks related to falling as a result of participating in this research study. You may participate in a post-study meeting to go over the results.

**Subject Privacy and Confidentiality of Records**

Only the research team members will know your results unless you provide additional permission for your doctor to receive them also. The consent document and the results of the test will be kept in a locked file cabinet in Caroline Berry's residence.

**Costs of Participation and Compensation**

There will be no costs to you for participating in the research study. The does not provide payment or medical care for research participants because of physical or other injury that result from this research study. Every effort will be made to make the facilities of the School of Medicine and Pitt County Memorial Hospital available for care in the invent of an injury.

**Voluntary Participation**

Participating in this study is voluntary. If you decide not to be in this study after it has already started, you may stop at any time without losing benefits that you should normally receive. You may stop at any time you choose without penalty.

**Persons to Contact with Questions**

The investigators will be available to answer any questions concerning this research, now or in the future. You may contact Caroline Berry at [crb0721@ecu.edu](mailto:crb0721@ecu.edu), or Dr. Jane Painter at phone number 252-744-6194 or email her at [painter@ecu.edu](mailto:painter@ecu.edu). If you have questions about your rights as a research subject, you may call the Chair of the University and Medical Center Institutional Review Board at phone number 252-744-2914 (days).

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FROM 9.18.09  
TO 9.17.10



At the conclusion of the study, an evidence-based fear of falling community education program, *Matter of Balance*, will be offered, at no charge, to you.

#### **Plans and Procedures:**

Part 1: You will be asked to do the following assessment at no cost: The Mini Mental State Exam (MMSE). This will take approximately one half hour. Someone will read these questions to you if you have forgotten your glasses or have difficulty reading for any other reason. You may also answer without assistance, if you prefer. An appointment will be scheduled at your convenience to answer these questions.

Part 2: You will be asked a variety of questions to help the researcher learn more about falls and the fear of falling among independently-living CCRC residents. You may refuse to answer any questions asked of you. With your permission, your answers will be recorded and notes taken. If you do share information you later decide you do not want used in the research, please let me know and I will delete that information from my notes. At this time you will also create a brief haiku poem that describes how you feel about falling and perhaps draw a picture that illustrates the same.

Part 3: You are invited to participate in the *Matter of Balance* program for managing concerns about falls. You would attend classes which will be held twice a week for four weeks at Cypress Glen (the CCRC.) The classes will last two hours each. Topics include: introduction, exploring thoughts and concerns about falling, exercise and fall prevention, assertiveness and fall prevention, managing concerns about falling, recognizing "fall-ty" habits, recognizing fall hazards in the home and community, and practicing no "fall-ty" habits and putting it all together.

#### **Potential Risks and Discomforts**

You may become tired during the MMSE and subsequent interview and poetry activity. You will be allowed to rest as long as you like or may stop at any time. These activities do not require a lot of physical activity or continued movement. You may become uncomfortable answering some of the questions. If so, you may stop at any time or discuss your feelings with the investigator.

#### **Potential Benefits**

We hope the information you learn during the *Matter of Balance* classes will help you learn how to modify your daily life and environment to lessen your

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**Title of Research Study:** The Lived Experience of the Fear of Falling for Older Adults Who Live Independently in a Continuing Care Retirement Community in Eastern North Carolina.

**Permission to have interview voice recorded:**

- I agree to have my interview voice recorded  
 I refuse to have my interview voice recorded

**Consent to Participate**

I have read all the above information, asked questions, and have received satisfactory answers in areas I did not understand. (A copy of this signed and dated consent form will be given to the person signing this form prior to conducting any research procedures.)

---

Participant's name (Print)	Signature	Date
----------------------------	-----------	------

**Permission to be re-contacted for future research being conducted by Caroline Berry regarding falls research**

- I would like to be contacted to participate in future falls research  
 I do not want to be contacted to participate in future falls research

I have conducted the consent process and orally reviewed the contents of the consent document. I believe the participant understands the research.

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Principal investigator (Print)	Signature	Date
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TO 9.17.10

## APPENDIX C: Interview Questions

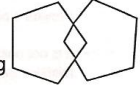
1. What does the experience of falling mean to you?
2. What does the experience of the fear of falling mean to you?
3. Describe your falls.
4. Do you have a fear of falling?
5. Has falling or the fear of falling had an impact on your life, and if so, how?
6. What do you believe the consequences of falling might be?
7. What does careful/cautious mean to you?
8. What does fearful mean to you?
9. How long have you lived at Cypress Glen?
10. What services do you use at Cypress Glen?
11. What are you involved in at Cypress Glen? The greater community?
12. Where were you living before?/Where are you from originally?
13. Tell me about your family.
14. What kind of physical activity do you do?
15. What health issues do you have?
16. What medications do you take?
17. What kind of mobility devices do you have? Other DME?
18. Other probing questions as subjects arise.

## APPENDIX D: Mini Mental State Exam

### MINI MENTAL STATE EXAMINATION

Client Name \_\_\_\_\_ Assessor \_\_\_\_\_ Date \_\_\_\_\_

Maximum Score	Score Achieved	Record client's answers in the spaces provided
		<b>ORIENTATION:</b>
5	( )	<b>Q1</b> What is the - Year _____ Season _____ Month _____ Day _____ Date _____
5	( )	<b>Q2</b> Where are we – Country _____ State _____ Town/City _____ Hospital/Street _____ Ward/House no. _____
		<b>REGISTRATION:</b>
3	( )	<b>Q3</b> Name these 3 objects - <b>apple, penny, table.</b> 1 second to say each. Then ask the person to repeat all three after you have said them. Score 1 point for each one correct on the first attempt. Repeat them (maximum 5 times) until he/she learns them. Count trials and record. Trials: _____
		<b>ATTENTION AND CALCULATION:</b>
5	( )	<b>Q4</b> Serial 7's: Count backwards from 100 by subtracting 7 ( <b>93 86 79 72 65</b> ) Score 1 point for each correct. (A correct response is one that is 7 less than the previous response even if the previous response is incorrect) Stop at 5 responses. <b>-OR-</b> Ask the person to spell the word "WORLD" forward and then backwards. Score 1 point for each letter in correct order. e.g. DLROW = 5, DLORW = 3
		<b>RECALL:</b>
3	( )	<b>Q5</b> Ask for the names of the three objects given to remember in Q3. Score 1 point for each correct answer irrespective of the order they are recalled in. <b>apple penny table</b>
		<b>LANGUAGE:</b>
2	( )	<b>Q6</b> Show the person a "PENCIL" and a "WATCH". Have the person name them as you point. Score 1 point for each correct answer.
1	( )	<b>Q7</b> Have the person repeat the phrase - "NO IFS, ANDS, OR BUTS". Score 1 point for a correct repetition.
3	( )	<b>Q8</b> Have the person follow a 3 stage command. Take the paper in your right/left hand. Fold it in half once with both hands. Put it on the floor. Score 1 point for each part correctly executed.
1	( )	<b>Q9</b> Read and obey the message. <b>CLOSE YOUR EYES</b> Score 1 point if the person closes their eyes. They do not have to read aloud.
1	( )	<b>Q10</b> Ask the person to write a sentence of his/her own choice. The sentence should contain a subject and an object and make sense. Ignore spelling errors.
1	( )	<b>Q11</b> Ask the person to copy the design. Score 1 point if all sides and angles are preserved and the intersecting sides form a quadrangle.
30	( )	<b>TOTAL SCORE</b>



References: 1. Derived from: Folstein MF, et al "Mini-Mental State": a practical method for grading the cognitive state of patients for the clinician, J Psychiatr Res 1975; 12:189. 2. Derived from: Cockrell JR et al Mini Mental State Examination (MMSE). Psychopharm Bull. 1988;24:689-692

## APPENDIX E: Directions for Poetry Activity

Haiku is a type of poetry that allows you to express yourself and your thoughts about the world. We have been talking about falling and the fear of falling. I'd like you to describe this, in your own words. Describe your feelings on falling and the fear of falling. Now, go back through what you've jotted down and pick the key words and phrases that really describe the essence of that experience. Arrange these words and phrases in a way that makes sense to you. Here's an example for you to follow.

I am afraid I **won't measure up** to **expectations**.

I am afraid of **failing**.

I **want to excel** in school, as I **usually do**.

This is my **last chance**.

If I don't do well at this, **what will I do?**

The more I **succeed**, the more afraid I am to keep going.

I cannot **sustain my effort**—I will **collapse** like a **burst balloon**.

I won't measure up,

My last chance to succeed will

Be a burst balloon.

A sustained effort

Fear takes over and I die,

Last chance like ashes.

## APPENDIX F: Mini Mental State Exam Results

P.B.:

Total: 28 pts.

Trouble: Day of the week, copying the design

Did not seem upset or worried about taking the test and did well

M.B.:

Total: 30 pts.

Trouble: none

Seemed somewhat irritated w/ the test, but did well w/ no hesitation

M.B.:

Total: 28 pts.

Trouble: Registration (couldn't remember apple), copying the design

Seemed a bit puzzled by the test, but did well

L.G.:

Total: 29 pts.

Trouble: Copying the design

Was irritated w/ the test, but easily answered the questions and was nice about it

C.A.:

Total: 28 pts.

Trouble: Attention (spelling World backwards), copying the design

Again, not sure about the need to take the test, but was cooperative

F.D.:

Total: 30 points

Trouble: none

Submitted to the test w/ good grace, did it easily

B.F.:

Total: 29 pts.

Trouble: Copying the design

Did not mind taking the test

J.H.:

Total: 29 pts.

Trouble: Copying the design

Was somewhat impatient about taking the test, but cooperated

C.E.:

Total: 28 pts.

Trouble: Orientation (season), copying the design  
Was hesitant while taking the test, but didn't have trouble, although was somewhat slow

D.G.:

Total: 29 pts.

Trouble: Recall (couldn't remember table)

Was cooperative and did the test well

B.B.:

Total: 30 pts.

Trouble: none

Did not mind taking the test and did very well

M.M.:

Total: 28 pts.

Trouble: Recall (couldn't remember apple), copying the design

Was very cooperative about the test and did well

M.T.:

Total: 25 pts.

Trouble: Orientation (couldn't say 2010), Attention: (spelled world backwards D-L-O-W),

Recall (could only remember apple)

Was cooperative about test, seemed sharper than test results would warrant

C.C.:

Total: 18 pts.

Trouble: Orientation (day, date), Where (wrong address), Attention (could only spell D-L),

Language (3 stage command—used both hands), Language (sentence didn't make sense),  
copying the design.

Since he has AD, test results were not surprising. Was hesitant on some things, fine on others

C.P.:

Total: 27 pts.

Trouble: Recall (could only remember penny), copying the design

Was very cooperative and did not hesitate

## APPENDIX G: Poetry activity

M.B. (II):

Getting hurt, getting disabled, breaking bones, passing out

I am afraid of falling and breaking a leg or shoulder.

This could cause me to not be able to look after myself and be independent.

M.B (I):

A near fall occurred using my garden hose. I watch the field back of my house when I walk. The field is very uneven. I'm more aware of falling as I age. When my granddogs come to visit I have to be aware as they love to be under my feet.

The field is uneven

Walk w/ care

Older now

Agile less.

L.G.:

Have no fear of falling

Never think about it

Just take life as it comes.

C.A.:

I'm 88 and think pretty straight

But the fear of falling doesn't enter my mind.

When I walk down steps I hang onto the rail

When I walk down halls, I walk near the railing.

I keep my eyes open and I try to stay alert

I'm very careful, I don't want to get hurt!

F.D.:

I hope I gave her what she wanted

I don't really have a fear of falling.

The Xmas time is here

Cypress Glen is a good home for me

I wish they would learn to cook beef.

B.F.:

Fear of Falling

Careful--

Using aids to keep me from falling

Aides will motivate you and get out



Balance in garden  
How do you obtain your goals w/ this fear?

J.H.:  
Get up and go is my daily task  
Each day is a new beginning  
and thankful when the day is successful

C.E.:  
Will someone ever come to help me?  
The pain is so terrific!  
Will it ever go away?  
O.K., I'm still here, Lord  
It finally went away!

D.G.:  
A stitch in time saves nine  
It's better to be safe than sorry  
Never stand on top of a stepladder  
Handle equipment, electrical, etc. safely  
because it can hurt you

B.B.:  
I won't measure up to poetry  
I often feel like a burst balloon  
Just as if I were  
A sustained effort will always get you there  
Fear takes over and I die—never will I think like this  
The years are fading, but each moment I will treasure.

M.M.:  
I'm not really afraid of falling  
I just want to be independent  
Like driving, playing, and having fun  
And living at Cypress Glen in the long run.

M.T.:  
Caution: don't fear falling—but I guess I make a real effort to have some support handy—I wish  
I could think more clearly at times. I don't enjoy being confused rather like being in control

C.P.:  
Please Chip be careful not fall  
Break a bone

Think about where you are going  
Can I get up from this chair  
Ask for someone to assist you

Am I afraid of falling  
It's always on my mind  
Wish I was sure of thinking  
Of many thoughts of another kind  
Perhaps someday w/ lots help  
I'll be very happy in this of land of mine

