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Perspective Discrepancy Analysis of Health Care Provider and Well-Elderly Regarding Environmental Fall Risk Factors

by

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Thesis

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PERSPECTIVE DISCREPANCY ANALYSIS OF HEALTH CARE PROVIDER AND WELL-ELDERLY REGARDING ENVIRONMENTAL FALL RISK FACTORS

ABSTRACT

The purpose of this study was to discover the discrepancies in perspectives regarding environmental hazards in the home between the well-elderly and health care professionals.

Interviews, discussion groups, and review of a videotape were used to gather information. The interviews and videotapes were used to gain the health care professional's perspectives and the discussion groups were used to gather the elderly's perspectives.

This qualitative study found both similarities and discrepancies between the well-elderly and physicians. The major discrepancies were: 1) that the elderly and health care professionals are not entirely aware of environmental factors contributed to falls, 2) the physicians state that it is their role to do education of fall prevention and the physicians freely admit that they are not doing it, 3) health care professionals are not consistently addressing fall prevention with the elderly, and 4) the elderly have a fear of falling that is not recognized by the physicians.
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CHAPTER 1
INTRODUCTION

Background

Society accepts falls by elderly as an anticipated and unavoidable part of aging. A fall is defined as an event in which a conscious subject inadvertently comes to rest on the ground. Health care professionals must understand and teach their patients and families that there is no such thing as a normal fall (Wolf-Klein, 1988). Falls should not be accepted as a normal part of aging. (Lewis, 1996). Rather, a fall should indicate a pathologic process or an environmental hazard.

Today, approximately 12% of the population is 65 years of age or older (Kay & Tideiksaar, 1990). By the year 2020, as much as 30% of the population could be 65 years of age or older (Lewis, 1996). Approximately one-half of all community-dwelling and institutionalized adults in this age group fall each year (Campbell, Borrie, & Spears, 1989). Falls are the largest single cause of death due to injury in the elderly (Kay & Tideiksaar, 1990). As the number of adults aged 65 years or older increases, the number of falls reported in this age group should also be expected to increase unless preventative measures are taken.

The high cost of falls is of major concern in the health care industry today. "Falls are a major health and socioeconomic problem with a cost of $6 billion per year" (Barclay, 1988, p. 241). Hip fractures are the most commonly treated injury due to falls and cost approximately two billion dollars to treat each year (Apple & Hayes, 1993; Wolf-Klein & Pascaru, 1988).

In addition to injuries, falls can have a serious impact on physical functioning and quality of life. Loss of function can be a direct result of fractures and soft tissue damage. 
falls which can lead to immobility. This immobility can lead to a downward spiral of physical function leading to dysfunction. Indirectly, physical function can be impaired due to a fear of falling. This fear of falling can discourage the well-elderly from participating in activities that promote mobility. "Decreased confidence in the ability to ambulate safely can lead to further functional decline, depression, feelings of helplessness, and social isolation" (Josephson, Fabacher, & Rubenstein, 1991; Rubenstein, Josephson, & Robbins, 1994).

Due to factors such as retirement, the elderly tend to spend more time at home than younger adults. Falls tend to occur where people spend the most time and the home is where many of the elderly spend the majority of their time. Therefore, many of the falls that occur in the elderly population occur in their home environment. This is supported by Tideiksaar (1986) who states, "home accidents may be the most frequent cause of falls in the elderly - and the most preventable" (p. 26). Hence, home oriented prevention strategies may be most effective in reducing fall rates in older persons (Rubenstein et al., 1988).

Most researchers who have done studies on falls in the elderly acknowledge that both intrinsic factors and extrinsic factors contribute to falls in the home. Intrinsic factors include age-related physiologic changes and pathologic disease processes, as well as drug toxicity and psychological factors that predispose one to falls. Extrinsic factors refer to environmental hazards, such as slippery floors and poorly lighted stairs, that increase one's chance of falling. An effective fall prevention program involves both patient and caregiver education that addresses both intrinsic and extrinsic factors (Wolf-Klein & Pascaru, 1988). Information which increases awareness of environmental hazards is essential for well-elderly compliance with physician and health care recommendations on reducing hazards in the home. If the elderly do not understand the danger of
environmental hazards and do not recognize the potential for falling in their home they may be reluctant to make any home modifications the health care professional suggests.

Isaacs (1985) found that unless the patient perceives his/her home or situation as "hazardous" and agrees with the physician's recommendations to alter the home, the environment will not be effectively modified. Gosselin, Robitaille, Trickey, & Maltais (1993) speculated that in addition to objective factors (disabilities, income level, need for assistance), subjective factors (values, beliefs) also played a part in the decision to modify one's home. The elderly must recognize it is their responsibility to be active participants in preventing falls. The elderly must also see a need to modify their home so they may engage in the recommendations presented by the health care professional. It is the health care professional's responsibility to empower the elderly so they will be more likely to comply or follow-through with the suggestions given to make home modifications aimed at preventing falls.

Problem Statement

The problem is that few studies have been done to address the perceptions of elderly individuals regarding their home environment and its hazards.

Purpose of Study

The purpose of this study was to discover the individual perceptions of two populations, well-elderly (which we define as those individuals who function independently in the community and who do not require assistance for ambulation or activities of daily living) and health care professionals, regarding environmental hazards. We did a qualitative study using an interview to gather information on these two different perceptions of home hazards.
Significance

Elderly perceptions of home hazards is a key component to compliance and prevention of falls. Since the portion of the population older than 65 years of age is increasing, it is important that we develop the most effective way to prevent falls in the well-elderly. In the future this study will be important to the contribution of the prevention of falls, improvement of the elderly's quality of life, the decrease of health care costs, and promotion of the feelings of successful aging. It may also have significance in terms of helping caregivers/health care delivery professionals understand factors related to compliance, and may stimulate the development or rethinking of new approaches to this problem.
CHAPTER 2
LITERATURE REVIEW

Falls

The elderly population, consisting of those over the age of 65, continues to be the largest growing age group in the United States. There are more Americans over 65 than under 25 years of age, and the average age continues to increase (Kay & Tideiksaar, 1990). According to Kay and Tideiksaar (1990), the elderly make up twelve percent of the population and utilize 30% of all health care resources. These figures are projected to reach over 20% and 50%, respectively, by the year 2030. These authors further report that there has been a substantial increase in the number of elderly living independently. This trend is also expected to continue. By 2020, the projected percent increase in the number of elderly living alone will be +7.7 for those 65-74 years of age, +5.2 for 75-84 years, and +2.3 for anyone over 85 years old. This is an important finding since 35 to 40% of falls occur in the community-dwelling elderly population (Kay & Tideiksaar, 1990; Lipsitz, 1993).

Kay and Tideiksaar (1990) state that a 35 to 40% estimate of falls which occur in the elderly is conservative since most falls remain unreported unless they result in physical injury and require medical attention, or there is change noted in the elderly’s functional status. The elderly believe that falls occur due to increased frailty and that it is a normal part of the aging process (Wolf-Klein, 1988). The elderly are often socialized into thinking this is true because either they know someone who has fallen or they have fallen themselves without ever knowing the cause of the fall and therefore accept the cause as being related to “old age.” However, Lewis (1996) states the opposite of this, that falling is not a normal part of the aging process, but rather falling may be indicative of some kind of pathology or due to environmental hazards.
Falls are a common reason for morbidity and mortality in the elderly. Accidental injury is the sixth leading cause of death in people over the age of 75, and falls represent the single most common cause of accidental mortality (Kay & Tideiksaar, 1990). Although the majority of falls do not result in death, falling is associated with high morbidity (Kay & Tideiksaar, 1990), meaning the development of disease or disability. The most common fall-related injury is a hip fracture. Approximately 200,000 hip fractures occur each year with 84% of these in individuals 65 years of age and older. Approximately 40% of falls that occur in females over the age of 75 result in a hip fracture, as compared to 27% in males of the same age. Twenty-five percent of hip fracture patients die within six months of the injury. Of the remaining 75% of these patients, 47% become long term care patients. Approximately 60% of hip fracture patients have decreased mobility and 25% become more functionally dependent. Because of the large number of hip fractures, the acute medical care for hip fractures account for between one and two billion dollars each year (Kay & Tideiksaar, 1990). Due to the decrease in mobility and increased dependence after a hip fracture, the overall cost for hip fractures is great.

Minor injuries that result from falls that are improperly managed may become major problems later. These minor injuries may require hospital treatment and result in a greater amount of morbidity and mortality. Those who experience a minor injury from a fall have a greater difficulty ambulating independently and are more likely to fall again (Kay & Tideiksaar, 1990).

Falls have been reported to occur most frequently at certain hours of the day. Wild, Nayak, & Isaacs (1981) did a study that found most falls occurred during the day, with only a few occurring between midnight and 8 A.M. In another study done by Colling and Park (1983), more falls occurred at 10 A.M. and at 8 P.M. Colling and Park
speculated that these are the hours when people are most likely to be feeding, bathing, toileting, and doing activities before going to bed. It is during these activities that the elderly frequently have to change position, which challenges their postural control and increases the potential for a fall. Overstall, Exton-Smith, Imms, and Johnson (1977) has suggested that postural control decreases with age and has been associated with increased risk of falling. A decline in postural control with age may be related to the decline in the musculoskeletal system, the neuromuscular system and often the sensory systems. The elderly body often experiences a decrease in strength and range of motion, especially in the spine. This can lead to the characteristic flexed or stooped posture. The change in postural alignment tends to shift the vertical center of mass backwards towards the heels. Because of the decrease in muscle strength, the decline in vision, the poor vestibular responses, and the increased postural sway, the elderly often cannot compensate to return their center of mass forward over their base of support (Shumway & Woollacott, 1995). Therefore, during activities of feeding, bathing, toileting, and other pre-bedtime activities, the elderly are more likely to experience a fall because of the increased demands placed on their already compromised postural stability.

Two studies found that the rate of falls was higher in females than in males (Ryynanen, Kivela, Honkanen, and Laippala, 1991; Sjorgen & Bjornstig, 1991). The Ryynanen study also showed that falls were more likely to occur in unmarried, widowed, or divorced persons than in married ones; less educated persons than better educated ones; and in those having limited physical activity and poor self-perceived health than those with moderate physical activity or good health status.

**Extrinsic and Intrinsic Factors**

A falling episode is a marker of homeostatic dysfunction and the result of an interaction of intrinsic and extrinsic factors. Intrinsic factors include age-related
physiologic changes and pathologic disease processes, as well as drug toxicity and psychological factors. Extrinsic factors are environmental obstacles, such as slippery floors and poorly lighted stairs (Tideiksaar & Kay, 1986). A complex interaction of many factors, some related to disease, some to medication and others to the environment in which the elderly lives, is a more common precursor to falls in the elderly, than a single, clearly identified cause (Hindmarsh & Estes, 1989). However, it is important to independently identify both intrinsic and extrinsic factors and how they contribute to falls in the elderly. This is important so that health care professionals can gain a better understanding of how each are related as risk factors in falls.

Tideiksaar & Kay (1986), through experience and extensive research in the field of geriatrics, have developed an outline and clear descriptors of intrinsic and extrinsic factors which will be delineated in this section of the literature review.

**Intrinsic Factors**

**Vision Decline**

Decline in visual function is one of the most significant normal physiologic changes that place the older person at risk for falling (Campbell, Reinken, Allan, & Martinez, 1981; Hindmarsh & Estes, 1989; Kalymun, 1989; Tideiksaar & Kay, 1986; Tinetti, Speechley, & Ginter, 1988). With age, pupil size and the ability of the eye to respond to darkness diminishes. Hence, the ability of the pupil to accommodate to light puts the older person at risk for falling at night. As a result, the elderly require adequate environmental illumination to accomplish safe ambulation. Additionally, with increased age, the lens of the eye becomes more opaque. This opaqueness in the lens leads to glare intolerance and to reduced depth perception. A fall can result from excessive glare caused by direct light radiating off of a highly waxed floor or from the glare produced by
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a brightly lit room. Reduced depth perception can lead to falls while going up and down stairs (Kaylmun, 1989).

**Postural Instability and Gait Changes**

A change in posture is associated with aging. A forward head, rounded shoulders, and a kyphotic thoracic spine are often common changes seen with increasing age. These postural changes often create a change in the center of gravity which in turn increases body sway. Increase in body sway and less efficient righting reflexes, which occur normally with aging after the sixth decade, cause postural instability (Murry, Seireg, & Sepic, 1975). Postural stability is defined as the ability to maintain the position of the body, specifically the center of mass, within specific boundaries of space, referred to as the "cone of stability" (Montgomery & Connolly, 1991). These changes in postural stability contribute to falls (Campbell et al, 1989; Hindmarsh & Estes, 1989; Tinetti et al, 1988). These changes in postural stability, as mentioned previously, contribute to falls. A fall results when there is a discrepancy between perceived and actual limits of cone of stability. Consequently, an older person who often experiences these discrepancies, may be more likely to trip or slip resulting in a fall.

Gait patterns also can change with age. Common age associated changes are a decrease in steppage height, large sway path, decreased stride length, and an overall decrease in gait speed (Hindmarsh & Estes, 1989; Isaacs, 1985; Rubenstein et al, 1994; Tideiksaar & Kay, 1986; Tinetti et al, 1988). These gait changes may displace the individual's center of gravity out of his base of support which again can precipitate a fall. A combination of gait changes and errors in the elderly’s environmental perception, slowing of responses, and weakness of support predispose elderly to falls (Wild, Nayak, & Isaacs, 1981).
There are other age related changes that may effect or change the gait pattern. These age related changes include altered position and vibration senses that can lead to inappropriate or insufficient kinesthetic feedback during gait. These changes that occur in the senses of position and vibration tend to increase the elderly’s reaction time. Reaction time is the length of time between perceiving a danger and taking action to avoid a fall. This increase in reaction time and the inappropriate kinesthetic feedback leads to the elderly’s inability to compensate quickly enough to prevent a trip or fall (Tideiksaar, 1986).

**Muscular Changes**

Muscle weakness is a normal age associated change commonly found among the elderly population. Studies have reported the prevalence of lower extremity weakness to range from 48% decrease in strength among older persons living in the community (Campbell et al, 1989) to 57% decrease in strength among residents of an intermediate care facility (Tinetti et al, 1986). Rubenstein et al (1994) stated in their review of seventeen studies done at nursing homes, that gait and balance impairments along with proximal lower extremity muscle weakness are the most important immediate causes and the most serious risk factors for falls.

**Psychological Changes**

Lastly, according to Tideiksaar and Kay (1986), intrinsic factors include psychological components. Many falls occur during periods of transient emotional stress. Preoccupation with illness, declining vision, and admission to a hospital or nursing home are common reasons for emotional upheaval. As a result, older patients suffer feelings of anger, anxiety, disorientation or depression and become less alert to environmental hazards which can lead to falls.
Pathological Changes

Intrinsic factors are not only physiological, they can also be pathological. An example of a pathological intrinsic factor would be orthostatic hypotension, which is a 20 millimeter of mercury decrease in systolic blood pressure or a 10 millimeter of mercury decrease in diastolic blood pressure. Orthostatic hypotension has been correlated with increased risk of falling among the elderly population (Campbell, 1989; Hindmarsh & Estes, 1989; Tideiksaar, 1986; Tinetti et al, 1988). The elderly may have some postural hypotension as part of normal aging, resulting from decreased baroreceptor sensitivity and vascular rigidity (Tideiksaar, 1986). Orthostatic hypotension could also be caused by dehydration, hemorrhage, and sodium loss which causes changes in blood volume. In addition, drug treatment in the elderly frequently leads to orthostatic hypotension. Campbell et al. (1989) states “psychotropic drugs and hypotensive drugs are likely to be direct contributors to fall” (p. m116). Tinetti et al (1988) found that benozodiazepines, phenothiazine, and antidepressants were associated with falling independently of any other risk factors. Antihypertensive drugs, diuretics, tricyclic antidepressants, phenothiazines and alcohol have a significant effect on blood pressure and should always be suspect in patients experiencing postural hypotension (Tideiksaar & Kay, 1986).

Other pathological intrinsic processes that have been associated with falls include disorders of vagal response, arrhythmias, extracranial artery disease, seizure disorders, dementia, and Parkinson’s disease. Other pathological intrinsic components related to falls include the variety of neuromuscular and arthritic changes that impair the gait of elderly patients and increase their risk of falling. Proximal muscle weakness secondary to hypocalemia, osteomalacia, polymyalgia rheumatica, and osteoarthritis of hip and knee joint contributes to a slow cautious, unsteady gait with waddling, and difficulty climbing stairs (Tideiksaar & Kay, 1986). Tinetti, Williams, and Mayewski (1986) found that
abnormalities in gait, due to pathological muscle weakness, were good predictors of recurrent falling. The pathological changes in muscle created difficulty with rising and sitting down, instability on first standing, staggering on turning, and short discontinuous steps that were common among fallers.

**Extrinsic Factors**

Approximately one third of the community dwelling elderly aged 65 years of age or older fall each year (Campbell et al, 1989; Josephson et al, 1991). Environmental factors are implicated in one third to one half of falls in the community-dwelling elderly each year (Sjorgen & Bjornstig, 1991; Rubeinstein et al, 1988). Falls are the most frequent type of accident among the elderly regardless of living arrangement and the most preventable (Tideiksaar, 1986). A two year prospective study reported that 72% of participants who were experiencing multiple falls at home fell less often after the home environment was modified (Kay & Tideiksaar, 1990). Therefore, the most frequently preventable cause of falls may be the environment and the most rapidly modified (Tideiksaar, 1986).

In the home, the staircase appears to be one of the most common site of falls (Sjorgen & Bjornstig, 1991; Hindmarsh & Estes, 1989; Tideiksaar, 1986). Most falls are due to missing the last step in the mistaken belief that the bottom step has been reached (Sjorgen & Bjornstig, 1991). Poor vision contributes to falls on the stairs, frequently as a result of inadequate illumination, particularly at the top and bottom of the steps. Missing handrails and improper length of handrails are also considered to be hazards when ascending or descending stairs and may also contribute to falls (Tideiksaar, 1986). A slippery stair surface and unmarked stair edges are often unsafe for the elderly due to their decline in balance and depth perception.
Throughout the home, throw rugs are another one of the more common hazards leading to trips and slips (Sjorgen & Bjornstig, 1991; Josephson et al, 1991; Northridge, Nevitt, Kelsey, & Link, 1995). Throw rugs tend to bunch up, leaving an elevated surface and an obstacle over which the elderly are likely to fall. Even wall-to-wall carpets pose a fall hazard when they are torn or become unattached at the threshold between entry ways. Raised thresholds between rooms can be another source of trips or falls, especially for patients using walkers for ambulation (Josephson et al, 1991). Floors that are wet or waxed also pose an environmental risk for the elderly since they are more likely to slip and fall on a surface that decreases traction or surety of footing (Tideiksaar, 1986).

Throughout the home, rooms that are poorly lit (those with less than two light sources) will threaten the older person and increase his/her chance of falling due to the decrease in visual acuity. On the other hand, rooms that have too much direct light create a glare off reflective surfaces and can also increase risk of falling among the elderly. Rooms with light switches that are inaccessible have also been shown to cause falls if the elderly have to walk across a darkened room to get to the switch (Tideiksaar, 1986).

Clutter in the home environment also contributes to increased risk of falls (Northridge et al., 1995). Clutter can be defined as anything that may obstruct a pathway. Clutter has been demonstrated to impair mobility of the elderly.

Each room in the house has specific characteristics that may predispose the elderly to falls. In the kitchen, the contents in cabinets or shelves may be too high, forcing the elderly individual to reach beyond his/her cone of stability, thereby precipitating a fall. The chairs in the kitchen may not be of appropriate height or may have casters contributing to a fall. Chairs lacking armrests make getting up from the chair more difficult, creating greater likelihood that elderly persons with proximal muscle weakness will lose their balance and possibly fall. Unstable, wobbly tables that are likely
falls to tip also contribute to falls since many elderly use tables for support during ambulation (Tideiksaar, 1986).

The bathroom adds other risk factors that should be noted. Slippery bath tub floors can cause falls, primarily when getting in and out of the tub. Towel racks and sink tops that are used for support while transferring from a low toilet seat are often unstable and again can contribute to falls. As mentioned previously, a medicine cabinet that is too high demands the elderly to reach beyond their cone of stability and possibly fall while reaching (Scanameo & Fillit, 1995; Tideiksaar, 1986).

Both the bedroom and the living room can have similar environmental hazards: poor lighting, light switches that are inaccessible, furniture that is too low or that does not have arm rests, rug/carpetss that are not anchored, and unnecessary clutter (Northridge et al., 1995; Scanameo & Fillit, 1995; Tideiksaar, 1986).

Although not usually considered part of the home environment, footwear can also be hazardous. Ill-fitting shoes, shoes with worn heels, and heels that are too high or too narrow, and shoes that are too tight or are left untied or unbuckled are unsafe. Slippers without soles or backs are also hazardous (Josephson et al, 1991). Studies done in the past have frequently found that ill-fitting footwear to be the cause of slips and trips resulting in falls among the community-dwelling elderly (Jech, 1992 ; Josephson et al, 1991; Tideiksaar, 1986).

Clearly, there are many factors that may contribute to a fall. The literature has identified these factors as intrinsic and/or extrinsic factors. Being able to identify the risk factors that predispose the elderly to fall is an important step in the prevention of falls. However, if the elderly do not identify these same risk factors as hazardous they may not make an attempt to comply to the preventative recommendations made by health care
professionals. Therefore, compliance is another important component in the prevention of falls and will be discussed in the next section.

**Compliance**

Current and future health care workers are playing an increasingly important role in the prevention of falls in the community-dwelling elderly. Environmental modification is one way to prevent falls in homes of the community dwelling well-elderly. Preventing falls in the home involves education to ensure that the well-elderly have an accurate perception of environmental issues that predispose them to fall in their homes. Unfortunately, when the recommended health care intervention is preventative, and/or the persons are without symptoms, and/or the regimen is long-term, only about one half of the patients’ are compliant (Sackett, 1976).

Compliance may be the most significant obstacle health care practitioners face today. Patient compliance is never guaranteed and can often predict the success or failure of a treatment regimen. Hence, patient compliance and lack of it has received widespread attention in the past and continues to be a major concern of all health care practitioners (Matthews and Hingson, 1977). Difficulty in distinguishing compliant patients from noncompliant patients can pose a serious obstacle to the delivery of quality health care (Matthews and Hingson, 1977). This is secondary to non-compliant patients not having readily observable characteristics that mark themselves as non-compliant (Caron and Roth, 1968).

Most of the studies we found pertaining to patient compliance were conducted in the 1960’s and 1970’s. The literature is extensive and covers many aspects of compliance issues. We chose to focus the aspects of patient compliance we felt were most relevant to our study. The literature review will be divided into two main portions: characteristics that do not predict patient compliance and characteristics that do predict
patient compliance followed by a discussion on actions that can increase patient compliance.

**Characteristics that do not Predict Compliance**

Matthews and Hingson (1977) reviewed several articles that looked at factors that attempt to distinguish compliant patients from non-compliant patients. Although the articles assessed different forms of compliance in each study such as medication recommendations, exercise recommendations, safety recommendations, et cetera.; collectively they generated some common themes. First, compliance was not related to severity of disability/disease state. While most people would think that people with more severe problems would be more motivated to comply with recommendations, such disorders often require more complex and difficult regimens. Persons with severe disorders may have difficulty with compliance secondary to limitations inherent in their disability, or they may be discouraged by the ineffectiveness of past efforts for stopping or slowing the disease process.

Second, the studies reviewed showed that the patient’s demographics did not consistently predict compliance. The inability of health professionals to distinguish compliant patients from noncompliant patients confirms the hypothesis of the inability for demographics to predict compliance (Haynes, 1976). Although many articles disagree, studies which report no relationship between demographics and compliance outnumber studies that support demographics and compliance 3:1 (Haynes, 1976). The clinical significance of this is that noncompliance can be a problem in any population regardless of age, social class, or ethnic background (Matthews and Hingson, 1977).

Third, there have been several studies that show even when a patient has knowledge of his illness and has an understanding of how to follow a regimen aimed at controlling the illness, these measures are not always sufficient to ensure compliance
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(Matthews and Hingson, 1977). For example, a study by Sackett et al. (1975), examining the relationship between increased knowledge and compliance, revealed that the subjects who received intense instruction showed equal compliance rates to the subjects who received no instruction. Clinically, this brings up questions regarding the value of patient education.

**Characteristics that do Predict Compliance**

According to Matthews and Hingson (1977), factors that are more predictive of patient compliance are: 1) the beliefs patients hold about their illness and treatment, 2) the complexity of nature of the regimen, 3) and the doctor-patient relationship. The literature in these three areas of health care will be included in the proceeding section.

Before these issues are presented, a brief summary of the health belief model will be discussed. The health belief model is a tool that was designed in the 1950’s to explain preventative health behaviors. Becker applied the health belief model specifically to patient compliance issues in 1985 (Jones, Jones, and Katz; 1989). Regarding compliance, the health belief model addresses 5 main elements: 1) *health motivation*: an individual’s level of concern about health matters, 2) *susceptibility*: perceived vulnerability to a particular illness, 3) *severity*: perceptions concerning the consequences of the illness or of leaving it untreated, 4) *benefits and costs*: individual’s perception of ability to prevent problems and/or if the preventative measures are worth the effort, and 5) *cue to action*: something internal (i.e. symptoms of decreased balance) arises or external such as doctor educating patient about risk of falls in the home (Cohen, 1979). In each instance the model’s elements reflect the patient’s subjective perceptions of the situation, not objective measurements (Cohen, 1979). The health belief model suggests these five variables are the main influences on patient compliance. Hence, using the health belief model as a tool to gather information from the patient, the health care worker can
generate a compliance oriented history in order to predict to what degree a patient is at risk for poor compliance and to facilitate a better health care worker-patient relationship (Matthews and Hingson, 1977).

**Patient beliefs about illness and treatment**

Regarding patient beliefs about their illness and prescribed treatment, Eraker et al. (1984) state that various studies have shown that there is an unclear relationship between patient knowledge of *his disease* and therapeutic compliance. These authors also state that a patient must have both knowledge of and understand the *recommendations* to achieve compliance. Lawrence W. Green (1979) outlined several strategies to enhance patient compliance when educating the patient. The suggestions are common to many teaching theories and include the following: 1) education should be presented in several different ways, 2) instructions should be specific, 3) information should be summarized and clearly organized, 4) essential information should be presented first and emphasized, and 5) the fewer the instructions given the greater the proportion remembered.

Another way to increase compliance through education is to increase the number of people involved in the teaching and learning process (Eraker et al., 1984; Matthews and Hingson, 1977). It is unusual for a patient to rely on his physician as the sole source of health information (Matthews and Hingson, 1977). Other health care professionals such as nurses can provide insurance, clarification, and reinforcement (Eraker et al., 1977). Outside help such as family members can enhance supervision as well as assist and encourage patient compliance (Eraker et al., 1977; Matthews and Hingson, 1977).

There have been several studies specifically targeted at increasing compliance with education among the elderly (Devor et al., 1994; Ploeg et al., 1994). The study by Ploeg et al. (1994) looked at education regarding recommended environmental modifications in the home versus education regarding the benefits of influenza
vaccination. This study explored two of Bandura’s principals regarding anticipatory aspects of behavior and self efficacy. According to Bandura (1977), anticipatory aspects can increase the likelihood that a certain behavior will occur due to reinforcement. Self efficacy with respect to efficacy expectations as defined by Bandura is “the conviction that one can successfully execute the behavior required to produce the outcomes” (Bandura, 1977, p. 79). The study used a safety promotion strategy designed to modify both self efficacy and expectation by helping seniors expect they could take measures to decrease their risk of falling. Both the home safety promotion group and the control group made safety changes in the home with slightly more changes made in the home environmental safety group (21% versus 18%). The researchers acknowledged that many restrictions limited the validity and reliability of the results, but still emphasized that a broad range of preventative care methods needs to be used with the elderly to prevent falls (Ploeg et al., 1994).

The indirect effects of patient education may be the reason education is successful in elevating patient compliance. Haynes (1976) states that the motivational content of health messages may be effective by themselves. He also believes that the increased attention the patient receives during the educational process may increase compliance. Some refer to this as the “attention placebo”. This may be especially effective in the elderly population who do not always have enough social interaction.

**Nature or complexity of regimen**

Regarding the first factor correlated with patient compliance, Haynes (1976) reviewed 15 studies that analyzed the effects of therapeutic complexity on compliance. This review revealed that 11 of the 15 studies analyzed showed a decline in compliance with increasingly complex regimens. Hence, one effort to maximize patient compliance involves keeping the treatment regimen simple with few steps for the patient to
Other teaching methods such as discussing the purpose and function of the treatment, repeating key parts of instruction, and providing clearly written instructions also have been shown to increase compliance (Eraker, Kirscht, & Becker, 1984; Clinite & Kabat, 1976).

Unlike medical regimens that show compliance decreases as the duration of treatment increases over time, Devor, Wang, Renvall, Feigal, and Ramsdell's study (1994) on social and recommendations shows that psychosocial and behavioral compliance can increase over time. Prolonged compliance supports the usefulness of educating patients about their home environmental safety issues. Few other studies have been done on behavioral recommendations (Devor et al., 1994). Hence, the need to do further studies on psychosocial and behavioral recommendations is indicated.

A study by Devor et al. (1994), found that the lowest rate of compliance was observed in the group that received recommendations to change their living situation. Measures that require personal or financial sacrifice that disrupt well-established habits or a family unit will not be followed unless the benefits outweigh the sacrifice (Becker and Maiman, 1975). The inability to afford to replace hazardous environmental factors or to implement new environmental aids also contributes to noncompliance with home safety recommendations (Devor et al., 1994). Hence, attempting to keep the personal and financial cost minimal when suggesting environmental modifications will foster the highest compliance.

With respect to the home environment, it may be unacceptable to an elderly person who often has sentimental attachments to his possessions to remove such unsafe items as throw rugs (Devor et al., 1994). Haynes (1976) reviewed several studies that analyzed the degree of behavioral change a therapeutic regimen requires of the patient. He concluded that passive cooperation such as that received by therapies delivered in the
hospital are the easiest to attain. Conversely, active cooperation, especially if it includes complying with a specific regimen involves acquiring new habits or altering old behaviors, is less easily achieved. Patients who perceive high financial and emotional costs associated with a treatment plan while anticipating little benefit are at risk for noncompliance (Devor et al., 1994). One study which looked at safety issues in the home demonstrated that noncompliance was most often due to disagreement between the elderly client and health care worker over environmental recommendations. Among those that disagreed with the recommendations, 61.2% denied the need for recommended changes and 25% felt the recommended changes were no longer needed because the problem was resolved (Devor et al., 1994).

Many studies have shown that noncompliance with home safety recommendations was primarily due to the patient disagreeing with the need for a recommendation (Devor et al., 1994). Hence, the health care worker suggesting the recommendations needs to educate the patient in order to increase patient compliance. Patients must have knowledge of and understand the need for recommendations in order to carry out these environmental recommendations (Eraker et al., 1984).

Physician-patient interaction

Physician-patient interaction is the last main issue our literature review explored regarding factors associated with increased compliance (Eraker et al., 1984; Matthews and Hingson, 1977; Sackett, 1976). Generally, there is a positive correlation between patient satisfaction and compliance. Many factors have been associated with undermining the doctor-patient relationship. Some of the factors include: 1) if the doctor underestimates the patient's knowledge, 2) if the physician seeks information and does not provide feedback as to why information is being gathered (Davis, 1968), 3) if the
A good relationship between the health care worker and the patient can determine the success of a recommended therapeutic regime. Francis et al. (1969) conducted a study that reported a mother's compliance in following a regimen prescribed for her child is better when she is satisfied with the initial contact with the physician, perceives the physician as friendly, and feels the doctor understands the complaint. With respect to environmental modifications, this suggests that the health care worker making home safety recommendations must establish a good rapport with the patient if he wants to optimize compliance. Providing the community-dwelling elderly with the correct environmental hazard information may not be enough to persuade them to modify their homes.

Other studies examining the doctor-patient relationship emphasize the importance of physician continuity. This is a behavioral intervention which involves repeated contact between the patient and the health care worker. This can include at home visits, surveys, or even phone calls to assess a patient's status and/or level of understanding (Haynes, 1976). Therefore, to increase the application of home safety recommendations the health care worker may increase compliance by periodically calling or visiting elderly clients at home to assess the home environment. This should result in the prevention of falls of the community-dwelling elderly in the home.

Summary

Our literature review was designed to give a background on why we felt our research is needed and to give a clear picture of the issues surrounding falls in the elderly. The literature showed that the elderly are a growing population who have multiple problems. This morbidity leads to an increase in health care spending. Perhaps most
importantly, this morbidity has a negative impact on the elderly’s quality of life. The demographics of falls in the elderly are vast, but some patterns and theories have been established with this research. Perhaps the most important idea generated from all of the demographic research states that falls in the elderly are not caused by a single factor, rather falls are an interaction of both intrinsic and extrinsic factors. Both should be addressed to devise the most effective fall prevention program.

Clinically, addressing both the intrinsic and extrinsic factors influencing falls has implications for the entire health care field providing services to the elderly. Despite the importance of addressing intrinsic factors, it is important to note that extrinsic factors such as home environment modification may be the easiest, quickest, and most cost effective way to prevent falls in the elderly. Lack of home environment modifications are a significant contributor to falls among the community-dwelling elderly (Sjorgen & Bjornstig, 1991). Home modifications ideally should be made before a fall occurs. In the past and currently, it is often the physician who comes into contact with the elderly patient before a fall has occurred due to yearly check-ups and non-fall related illness visits. Due to time constraints, physicians may not get to spend as much time on fall prevention as their patients’ need. Hence, the question of how physicians can better address fall prevention or perhaps who else can provide adequate fall prevention information arises. As health care reform continues to evolve physical therapists may be able to play a larger role in preventative care, including fall prevention of the well-elderly.

For any health care worker to engage their patients in the home modification process, there must be a healthy health care worker-patient relationship. This relationship needs mutual respect among all involved parties: health care worker(s), patient, and if present other caregivers. This mutual respect can foster patient engagement which means
that the patient is an active participant in the home modification process. As studies have suggested, patient agreement with the recommendations is necessary to elicit the highest degree of compliance. Preventative home modification via patient education of the elderly seems like a realistic and very effective measure to prevent falls in the homes of the well-elderly.

This review of literature supports the idea that falls are multi-dimensional. Although current studies dispute whether intrinsic or extrinsic factors contribute more to falls among the elderly population, all agree that both factors interact and are responsible for falls. Extrinsic factors have been shown to be easily modified and relatively cost effective in reducing the number of falls among the elderly. Compliance with home modification recommendations has been linked to good health care worker and patient relationship, financial costs, and if the elderly understand and agree with the recommendations.
CHAPTER 3

METHODOLOGY

Study Design and Rationale

This is an ethnographic study which is a type of qualitative research design that is descriptive in nature. This ethnographic study attempted to uncover and document well-elderly’s and physician’s perspectives on environmental hazards in the homes of the well-elderly (Marshall & Rossman, 1989). An ethnographic study is a way of collecting, describing, and analyzing the ways in which people categorize the meaning of their world. It looks at what knowledge people use to interpret experience and mold their behavior within the context of their culturally constituted environment (Morse, 1991).

This study examined the different perspectives of the elderly and health care professional’s perception of factors in the home that predispose the elderly to falls. Three practicing family physicians were interviewed for their perspectives on factors in the home that predispose the elderly to falls. Then three elderly’s homes in the community were videotaped, with a focus on environmental characteristics of the house. The videotape was viewed by a geriatric specialist and the researchers to identify common environmental hazards as identified in the literature. The physician interview along with the analysis of the videotape served as the health care professional’s perspective. Finally focus groups of five to six community-dwelling elderly individuals were created to address discussion topics. The focus group discussion topics were derived from the physician interviews and home videotapes discussion. The selection of the focus group participants were from the West Michigan area and represent a criterion-based sample of convenience.

Perspective discrepancy assessment (PDA) is the methodological approach that was selected because it allows the researchers to identify discrepancies in perceptions and
falls

expectations between the well-elderly and health care professionals (Burke, 1986). Thus PDA assisted in providing an understanding of what measures health care professionals are taking to prevent falls in the elderly. PDA also assisted in identifying measures taken by health care professionals and the elderly to prevent falls among the elderly at home. It is hoped that this study will also make health care professionals aware of measures needed to facilitate follow-through with suggestions made to elderly in regards to modification of their home.

Qualitative research was chosen due to the nature of our study. The purpose of qualitative research is theory development. Through this study, the researchers were able to present at least one theory on the if and why there continues to be home hazards in the home of the elderly that predispose them to fall despite current research and the recommendations made by health care professionals. According to Strauss and Corbin (1990) “qualitative research is any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (p. 17). It includes research about people’s lives, stories, behavior, organizational functioning, social movements, and interactional relationships. Qualitative research values the subject’s perspectives on their world and seeks to discover those perspectives (Strauss & Corbin, 1990). Our study examined the perspectives of the elderly and physicians based on the belief that these perceptions are valuable for addressing falls in the elderly, a major cause of morbidity and mortality among this group. The selection of qualitative research design was appropriate and beneficial for this type of study.

The researchers and the experts were the sole means of data collection and analysis. We used interviews, videotapes, and focus group discussions which are the common ways data is collected in qualitative research (Strauss & Corbin, 1990). Focus groups were beneficial for providing insights into the attitudes, perceptions, and opinions
of the elderly population. Focus groups were not utilized to arrive at a decision (Krueger, 1994), but rather to develop emergent themes to be studied at a later date, again, making qualitative research appropriate for this study. Conversely, inventories and questionnaires are inherent to quantitative research (Strauss & Corbin, 1990). Quantitative research seeks to prove a hypothesis rather than develop themes.

**Trustworthiness**

Trustworthiness is a term used in qualitative research to refer to validity or reliability which are the comparable terms used in quantitative research. Trustworthiness is the way in which qualitative research is validated. Marshall and Rossman (1989) report that qualitative research is deemed to be trustworthy if it meets four criteria. The first criterion is its **credibility**, defined as the demonstration that the subject is accurately identified and described. Our study was considered credible because of the use of the videotape of client homes and audiotape of focus groups to ensure that the subjects were accurately identified and described. The researchers coded the videotape separately from the experts to also increase the credibility of the study.

The second criterion is **transferability**, defined as demonstrating that the findings will be applicable in other settings. Our study was designed to use multiple sources of data via multiple subjects and more that one data gathering technique to strengthen the study’s usefulness for other settings. The study also attempted to use subjects from different economic backgrounds and physicians with a variety of years of experience and of both sexes to enhance the study’s transferability.

The third criterion is **dependability**, which refers to the ease of replicating the study. This study will be difficult to duplicate due to the large amount of interpretation of the data collected by the researchers. However, documentation of how the researchers coded the data, how the certain concepts were chosen, and a log of decisions made with
rationale is provided for interested individuals and this has strengthened the study’s dependability.

The final point made by Marshall and Rossman (1989) is confirmability, where the goal is to demonstrate that the study was done in such a manner as to ensure that the subject was accurately identified and described. This was obtained by (1) experts analyzing the data gathered and playing “devil’s advocate”, (2) thorough field notes, and (3) a diary to record research design decisions and the rationale behind them to allow other’s to inspect procedures, protocols, and decisions. Finally the data was well organized, retrievable, and made available for other researchers to analyze.

**Population & Sampling Method**

The three different participant populations (physicians, videotaped homes, and focus group participants) of the study needed to meet the following inclusion criteria prior to becoming part of the study. The physicians interviewed possessed the following characteristics: (1) practicing family physicians, (2) had 5 years experience to assure a sound knowledge base concerning the needs and problems of the elderly, and (3) 20% of their patients needed to be 70 years of age or older. The physicians were chosen randomly from the West Michigan area. The physicians were of different ages and sex to allow us to enhance diversity. Because individuals 65 years and older are considered elderly, with increased age there is an increased risk for falls (Lewis, 1996), and considering the fact that the population is living longer (Kay & Tideiksaar, 1990), the researchers chose the age group of 70 years and older as their well-elderly subject population.

The homes videotaped were in the community and lived in by an independent well-elderly person. Independent means that the occupants of the home were able to complete their activities of daily living without assistance. The participants completed
the independence questionnaire (Appendix A) that was written by the authors to affirm that they were independent with their activities of daily living. The independence questionnaire sampled different levels of function to give a composite level of functional independence (basic, instrumental, and advanced activities of daily living) in the community-dwelling elderly. The participant needed to answer the questions to show that he or she was in fact living independently in the community in order to become a participant. Selecting independence as a criterion for the subjects reduced the chances of skewing the results by changing the usual elderly home environment. If the environment is changed by others outside of the home due to decreased independence of the elderly person, the person helping the elderly may rearrange the home to reduce hazards in the home. The community means that the subjects do not live in homes structured and built strictly for the elderly. This group of well-elderly were obtained through volunteers from the Western Michigan area. Videotaping was chosen to allow the authors and experts to have an objective measure of the homes of the elderly, giving the researchers the ability to view the environment more than once with the experts (Marshall & Rossman, 1989).

The participants of the focus groups consisted of those 70 years and older who are involved in social groups outside of the home. It is through these social groups that the researchers obtained subjects for the focus groups. This provided a convenient way of obtaining participants. The authors attempted to locate social group sites that were located in different geographic and economic backgrounds. The volunteers answered the independence questionnaire and took the Mini-Mental State Examination (Appendix B) to affirm that they were independent at home and to assure that the participants were not cognitively impaired, making them unable to answer questions and participate in discussion. All questions on the independence questionnaire needed to be answered correctly showing that they were in fact independent and the volunteer needed to score at
least a 24 out of a maximum of 30 on the Mini Mental State Examination to be invited into the focus group. The score of 24 or greater on the Mini-Mental State Examination has been classified as demonstrative of no cognitive impairment (Folstein, 1975). Tombaugh & McIntyre (1992) state that the reliability and validity of this examination are satisfactory.

The focus groups consisted of three groups of five to six elderly. Focus groups provide a greater amount of information in less time than individual interviews. Focus groups also provide a more natural environment than that of individual interviews because the subjects influence and are influenced by others, just as they are in real life (Krueger, 1994).

According to Krueger (1994), focus groups are shown to be valid because they allow the subjects to share insights that might not be available with individual interviews, questionnaires, and other data sources. The validity of the content gathered from the subjects of the focus groups was enhanced and strengthened by the preceding videotape, ongoing dialogue with the focus group participants to assure understanding of their answers and comments, peer and expert examination, and the triangulation of data to ensure the meaning and truth of the data. Five to six subjects per focus group were chosen because fewer than five or more than six would result in a smaller pool of ideas or decrease the potential for all participants to speak. Focus groups also need to be small enough to allow everyone to have the opportunity to share insights and large enough to provide a diversity of perceptions (Krueger, 1994). Krueger (1994) also states that in the past it was thought that the best focus groups were comprised of subjects who are unfamiliar with each other. However, researchers question the necessity and practicality of this. Therefore, the fact that the subjects may know each other will not be a limitation in this study. The multiple focus groups with participants of differing economic and
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geographic backgrounds was used to detect patterns and trends across the groups (Krueger, 1994).

Instrument

The instruments used in this study included an interview, videotapes, and discussion questions. The interview questions for the physicians were formulated with the use of the literature review and expert advice which focused on fall hazards, compliance issues, and fall prevention education (Appendix C). The focus group discussion topics were created via use of the results from the physician's interview, the literature review, and review of the videotape by the three authors and two experts in geriatrics. The most prevalent environmental hazards found in the elderly's home were identified and used to develop the topics for the focus groups. The discussion questions focus on the elderly's experience with falls and fall prevention education (Appendix D).

According to Krueger (1994), the success of focus groups depends on the quality of the questions. He suggests doing a pilot study for the questions that are to be used and offers stages to follow. Initially, it is suggested to have experts review the questions, to determine the sequential flow of the questions and the ability of the questions to elicit the information desired. The second part of the pilot test involves asking the questions to subjects who have similar characteristics as the subjects to be used in the study. The third part actually takes place after the first focus group discussion. Reflection on the wording and sequence of the questions should be done by the researchers. The final part involves seeking comments from the participants of the focus groups at the end of the discussion with on-going revision of the questions if need be. These steps were followed with the interview questions for the physicians and the independence questionnaire to assure proper sequencing and clarity in the wording of the questions. These steps were also be followed with the development of the discussion questions for the focus groups.
Procedure

There were two parts to our study. The first part involved soliciting the perspectives of health care professionals regarding risk factors that may predispose the well-elderly to falls in their homes. The perspectives of health care professionals were gained by: (1) interviewing three physicians and (2) allowing health care experts as well as the researchers to analyze a videotape taken of three homes of the well-elderly.

Three family physicians that met the stated criteria were interviewed for their perspectives on environmental risk factors that predispose the elderly to falls. These interviews were audiotaped with the physicians consent.

Next we videotaped three homes of well-elderly living independently in the community. We videotaped all aspects of the participant’s homes. We made sure we videotaped the high fall risk areas suggested by the literature review. Only the home of the well-elderly were videotaped, not the elderly themselves. These participants were volunteers chosen randomly in various socioeconomic communities and were not participants in the focus groups.

The second part of our study involved soliciting the perspectives of the well-elderly regarding fall risk factors in the home environment. The information was gathered via focus group discussions of three separate groups of five to six well-elderly which were audiotaped. The focus groups’ discussion topics were developed by information gathered from the physician interviews, videotape, and the literature review. The elderly focus groups also viewed a sample of the videotape to generate discussion during part of the focus group session. This was intended to compare and/or contrast the perspectives of the health care experts with the perspectives of the well-elderly with respect to environmental risk factors in the homes of the elderly. These were also audiotaped with consent of the participants.
Experts in the field of geriatrics and community dwellers of West Michigan were consulted concerning appropriate sites to look for the various participants. Area senior and fitness centers were contacted by telephone and an appointment was set up to meet with the director to explain the study and the type of volunteers needed. Five sites were found and the directors of three of the sites signed consent forms to allow us to attempt to gain volunteers for our study. The researchers attempted to gather volunteers to represent a wide variety of socioeconomic backgrounds. However, the directors of senior centers in lower socioeconomic areas stated that we would be unable to solicit volunteers from their facilities due to decreased participation in activities. Therefore, we were unable to represent a variety of socioeconomic classes. All volunteers were from the middle class socioeconomic group.

Prior to gathering data, approval was received from committee members and the Grand Valley State University Human Subjects Review Board. After the authors received approval, the established sites for obtaining participants for the focus groups were contacted by telephone and/or letter to set up times to come to their facility to do the preliminary screening of the volunteers and to carry out the focus groups. The elderly participants were selected from the established sites that had agreed to assist in obtaining volunteers for the study. Verbal contact with the physician or physician’s staff confirmed that the physician met the study’s criteria and times were then scheduled to interview the physician.

Individuals willing to participate in this study were asked to sign an informed consent form (Appendix E, F, & G). This form preceded the interview, videotape, and focus groups, and delineates the release of information and the right to confidentiality of the participants. The names of the participants were not stated or written, therefore,
names were not used in this study. As participants are interviewed, the dictated notes were assigned a study number or code to assure confidentiality.

The researchers conducted a pilot study on the interview questions to be used for the physician interview and the independence questionnaire used for screening the volunteers for the focus groups. Suggestions were made and changes were done in response to the suggestions. Written consent was received from the authors of the Mini-Mental State Examination (Folstein, 1975) which was also used to screen the volunteers for the focus group (Appendix H).

**Data Gathering**

Data was collected from June through August of 1996 via the previously stated procedure. Face-to-face group encounters, transcribed audiotape of the group encounters, and viewing of the videotape were used to gather data.

**Data Analysis**

A descriptive, narrative text was used to display the findings. The data analysis searched for general statements or themes about relationships among categories of data; to build grounded theory (Marshall & Rossman, 1989). Grounded theory is the discovery of theory from data. This data is systematically obtained through social research. The goal of grounded theory is to enable prediction and explanation of behavior (Glaser & Strauss, 1967). Open coding was used to analyze the data to specifically name and categorize emergent themes through close examination. This was done by breaking down and conceptualizing the data gathered from the physician interviews and discussions and giving each discrete incident, idea, or event, a name, something that represented a theme (Strauss & Corbin, 1990).
CHAPTER 4
RESULTS

Upon completion of our focus groups and physician interviews, the audiotaped data was transcribed into text. Next, we analyzed the transcribed text to find themes common to both the focus groups and physician interviews. Themes were generated by recording the responses that were common to at least two of the three focus groups or two of the three physician interview sessions. Discrepancies between the focus groups and physician interviews were then discussed. We utilized specific quotes from the subjects to convey their messages and give credence to their perceptions.

Focus Group Subject Characteristics

The focus group participants ranged in age from 65 to 82 years old. There was one participant from the first focus group who was 65 years old, the remaining were over the age of 70. The mean age of the participants was 74 years old. Focus groups one and two had five participants and focus group three included four participants. Focus group three fell short in meeting our initial criteria of having five to six participants secondary to scheduling conflicts by the other volunteers. All of the participants were female who lived independently without “outside” help. They all had a Mini Mental State Examination (Folstein, 1975) score of 27 or above. One participant from focus group number one used a walker to assist with ambulation. All of the participants were involved in outside activities. The first focus group’s participants were actively involved in the South Wyoming Senior Center. The second focus group consisted of members of the Holland Evergreen Commons, a senior activity center. The third group consisted of members of a chair aerobics class held at the OMNI fitness center in Muskegon, Michigan.
The focus group members were asked a basic set of questions that facilitated discussion in all three of the focus groups. The main focus of the discussion revolved around the experiences and thoughts of the elderly regarding falls. After the discussion section of each focus group, each participant watched a five minute video consisting of segments displaying the homes of three well-elderly West Michigan residents. After viewing the video, we asked each participant to write down what she felt were household environmental hazards based on what she had seen in the video. Participants were encouraged not to compare opinions with each other.

Analysis of Videotape

The researchers then reviewed all of the participants' opinions of the three homes and found one theme common to all fourteen of the participants. They all stated clutter and or "too much stuff on the floor" as an environmental hazard. Further analysis revealed environmental hazard themes common to ten of the fourteen participants, including: a) stairs without a rail, b) open stairs versus closed stairs being more dangerous, c) phone and/or telephone cord on the floor, and d) throw rugs. It is also interesting to note only two of the fourteen made any mention of lighting issues. In contrast, when the video was viewed by health care experts, including an occupational and physical therapist, other areas of concern were noted, these included: color contrast between the furniture, carpet, and walls, and accessibility of objects.

Physician Characteristics

Three general practitioners were interviewed. Two of the physicians were male and one was female. All three of the physicians were practicing family physicians, one with 33 years of experience while the other two had 8 years of experience. One physician practiced in Allendale, one in Grand Rapids, and one in Muskegon. The physician with 33 years of experience reported 25% of his patient population being elderly (meaning 65 years or older) while the other two stated that 15% of their patients were elderly.
Common Themes

This section will begin with themes common to both the physicians and the well-elderly focus groups. The first common theme was that the concern about falling is not perceived to be a problem until a fall actually occurs or a risk of falling is actually a problem. Evidence of this can be found in the following quotations. When asked by a fellow focus group participant why they have never put up a banister to their basement steps, one elderly participant stated the following. “Because we have never fallen, not even my children. So you don’t think of the rail until it [a fall] happens.” Another elderly participant stated, “I have a throw rug now. I should get rid of it, but I haven’t stumbled over it yet.” Yet another focus group participant stated, “I don’t have a railing on my basement either. The wall is there. You have the wall to use.” When researchers questioned her about putting up a railing, the participant replied saying, “I’ve never fallen.” The physicians become concerned about falls retrospectively. Physicians do state that falls are not addressed in regular doctor’s appointments unless the elderly patient states that he or she has fallen.

The second common theme is that the stairs and bathroom are the most common places for falls. This theme is supported in the literature (Hindmarsh & Estes, 1989; Sjørgen & Bjornstig, 1991; Tideiksaar, 1986). The basement steps were noted to be frequently associated to falls in answers given by the well-elderly. One elderly stated, “I am afraid of basement steps. Three times I fell down the basement stairs, but my husband didn’t know.” In reference to the bathroom, one focus group participant stated, “You can slip. The floor gets slippery sometimes. You can hit your head on the tub.” All three physicians also stated that stairs were the main cause of falls in the home. In addition to stairs, one physician stated that the elderly tend to fall more in the areas in their home where they spend a lot of their time. The physician went on to state, “they [elderly] get the idea that stairs are more dangerous so they are more cautious.” The bathroom was
falls

also mentioned by all three physicians as an area in the home where elderly fall frequently. One physician gave specific examples why bathrooms could be a dangerous area for the elderly. She referred to the moisturizers used by the elderly for dry skin as a hazard in the bathroom. She stated that “these moisturizers can make the bottom of the tub slippery, thus increasing the risk for falls.” This same physician identified “getting in and out of the tub” as hazardous.

The third common theme relates to the cost of home modification recommendations. The more costly a home modification recommendation is, the less likely the well-elderly will be to comply with the recommendation. This theme is also supported by the literature (Devor, et. al., 1994). When focus group participants were asked what determined if they would follow through with a suggestion for modifying their home environment, one stated that, “it would depend on what it was and what it cost.” The person stated that if it “cost a lot of money I probably couldn’t afford it.” When asked the same question another stated specifically “Money. I’ve been on social security, so money is tight for me.” All three physicians stated finances could be a barrier to complying with recommendations regarding home modifications. One physician explicitly listed finances as a barrier to elderly following through with recommendations. “If it [home modification] requires finances, it is going to be a barrier.”

The fourth common theme involves physicians not addressing home fall prevention in regular doctor visits with the well-elderly. Even though physicians agree that it is their role to address fall prevention, all three of the physicians interviewed stated that falling is not part of their standard history taking, nor do they educate the patients on fall prevention during routine visits. To fulfill the well-elderly’s concern and need for fall prevention education, the focus group participants reported that they turn to other sources such as family members, peer groups, insurance companies, and the media. These reports suggest that physicians are not fulfilling their role and the elderly are
looking elsewhere for information. When the physicians were asked if they include education about fall prevention during a check-up, one physician stated “I have not found it [falls] to be a big problem in the elderly. I tend to emphasize those things that most importantly use my time in preventing illness and disease. The biggest cause of death in this country is still heart disease. I try to prevent those things.” However, the literature clearly states that, “Falls are the largest single cause of death due to injury in the elderly,” (Kay & Tideiksaar, 1990). This finding suggests that physicians are trying to prevent illness and disease more than injury, because they do not know that falls among the elderly are a major cause of death. When an elderly person suffers an injury, he or she is left with subclinical problems which creates an increased risk for things other than disease and pathology. Research states that in the last 30 years there has been a reduction in congestive heart disease mortality due to risk factor reduction earlier in the life span. Therefore, continued reduction in risk factors can decrease mortality (Guccione, 1993).

The fifth common theme in both participant groups pertains to compliance of the well-elderly with respect to home modification recommendations. Regardless of what home modifications the physician recommends, the well-elderly expressed that they, themselves, must agree and decide if the proposed benefits (fall prevention) outweigh the risks (financial and personal sacrifice). One elderly participant stated that, “[she] doesn’t even have a ramp because [her husband] is able to hang on [to her] with one hand, and go one step at a time. If we are able to do this, we will not build a ramp.” Many well-elderly stated that if the recommendation, “cost a lot of money, we probably couldn’t afford it.” This perspective is also supported in the literature. Beckman and Maiman (1975) state that measures that require personal or financial sacrifice and that disrupt well-established habits or a family unit will not be followed unless the benefits outweigh the sacrifice. This is also supported by Devor et. al. (1994). When asked why elderly do not comply with recommendations, one physician stated, ‘Compliance is not always
immediate. Sometimes the elderly need time to accept and decide on their own when and if they will follow safety recommendations.'

Finally, the sixth common theme between the physician and elderly is that furniture changes may increase the risk of falls because it would decrease the environmental familiarity. One focus group participant stated the following, “since you do know your house so well, you might be better off [leaving it unchanged] because you already know the lay out of your house. If someone would come in and change it, it might be worse.” A physician stated, “The elderly become comfortable with the familiar. ‘I have always had that rug there. My husband bought that rug on our 40th anniversary, and then died three weeks later’ They think they would be unfaithful to them [spouse] if they move the rug.” Another physician stated that “furniture placement” can be hazardous to the well-elderly. The physician stated that the elderly ‘do not see the furniture and do not negotiate the corners well.’

Discrepancies

Despite this high number of commonalities found among the elderly and physicians, there were also some significant discrepancies noted. While the elderly blame poor judgement and extrinsic factors for falls, such as “carrying too many objects while closing the door with my foot,” “moving too quickly,” and “floppy footwear,” the physicians were more likely to identify intrinsic factors as the main cause for falls. The physicians were more likely to attribute falling to arrhythmias, medication, hypotension, and peripheral neuropathies.

The second discrepancy noted between the physicians and well-elderly involves the issue of frailty, referring to a decrease in physical strength and an increase in fragileness (Lewis, 1996). Frailty is an intrinsic factor which predisposes the elderly to falls. The elderly do not see themselves as frail, nor old and therefore do not take precautions to prevent falls. As one elderly participant stated, “You never think that you
are old. You never think that you are as old as you are.” The elderly are continually accommodating to aging, therefore the elderly are again more likely to look extrinsically at the cause of falls than intrinsically. This reinforces the first discrepancy noted above. However, research suggests that falls in the elderly population are associated with frailty (Kay & Tideiksaar, 1990; Wolf-Klein, 1988). Frailty leads to an increased risk for falls. As the number of frail characteristics increases, the risk for falls increases. Healthcare professionals including physicians perceive the majority of the elderly population as frail. One physician referred to the fact that many elderly, especially women, suffer from osteoporosis, which is a reduction in bone mass, and thus become frail (Lewis, 1996). This physician suggested, “making all women at child-bearing age go on low-dose birth control pills, do aerobic exercise, and take calcium so at age 35 they can actually keep building bone density,” and thus decrease their chances of becoming frail. All health care professionals are product oriented to modify intrinsic factors. Health care professionals typically follow the medical model, often overlooking the most obvious and easily modified changes. Research states that extrinsic factors are quicker and more cheaply modified (Tideiksaar, 1986).

The third discrepancy between the elderly and physician responses involved where and how the elderly got their information about fall prevention. Despite the fact that all three physicians agree that they should be the primary source for preventative health information, the majority of well-elderly participants stated that they received their fall prevention information from other sources. One elderly participant stated, “Our coffee group that goes out after our exercise class. We learn a lot of things. We talk about things when people fall. They tell us how they fell and then we talk about it.” Other focus group participants stated that they get their information from “listening to the television programs.” Yet other answers given in the focus group regarding the gaining of information from outside sources involved “insurance agencies”, “my daughter”, and
falls 42

"out of my own head." This shows that the elderly are seeking fall prevention information from other sources besides their physicians. As stated previously, physicians "emphasize those things that most importantly use my time in preventing illness and disease." One physician stated, "we are really big on accident prevention in kids. We do a pretty poor job of it [accident prevention] in elderly patients."

The fourth discrepancy noted between the physicians and the elderly involved the fear of falling. The elderly spoke about the fear of falling as a major concern, whereas none of the physicians acknowledged, nor spoke about the elderly's fear of falling in the interview. Many of the elderly stated that they were scared about falling, while the physicians stated that falls are not a big problem. Therefore, the physicians do not include prevention of falls as a standard part of their educational process. One elderly participant's fear of falling is noted in the following comment, "I have a great fear of falling because I have an artificial bypass and my hips are so bad. I could fall very easily." Another focus group participant stated, "My biggest fear is that I will have no one there if I do fall." The research supports this fear of falling seen in the elderly, and suggests that it actually contributes to falls, terming it "fallaphobia." The article states, "Even elderly patients with no previous history of falls express fearful anticipation for falling" (Tideiksaar & Kay, 1986). The article goes on to state that this "fallaphobia" may lead to loss of confidence and restriction of activities in the elderly. This decrease in activity level may result in immobility which can increase the elderly’s chance for falls (Tideiksaar & Kay, 1986). Clearly, this fear of falling found among the elderly is a critical issue which needs to be acknowledged and addressed by the health care professionals. Education for fall prevention in the elderly may help reduce their fear of falling while education of physicians about this fear may prompt the physician to address this concern more consistently among elderly patients. The following quote from one of our interviews provides evidence of the erroneous thinking that keeps many physicians
from addressing falls as a concern of the elderly population. He states, "I don't find falls to be a big problem with the elderly. Most of my elderly are energetic and active. If I had more elderly or weak, then I might address this."

**Summary of Results**

In summary, there were six common themes and four discrepancies noted between the physicians and focus group participants. Both the similarities and discrepancies are significant and have clinical implications which will be analyzed in the discussion section.
Chapter 5
Discussion

The results of this research provided evidence that there are similarities and discrepancies in the way physicians and the well-elderly perceive and address falls and fall prevention. The results were divided into two categories: similarities in perceptions and discrepancies in perceptions. There were more similarities than discrepancies between the elderly and physician responses than what we, the researchers, expected at the beginning of our study.

Similarities

Regarding the similarities, the results from this research provide evidence that both the well-elderly and physicians (a) have a concern about falling after the fall occurs but not before, (b) view the stairs and bathroom as the most common places for falls, (c) realize that the more costly a home modification recommendation is, the less likely the well-elderly will be to comply with the recommendation, (d) agree that physicians are not addressing home fall prevention in appointments with the well-elderly, (e) elderly must agree with the need for any home modification recommendations that a health care professional suggests, (f) state that furniture changes may increase the risk of falls because it would decrease the environmental familiarity.

Discrepancies

The discrepancies between the well-elderly and physicians noted within the results were (a) the elderly blame poor judgement and extrinsic factors for falls whereas the physicians were more likely to identify intrinsic factors as the main cause of falls, (b) the well-elderly do not see themselves as frail, whereas many physicians do see the elderly as frail, (c) the elderly get their information about fall prevention from sources
other than health care professionals, and (d) the elderly have a fear of falling which physicians are not addressing.

**Strengths**

This research has several strengths. The design of the study was tightly controlled and is reproducible. Quotes from the well-elderly and physicians were audiotaped and transcribed to assure accuracy of the data. There was good participation from the well-elderly members of the focus groups and the physicians, which provided for a large amount of useful information regarding falls and fall prevention. To help give the study more control, one researcher was present for all focus group discussions and physician interviews.

**Limitations**

On the other hand, certain limitations of this study should be noted. The limitations of this study were categorized into three groups (1) focus group participant limitations, (2) physician interview limitations, and (3) home videotape participant limitations.

Regarding the focus groups, one participant was 65 years old, less than the stated 70 years of age or older inclusion criteria. However, 65 years of age is considered to be in the elderly population. Therefore, we, the researchers, believe that this limitation did not hinder the results of the study.

Another limitation of the focus groups was the fact that different personality types dominated the conversation in discussion groups. In discussion groups people can agree with other participants answers instead of expressing their own. Because of this personality factor, all opinions and views that could have been elicited from the focus groups may not have been gathered.
Although we attempted to interview people from all socioeconomic groups, the researchers did not feel the lower socioeconomic groups were well represented. When the researchers contacted organizations that serviced the lower class society, the directors stated that the people would not volunteer. Secondary to time, we were only able to represent West Michigan which is considered to be comprised of the higher socioeconomic class. Therefore, this narrow demographic characteristic may be considered a limitation as well.

There was one limitation unique to the physician interview group. As stated in the methodology, the researchers wanted physicians whose elderly clientele comprised at least 20% of their patients. Two of the physicians interviewed stated that only 15% of their patients were elderly. The researchers believe this had little impact on the results since the inclusion criteria of 20% of clientele being elderly was intended to act as a general guideline to assure the doctor had adequate exposure to the elderly population. We, the researchers, believed that the physicians with elderly clientele comprising 15% of their practice gave them enough experience with the elderly to answer our questions.

The videotape participant limitation pertained to the researchers' scheduling method. We, the researchers, had to let the participants know in advance that we were coming to videotape their homes. This advanced notice allowed the elderly home-owner to clean and “straighten” their homes, altering their true everyday environment.

Limitations that were characteristic to all three participant groups were (1) all participant groups had a small sample size, (2) no participant groups were a random sample, (3) all participants were from West Michigan. It is these three reasons as well as the above mentioned, that make it difficult to generalize our results to the entire elderly population and to all family physicians. However, the researchers attempted to represent more elderly participants via focus group discussions as opposed to one on one
interviews. This discussion method allowed more data to be gathered in an efficient manner.

**Major Issues**

Despite these limitations, the study uncovered three major issues that have tremendous clinical implications. The first major issue pertains to the fact that neither the physicians nor the well-elderly mentioned the environmental factors that research has shown to be correlated with household related falls. Although both the elderly and the physicians were able to list environmental home hazards that may cause falls, their lists were not complete according to current available research. Several issues that are correlated with household falls that were not mentioned by either group were lighting, shiny floor surfaces, lack of color contrast between flooring, furniture, and walls, and accessibility of objects (Tideiksaar & Kay, 1986).

The second and third major issues will be discussed together as they relate to each other. These two issues refer to the fact that physicians stated in the interviews that education on fall prevention is their responsibility. At the same time, the physicians admitted that they do not make fall prevention part of the education of the elderly. The third issue is made more significant by the fact that physicians generally did not make referrals for fall prevention education even though they consistently stated that it was their responsibility for addressing fall prevention with the elderly.

As indicated previously by the study, the physicians do not prioritize fall prevention in the treatment of their elderly clientele. Some of the physicians attributed this treatment deficit to time constraints. The alternative of making referrals to physical therapy for fall prevention education was discussed by one physician as "an abuse of the third party provider because physical therapists charge on an hourly basis. This is higher
than an [physician] office visit fee.” Clearly, there is a serious gap in education for fall prevention in the elderly, as evidenced by the results of this study.

First, it appears that, both the elderly and the health care professionals are guilty of making assumptions as to the causes of falls, rather than using factual data. Elderly patients may not be giving accurate and full information to their health care professional because of their fear of losing their independence, and this is borne out by research. Several reasons for this inaccuracy are reported in the literature: (1) falls are attributed to normal aging, (2) fear that reporting a fall will lead to nursing home placement, and (3) falling is a reminder of increased frailty (Tideiksaar & Kay, 1986). This lack of information makes it difficult for the health care professional to determine the exact cause of a fall or to see falls as a major health problem of the elderly. On the other hand, the health care professionals are not completely knowledgeable about the causes of falls and therefore are unable to fully educate their elderly patients. This was evidenced by the responses given as to the causes of falls and the fact that neither the elderly, nor the physician mentioned lighting, accessibility of objects, and lack of color contrasts in wall/furniture/and flooring as factors causing falls.

Additionally, an interesting observation made by the researchers during the physician interviews was the overall change in attitude and demeanor when the physicians responded to questions about their role in educating the elderly about fall prevention. This observed behavioral change was characterized by (1) an increase in voice volume, (2) a noted urgency to answer the question, (3) an increase in number of words used to answer some questions, and (4) aggressive body language (i.e. leaning forward with arms folded). The researchers believe that these behavioral changes communicated an overall defensive position among the physicians, with regard to their role in fall prevention education.
As stated earlier by one physician, "I tend to emphasize those things that most importantly use my time in preventing illness and disease. The biggest cause of death in this country is still heart disease." The physicians' answers to questions regarding fall prevention in the elderly were much longer than their answers to the other questions that comprised the interview. One physician began making negative remarks about physical therapy for fall prevention education even though no mention of physical therapy had been made or even alluded to in this interview.

The fact that all three physicians reported that they believe it is the physician's responsibility to educate, but none of them utilize a formal fall prevention strategy for their elderly patients suggest that the gap in communication between the elderly and health care professionals may be growing. No one in health care seems to be taking on the responsibility of education for fall prevention. No one health care professional has the time, nor the ability to be the sole educator of the elderly regarding effective and efficient fall prevention. Clearly, a new approach to the well-being of the elderly needs to be considered.

Future Research

The aforementioned implications provide an impetus for future research studies. The following five suggestions serve as guidelines for future research: (1) The need for more research is crucial in educating the elderly and health care professionals in the prevention of accidents and injury control. This study is evidence that education of the elderly in the area of fall prevention is not being done by physicians. (2) Other studies may look at a cooperative or individual education effort for addressing the lack of fall education which may include posters and brochures. Such studies may look at the impact of various education strategies on the incidence of falls in the homes of the well-elderly. (3) A research project utilizing an interdisciplinary approach to the prevention of falls in
the elderly may also be a way to support what this study has found. (4) Another study can look at different home modification recommendation strategies and compare/contrast compliance ratings of each. (5) Finally, a study could be conducted that researched the cost-effectiveness of educating HMO providers on the benefits of fall prevention.

**Clinical Implications**

Not only did this study show the need for future research, it also provided immediate clinical implications. Since the elderly are receiving their information from potentially inaccurate sources, it is the responsibility of all health care professionals to educate the elderly on all risk factors associated with falls. The elderly also need to understand how to modify their home environment, why it is necessary to make changes, and the recommendations for modification must be made meaningful to them. When suggesting home modifications, health care professionals must consider the personal and financial cost of these modifiable recommendations.

Another implication of this study was that the elderly have an anticipated fear of falling. This fear must be acknowledged and addressed by all health care professionals. This fear of falling can be addressed through the education on home modification recommendations. This education can empower the elderly, making them feel more knowledgeable about falls and fall prevention, and helping to decrease the elderly's anxiety about falls.

Since no one discipline can do all the fall prevention education alone secondary to time constraints and cost effectiveness, the final implication of this study is in regard to taking an interdisciplinary approach to education on falls and fall prevention. Before health care professionals can begin educating the elderly, the entire medical field needs to be fully aware of all factors that may predispose the elderly to falls. The education of health care providers can be accomplished through inservices, conferences, and literature.
In turn, all health care providers can be educators of the elderly on falls and fall prevention. The elderly can be educated using a team approach through a community outreach program. The community outreach program can target senior centers, young men's Christian association (YMCA), and churches. Educating the elderly can save health care money, preserve quality of care of the elderly, and promote feelings of successful aging.

Conclusion

As highlighted by this study, there is a significant gap in the knowledge base and understanding among both the well-elderly and health care professionals in education for fall prevention. The solution to this may not be simple, but could be made easier if there was collaboration between disciplines. No one discipline can do education alone secondary to lack of time and cost effectiveness. All health care professionals need to take a role in patient education. Health care professionals also need to keep in mind the cost and the degree of intrusiveness of home modification recommendations made to the elderly. They must emphasize the preventative value of these modifications and refrain from personal intrusion in order to assist the elderly with this transition and a realistic assessment of their abilities.
References


Appendix A

INDEPENDENCE QUESTIONNAIRE

1. Do you live in: (Circle One)
   An apartment?
   A one story house?
   A two story house?

2. Do you need help with your own:
   Bathing - yes  no
   Dressing - yes no
   Personal Hygiene - yes  no

3. Can you prepare your own meals? (Circle One)
   Yes       No

4. Are you able to walk around your house without
   assistance of another person? (Circle One)
   Yes       No

5. How often are you involved in social activities outside
   the house? (Circle One)
   1 - 2 times per week
   3 - 4 times per week
   5 - 6 times per week
## Mini-Mental State Exam

### Orientation:

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<thead>
<tr>
<th>Question</th>
<th>Maximum Score</th>
<th>Score</th>
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<tr>
<td>What is the (year) (season) (date) (day) (month)?</td>
<td>5</td>
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<tr>
<td>Where are we: (state) (county) (town) (hospital) (floor)?</td>
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### Registration:

Name three objects (bed, apple, shoe). Ask the patient to repeat them.

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<tr>
<th>Question</th>
<th>Maximum Score</th>
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<tr>
<td>Name three objects</td>
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### Attention and Calculation:

Count backwards by 7s. Start with 100. Stop after 5 calculations.

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<th>Question</th>
<th>Maximum Score</th>
<th>Score</th>
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<tbody>
<tr>
<td>Count backwards</td>
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Alternate question:

Spell the word "world" backwards.

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<th>Question</th>
<th>Maximum Score</th>
<th>Score</th>
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<tr>
<td>Spell the word &quot;world&quot; backwards</td>
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### Recall:

Ask for the three objects used in question 2 to be repeated.

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<td>Ask for the three objects</td>
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### Language:

1. Naming: Name this object. (watch, pencil)

2. Repetition: Repeat the following— "No ifs, ands or buts."

3. Follow a 3-stage command: "Take the paper in your right hand, fold it in half, and put it on the floor."

4. Reading: Read and obey the following: Close your eyes.

5. Writing: Write a sentence.

6. Copying: Copy this design.

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<td>1. Naming</td>
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<td>2. Repetition</td>
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<td>3. Follow a 3-stage command</td>
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<td>4. Reading</td>
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<tr>
<td>5. Writing</td>
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<tr>
<td>6. Copying</td>
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### Score the Total Number Correct:

(93, 86, 79, 72, 65)

### Score the Number of Letters in Correct Order:

(dirow = 5, dlorw = 3)

### Instructions:

- Ask for the date. Then proceed to ask other parts of the question. One point for each correct segment of the question.
- Ask for the facility then proceed to parts of the question. One point for each correct segment of the question.
- Name the objects slowly, one second for each. Ask him to repeat. Score by the number he is able to recall. Take time here for him to learn the series of objects, up to 6 trials, to use later for the memory test.
- Score the total number correct.
- Score one point for each correct answer.
- Hold the object. Ask patient to name it. Score one point for each correct answer. Allow one trial only. Score one point for correct answer.
- Use a blank sheet of paper. Score one point for each part correctly executed.
- Instruction should be printed on a page. Allow patient to read it. Score by a correct response.
- Provide paper and pencil. Allow patient to write any sentence. It must contain a noun, verb, and be sensible.
- All 10 angles must be present. Figures must intersect. Tremor and rotation are ignored.
- (Max. 30) Test is not timed.

Appendix C

QUESTIONNAIRE FOR PHYSICIANS

Definitions: Elderly: Any person over the age of 65 years
Fall: Accidentally coming to rest on the floor or against an object from a vertical position

1. How long have you been practicing as a family physician?

2. What percentage of your clientele is elderly?
   - 0-20%
   - 20-40%
   - 40-60%
   - 60-80%
   - 80-100%

3. How many of your elderly clients come in seeking treatment after they have fallen?
   USE ABOVE PERCENTAGE SCALE

4. In the last year, what percentage of elderly clients have reported a fall which they did not seek treatment?
   USE ABOVE PERCENTAGE SCALE

5. Can you tell a story of a client who has fallen in his/her home.

6. Do you include education for fall prevention during your client's yearly check-up?
   If so, how?

Definitions: Intrinsic: Pathological, physiological, normal age-related changes, drug toxicity, and psychological factors
Extrinsic/Environmental: Physical features in the home or community

7. Do you see environmental OR intrinsic factors as the primary cause of falls?

8. What are the top 2 primary preventative measures you recommend to your elderly patients in regards to falls?

9. Are questions about falls part of your standard history taking?

10. If you had to choose 3 of the primary factors that cause falls, what would they be?
10. If you had to choose 3 of the primary factors that cause falls, what would they be?

11. What area(s) in the elderly's home do you see most clients fall?

12. Now if you had to specifically name 3 extrinsic factors that cause falls in the home, what would they be?

13. What techniques do you use to educate patients about fall prevention?

14. What do you see as the role of the physician with respect to home safety among the elderly?

15. In your opinion, who in the health care community environment should be addressing the home? Who is most appropriate?

16. Compare/Contrast the lifestyle of two patients, one who lives a wellness oriented lifestyle with one who does not. Wellness oriented lifestyle includes:

- Family support
- Socioeconomic
- Activity level

17. Paint a picture of the ideal and then the less than ideal patient.

18. Why do you think some elderly comply with recommendations concerning home modifications and why others do not? What factors do you see play a part in compliance?

19. Are there any important issues that you feel our discussion has not addressed that you would like to bring up.
Appendix D

FOCUS GROUP QUESTIONS

Introduction

1. Tell us your name, favorite hobby or past/current occupation.

2. Tell us a story about someone you know who has fallen and the circumstances surrounding their fall (why, when, where)?

3. What do you think made that person fall?

4. What concerns do you have about falling yourself? Have you ever fallen? Probe questions: Does falling worry you a lot?

5. Have these concerns influenced your lifestyle? Activities?

6. Have you talked to your doctor about your fears of falling in the home? If so, what was done or what was suggested?

7. How do you feel regarding your doctor’s response?
8. If your doctor made suggestions, did you follow through with them. Why or why not?

9. What are your biggest challenges when walking in your home? How do you deal with them?

10. Has your health affected your function or mobility? If so, how?

11. Has anyone ever suggested that you should change things at home to make it less dangerous? If not, how would you feel if someone came into your home and looked at it, then made suggestions about how to make it "safer"? What did you think of that?

**VIDEO** - (we may show a couple times) "Write down anything you see that you think may predispose a person to fall."
Appendix E

PHYSICIAN CONSENT FORM

I understand that this is a study of the factors in the home which may cause one to fall. The knowledge gained is expected to help health care professionals and the general public become aware of the differences in ideas which may cause the well-elderly to fall in the home. It is hoped that this insight will help to reduce the number of falls in the home that are due to the home environment.

I also understand that:

1. participation in this study will involve a one 30 minute session involving an interview regarding my feelings about safety problems in the elderly's home.

2. that I have been selected for participation because I am a family physician.

3. it is not anticipated that this study will lead to physical or emotional risk to myself.

4. the information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible.

5. a summary of the results will be made available to me upon my request.

6. the interview/discussion will be audio-recorded and the tape will be destroyed after the it is transcribed.

I acknowledge that:

"I have been given an opportunity to ask questions regarding this research study, and that these questions have been answered to my
satisfaction."

"In giving my consent, I understand that my participation in this study is voluntary and that I may withdraw at any time."

"The investigators, Kay Smaltz, Cathy Schenten, and Deb Bliler have my permission to tape record our conservation or videotape my home."

"I hereby authorize the investigators to release the information obtained in this study to scientific literature. I understand that I will not be identified by name."

"I have been given Kay Smaltz, Cathy Schenten, and Deb Bliler phone numbers so that I may contact them at any time if I have questions."

"I acknowledge that I have read and understand the above information, and that I agree to participate in this study."

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I am interested in receiving a summary of the study results.

Phone numbers:
Kay Smaltz   (616) 892-6827
Cathy Schenten   (616) 892-6827
Deb Bliler   (616) 847-8496

If you have any questions concerning the rights of the subjects, please feel free to contact Paul Huizenga, Chair of Human Subject Review Committee at Grand Valley State University, at: (616) 895-2472.
Appendix F

VIDEOTAPE CONSENT FORM

I understand that this is a study of the factors in the home which may cause one to fall. The knowledge gained is expected to help health care professionals and the general public become aware of the differences in ideas which may cause the well-elderly to fall in the home. It is hoped that this insight will help to reduce the number of falls in the home that are due to the home environment.

I also understand that:

1. participation in this study will involve a videotape of my home and I will not personally be videotaped.

2. that I have been selected for participation because 70 years or older and live independently in a house.

3. it is not anticipated that this study will lead to physical or emotional risk to myself.

4. the information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible.

5. a summary of the results will be made available to me upon my request.

6. the videotape will be destroyed after the study is completed.

I acknowledge that:
"I have been given an opportunity to ask questions regarding this research study, and that these questions have been answered to my satisfaction."
"In giving my consent, I understand that my participation in this study is voluntary and that I may withdraw at any time."

"The investigators, Kay Smaltz, Cathy Schenten, and Deb Bliler have my permission to tape record our conversation or videotape my home."

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Cathy Schenten (616) 892-6827
Deb Bliler (616) 847-8496

If you have any questions concerning the rights of the subjects, please feel free to contact Paul Huizenga, Chair of Human Subject Review Committee at Grand Valley State University, at: (616) 895-2472.
FOCUS GROUP PARTICIPANT CONSENT FORM

I understand that this is a study of the factors in the home which may cause one to fall. The knowledge gained is expected to help health care professionals and the general public become aware of the differences in ideas which may cause the well-elderly to fall in the home. It is hoped that this insight will help to reduce the number of falls in the home that are due to the home environment.

I also understand that:

1. participation in this study will involve completing two assessment forms which will take approximately 15 minutes to complete and one, one hour discussion session with five others regarding my feelings about safety problems in the home.

2. that I have been selected for participation because I am 70 years or older, am active in social activities, and live independently in a house.

3. it is not anticipated that this study will lead to physical or emotional risk to myself.

4. the information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible.

5. a summary of the results will be made available to me upon my request.

6. the interview/discussion will be audio-recorded and the tape will be destroyed after it has been transcribed.

I acknowledge that:
"I have been given an opportunity to ask questions regarding this research study, and that these questions have been answered to my satisfaction."

"In giving my consent, I understand that my participation in this study is voluntary and that I may withdraw at any time."

"The investigators, Kay Smaltz, Cathy Schenten, and Deb Bliler have my permission to tape record our conservation or videotape my home."

"I hereby authorize the investigators to release the information obtained in this study to scientific literature. I understand that I will not be identified by name."

"I have been given Kay Smaltz, Cathy Schenten, and Deb Bliler phone numbers so that I may contact them at any time if I have questions."

"I acknowledge that I have read and understand the above information, and that I agree to participate in this study."

_________________________  ____________________________
Witness                          Participant Signature

_________________________  ____________________________
Date                          Date

I am interested in receiving a summary of the study results.

Phone numbers:
Kay Smaltz       (616) 892-6827
Cathy Schenten  (616) 892-6827
Deb Bliler         (616) 847-8496

If you have any questions concerning the rights of the subjects, please feel free to contact Paul Huizenga, Chair of Human Subject Review Committee at: (616) 895-2472.
May 20, 1996

Ms. Deb Bliler
120 Wexchange
Spring Lake, MI 49456

Dear Ms. Bliler:

I am pleased to grant you permission to use the Mini-Mental State Exam (MMSE) for your research project for the study with the elderly. Use of the Mini-Mental State Examination (MMSE) for the purpose of research or treatment of patients is given without charge.

Please insure that the MMSE is appropriately cited ("Mini-Mental State: A Practical Method for Grading the Cognitive State of Patients for the Clinician". Journal of Psychiatric Research, 12(3):189-198, 1975) in any written materials that may result from this research. If you are interested in training or consultation on the use of the MMSE, please let me know.

Sincerely yours,

Marshal F. Folstein, M.D.
Chairman & Professor
Department of Psychiatry

MFF:gr