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Planning for the future : a grounded theory study of well older adults' decision-making regarding home modifications

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PLANNING FOR THE FUTURE: A GROUNDED THEORY STUDY OF
WELL OLDER ADULTS' DECISION-MAKING REGARDING
HOME MODIFICATION

by

Kathleen A. Subasic

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Occupational Therapy
Occupational Therapy Department
College of Allied Health and Nursing
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Fort Lauderdale, Florida 33328

July 18, 2014

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This dissertation, written by Kathleen A. Subasic under direction of her Dissertation Committee, and approved by all of its members, has been presented and accepted in partial fulfillment of requirements for the degree of

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Certification

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Abstract

The purpose of this dissertation research was to understand the decision-making process that well older adults use when deciding whether to make a home modification. The researcher also sought to understand the views of well older adults concerning the use of home modification to prevent injury and declines in occupational performance. The researcher used the Person–Environment-Occupation (PEO) model (Law et al., 1996) from occupational therapy and occupational science as the orienting framework.

A qualitative grounded theory approach based on that proposed by Strauss and Corbin (1998) was used to structure data collection and analysis. Participants were obtained using purposive and theoretical sampling and were interviewed by the researcher. The 19 participants in this study ranged in age from 65 to 89.

Findings from this study include a model of the decision-making process that well older adults used to plan for their futures related to home setting and modification and also a substantive grounded theory. The Theory of Home Modification Decision-Making: Well Older Adults is proposed and explained. Central to the theory are two decision-making processes, including the conditions that influence the decisions. These findings and the theory are discussed relative to the PEO model and existing occupational therapy and gerontology literature. The information gained from this study is beneficial to occupational therapists and Certified Aging-in-Place Specialists to improve and expand their services to the well older adult population.

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I would like to express my appreciation to the many individuals who have helped me during this dissertation research journey. First, I am indebted to the 19 individuals who shared their experiences with me. Thank you for allowing me to come into your homes and for sharing your time and wisdom with me.

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Chapter 1: Introduction

Background to the Problem

The older adult population in the United States is on the verge of a significant expansion. A substantial increase in the number of older people will occur between 2010 and 2030, as the Baby Boomers began turning age 65 in 2011 (He, Sengupta, Velkoff, & DeBarros, 2005). By 2030, the older adult population will double from that in 2000, when nearly 1 in 5 U.S. residents will be ages 65 or older (He et al., 2005; Vincent & Velkoff, 2010).

People in the United States are living longer and healthier lives and have a desire to stay in their own homes rather than seek an alternative living arrangement (Filion, Wister, & Coblenz, 1992; He et al., 2005; Love, 2010; Tenenbaum, 2007; Wagnild, 2001). In fact, a recent survey of older adults showed that typically 90 percent wanted to stay in their homes as they get older, and they fear loss of independence more than death (Soucy, 2008).

As individuals age, they experience sensory and physical changes. Although these changes may not lead to disability, they make it more difficult for older adults to perform daily routines and manage their homes in the manner they did previously (Beck, 1998; Hazen & McCree, 2001). The home a person has lived in for years may not be optimally designed to support that person as he or she ages. Although older adults may be concerned about the ability to stay in their homes and live independently, many do not

consider that modifications need to be made to the home to adapt for these age-related changes until there is an accident such as a fall (Soucy, 2008).

Successful occupational performance, as described in the Person–Environment–Occupation (PEO) model (Law et al., 1996), requires an optimal fit among the person, the environment, and the desired occupation. If the environment and occupation remain static as people age, the fit may not be optimal and thus can result in non-optimal occupational performance.

Barriers and hazards often exist in an older adult's home that can increase accident risk and limit occupational performance. Eighty percent of older adults' homes have one or more safety hazards, with multiple hazards often present in rooms where complex daily activities such as showering or cooking are performed (Carter, Campbell, Sanson-Fisher, Redman, & Gillespie, 1997). Failure to decrease home hazards and barriers through home modifications may result in increased falls risk (Cumming et al., 1999), increased dependence in activities of daily living (ADLs) (Susanne Iwarsson, 2005; Werngren-Elgström, Carlsson, & Iwarsson, 2009), and decreased occupational performance (Stark, 2004).

Home modifications are changes to the architecture or structure of the home designed to improve functioning and participation in daily occupations (Stark, 2004). Home modifications may be helpful to reduce or prevent accidents (Newton, 2006; T. Tse, 2005); make the home safer for older adults; and increase ease of use, comfort, security, and independence ("Home Modification," n.d.). These modifications include major changes such as adding ramps or walk-in showers and minor changes such as adding grab bars, removing clutter, and improving home lighting ("Home Modification,"

n.d. ; Soucy, 2008 ; T. Tse, 2005). In addition to reducing hazards and increasing safety, home modifications also can result in a lower level of difficulty with daily activities, an increase in activity participation, and improved sleep (Niva & Skar, 2006; Petersson, Kottorp, Bergstrom, & Lilja, 2009; Stark, 2004b; Stark, Landsbaum, Palmer, Somerville, & Morris, 2009).

It seems evident that well older adults would benefit from implementing home modifications to adapt for age-related changes as a way to (a) improve their safety in the home through prevention of injury, (b) improve their ability to perform daily activities, and (c) maintain their independence as they age. Research has not been conducted to determine if well older adults make home modifications to facilitate aging-in-place and the factors they consider when deciding whether to implement a home modification.

Background of the Researcher

This researcher's interest in this project is rooted in 17 years of clinical experience as an occupational therapist and more recently as a Certified Aging-in-Place Specialist (CAPS). At the core of the occupational therapy profession are the beliefs that all individuals have the right to engage in meaningful occupations throughout the course of their lifetimes and that engagement in occupation is paramount to maintaining health (American Occupational Therapy Association, 2008). Individuals participate in their chosen occupations in the built (physical) environment, including the home, which may or may not optimally support engagement in those occupations. Working particularly in the home care setting, this researcher has observed numerous home living environments that do not support an individual's ability to successfully age in the home. The results of these situations often are a fall with injuries or decreased independence in ADLs due to

environmental barriers. Making home modifications while an older adult is still “well” optimally will benefit the individual in the future and possibly the society as a whole by reducing the number of home accidents, injuries, and related health care costs, and also maintaining the ability of older adults to live independently longer.

Statement of the Problem

As a person ages, the body undergoes changes that affect occupational performance. Therefore, the existing layout and attributes of a home’s physical environment, which had been safe for a younger person, can create hazards and barriers for a well older adult. The existing layout and attributes can contribute to non-optimal occupational performance of home-based activities, which can be experienced as difficulties with performing activities or a lack of safety while performing these activities. Without a modification to change the flawed layout or attributes, well older adults are at risk for injury and a decline in occupational performance.

Purpose of the Study

The purpose of this grounded theory study was to develop a substantive theory of the factors and conditions that influence a well older adult’s decision to implement or not implement home modifications and the decision-making process used. Well older adults’ views concerning using home modifications as a strategy to prevent a decline in occupational performance were also be explored.

Research Question

How do well older adults decide whether to make home modifications? What are well older adults' views of using home modification to promote health and to prevent a decline in occupational performance?

Definitions of Terms

1. *Aging-in-place*. "Growing old in one's home and home community" (Bonder & Bello-Haas, 2009, p. 656).
2. *Community-dwelling*. Residing in a private home within a geographic area in which day-to-day activities are completed (Pivo, 2005).
3. *Decision-making process*. Collecting available information on the subject; weighing risks, benefits, and needs; and systematically choosing the best result for the least cost (Chen et al., 2008; J. P. Clark et al., 2004).
4. *Functioning*. "Extent to which people are able to engage in occupations, influenced by health conditions and the physical, social, and attitudinal context" (Crepeau, Cohn, & Schell, 2009, p. 1159).
5. *Home modification*. A physical change to the home, which may be small or large in scale (Hazen & McCree, 2001), such as "architectural modifications (e.g., ramps, stair rails, and bathroom modifications) and major home renovations (e.g., roll-in shower and accessible bathroom)" (Stark, 2004a, p. 35).
6. *Health promotion*. The process of enabling people to increase control over, and to improve their health ("The Ottawa Charter for Health Promotion," 1992).

7. *Health promotion behaviors*. Behaviors implemented by individuals to promote self-reliance and increase optimal well-being (Huang, Chen, Yu, Chen, & Lin, 2002).
8. *Occupation*. “Daily activities that reflect cultural values, provide structure to living, and meaning to individuals; these activities meet human needs for self-care, enjoyment, and participation in society” (Crepeau, Cohn, & Schell, 2003, p. 1031).
9. *Occupational performance*. “The act of doing and accomplishing a selected activity or occupation that results from the dynamic transaction among the client, the context, and the activity” (American Occupational Therapy Association, 2008).
10. *Prevention*. “Education or health promotion strategies designed to help people avoid the onset and reduce the incidence of unhealthy conditions...or injuries” (Marjorie E. Scaffa, Van Slyke, & Brownson, 2008, p. 695).
11. *Well older adult*. A community-dwelling person ages 65 or older who is independent and living in a private home (Belza & Baker, 2000; F. Clark et al., 1997).

Rationale and Need for the Study

A main goal of occupational therapy is to help individuals participate in occupations and life roles that are meaningful to them (Letts, Baum, & Perimutter, 2003). This includes providing services to promote health and wellness to those who are at risk for developing impairments, activity limitations, or participation restrictions (Hussey, Sabonis-Chafee, & O'Brien, 2007). One method occupational therapists use to improve a

person's ability to participate in daily occupations is to adapt the features of the physical environment to make it better able to support an individual's performance within a particular context; this includes conducting assessments of the home environment and recommending home modifications (Dunn, Brown, & McGuigan, 1994).

Several theoretical models in occupational therapy view human performance as being affected by the interaction among the person, environment, and occupation (Letts et al., 2003). Each model purports that performance is influenced by the attributes of the person, the occupation in which he or she wishes to engage, and the environment in which the occupation is taking place. The occupational therapist considers each of these factors when providing services. As individuals age, it is important to consider changes that may be occurring in the body and how the physical environment may need to be modified to support an older adult's participation in desired occupations. Changing the home environment through modification can help to prevent injury and improve daily occupational performance (Newton, 2006; Stark, 2004a; Stark et al., 2009; T. Tse, 2005).

Given that the number of older adults in the United States is increasing and that many older Americans are choosing to stay in their homes, it is important for occupational therapists to understand how they can support this choice, also known as *aging-in-place*. The American Occupational Therapy Association's *Report on Aging* identifies the need for the profession to increase its focus on healthy aging, disability prevention, health promotion, and aging-in-place initiatives (Lysack, Fagan, Mallison, Peterson, & Rogers, 2007). Addressing these initiatives requires occupational therapists to understand well older adults' perceptions of home modifications and the decision-making processes and factors that influence implementation or non-implementation of

these modifications. Through this understanding, occupational therapists will increase their knowledge of why well older adults may or may not implement home modifications.

This new knowledge will expand occupational therapists' understanding of what is important to well older adults and thereby facilitate improvements in communication between therapists and these adults. This understanding will lead to improved methods of educating well older adults as to the merits of home modifications. Equipped with this knowledge, well older adults can make a more-informed decision as to whether a home modification is right for them and if a home modification will help them remain in their homes as they age by improving the fit between their capabilities and their environment.

Study Assumptions

1. Well older adults are motivated to obtain optimal occupational performance.
2. The environment has an influence on personal behavior, and personal behavior can influence the environment.
3. Successful occupational performance requires an optimal fit among the person, environment, and desired occupation.
4. Study participants were truthful during the screening process and during data collection.

Study Limitations

1. Study participants were all White, well educated, and in the middle to upper-middle socioeconomic range. This lack of diversity in the study sample was unexpected.
2. Study participants were limited to those who could speak English, as this researcher speaks only English.

Chapter 2: Selected Review of the Literature

Introduction

There is growing evidence that older adults want to remain in their homes as they age (Filion et al., 1992; He et al., 2005; Love, 2010; Tenenbaum, 2007; Wagnild, 2001). Changes to the body caused by the normal aging process can make this difficult, with older adults at risk for developing difficulty performing daily activities and for experiencing potential injury. Making modifications to the home environment can reduce and prevent accidents, make the home safer, and increase older adult independence within the home ("Home Modification," n.d. ; Newton, 2006; T. Tse, 2005). Following primary prevention strategies, well older adults would benefit from implementing home modifications.

It is therefore important to examine studies involving older adults to ascertain what contributes to well older adults' decision whether to make modifications to their homes. As the older adult population will continue to increase substantially in the coming years, it essential to understand the factors that influence well older adults' decision to make or not make home modifications so that ultimately services can be developed to facilitate successful aging-in-place for well older adults.

The literature review begins with a description of the theoretical lens guiding this study, followed by an examination of the literature related to the importance of home to older adults. Next, the topic of older adult home modification is explored, which includes quality of life, benefits of home modification, use of modification relevant to aging-in-place, and older adult use of adaptive equipment. This is followed by an examination of the literature related to older adult health beliefs, health literacy, and

decision-making. Finally, the role of occupational therapy in health promotion and prevention is explored.

Theoretical Lens

The Person–Environment–Occupation (PEO) model (Law et al., 1996) from the field of occupational therapy served as the overarching theoretical lens guiding the focus of this study. Occupational therapy involves using everyday meaningful activities in a therapeutic manner to improve the ability of an individual or group to participate in desired roles and situations in realistic settings such as the home or community (Hussey et al., 2007). One focus of occupational therapy is to promote the health and wellness of individuals so that they are able to participate in their everyday life activities and to improve their well-being and quality of life (Hussey et al., 2007). In recent years, this focus has included helping older adults remain in their homes as they age.

Occupational therapists must consider many human and environmental factors when providing services. Accordingly, occupational therapy researchers use theoretical models that provide a guide for systematically considering the multiple factors influencing well older adults' ability to age in place. This researcher intended to identify factors of the person that contribute to his or her use or non-use of home modifications, which may contribute to successful occupational performance. The researcher used the PEO model to broadly guide her view of the factors and conditions that contributed to well older adult decision-making concerning whether to implement home modifications. These included factors incorporating the person, environment, or occupation or the transaction of two or more of those constructs.

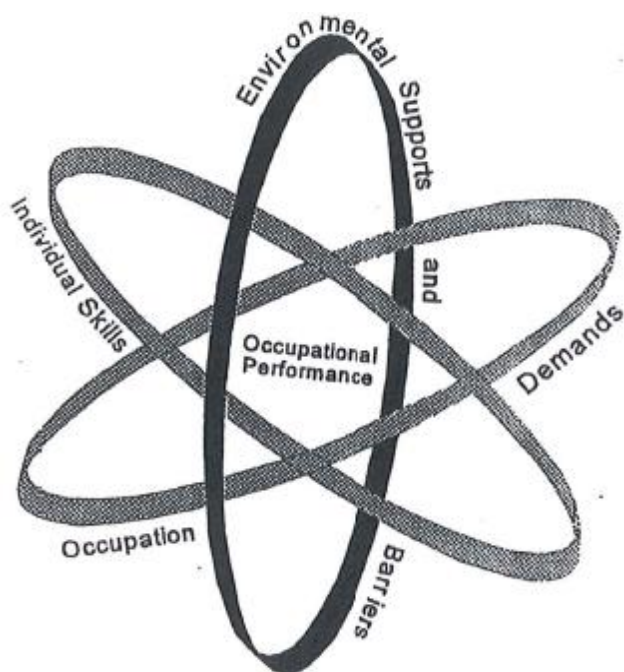
The PEO model was developed by Law et al. (1996) as part of an environmental research program in the School of Science at McMaster University. The development of the model was influenced by the *Occupational Therapy Guidelines for Client-Centered Practice* (CAOT, 1991), by Canadian guidelines for occupational therapy practice and approaches to measurement, by the theory of environmental press (Lewin, 1933), by the theory of flow (Csikszentmihalyi & Csikszentmihalyi, 1988), and by ecology and the aging process theory (Lawton & Nahemow, 1973). The PEO model views the person as a unique composite of a mind, body, and spiritual factors, with life experiences and attributes that influence occupational performance. Major concepts of PEO include the person, the environment, occupations, and occupational performance (Law et al., 1996).

According to the PEO model, the ability of a person to engage in *occupational performance* (i.e., things a person needs, wants, or is expected to do) is influenced by a continuous interdependence of the person, the environment, and the occupation in which the person chooses to engage. In this model, the *person* is seen as a unique individual composed of mind, body, and spiritual elements. The person may assume multiple roles at any one point in time.

In the PEO model, the *environment* is widely defined to include social and cultural elements as well as the physical environment. The environment is dynamic and can have either an enabling or constraining effect on occupational performance (Law et al., 1996). The environment or person's abilities may shift, requiring a change in behavior to achieve optimal occupational performance. Home modifications involve a change to the physical environment that improves occupational performance by providing a better match between personal ability and physical environment.

Occupations include all those activities and tasks in which a person engages during the course of daily living. Occupations are a necessary element of living, vital to health and well-being. The PEO visual model developed by Law et al. (1996) (Figure 1) depicts the elements of person, environment, and occupation as interconnected circles in which the overlap of the circles represents occupational performance.

Figure 1. Person–Environment–Occupation Model

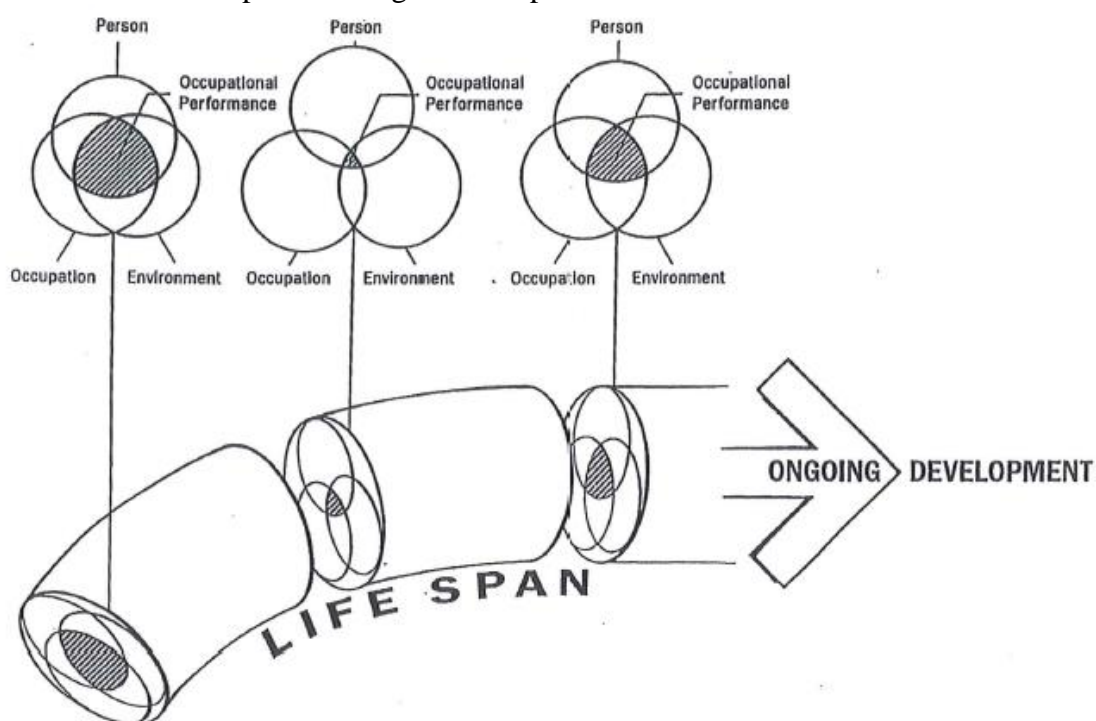


Reprinted from Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The Person–Environment–Occupation model: A transactive approach to occupational performance. *Canadian Journal of Occupational Therapy*, 63(1), p. 15. Copyright © Sage Publications. Used with permission.

The success of an individual’s occupational performance is influenced by the dynamic and continual transaction of person, environment, and occupation over time. As the components become more congruent, greater overlap among them occurs,

contributing to successful occupational performance (Law et al., 1996). Throughout the lifespan, the overlap among person, environment, and occupation is dynamic, as occupational performance may be optimal at one point in life but less so at other points. Law et al. (1996) depicted an example of change in occupational performance over time, as shown in Figure 2.

Figure 2. PEO: Example of Change in Occupational Performance Over Time

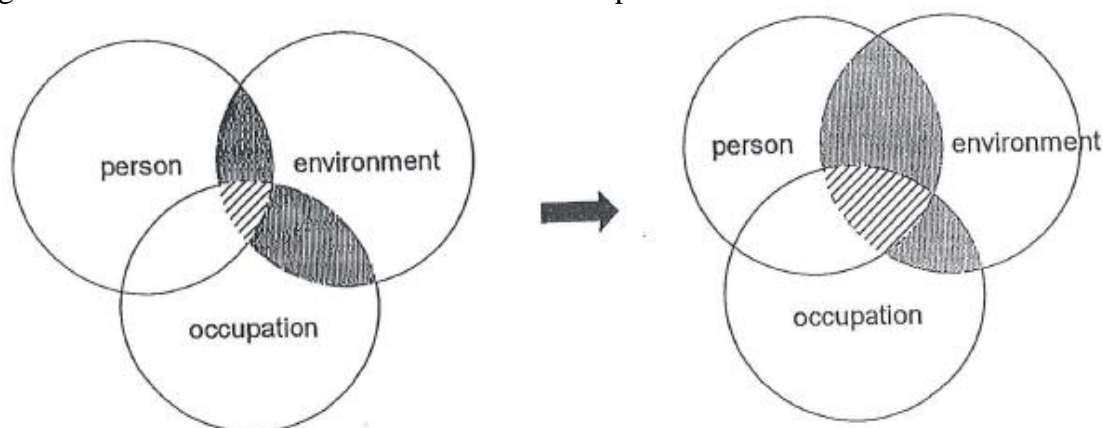


Reprinted from Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The Person-Environment-Occupation model: A transactive approach to occupational performance. *Canadian Journal of Occupational Therapy*, 63(1), p. 15. Copyright © Sage Publications. Used with permission.

For instance, there is risk of the components of the model becoming less congruent due to sensory and physical changes that occur as a result of the aging process (Christenson, 1990). A lack of congruence between the person and environment components in older adults will result in decreased occupational performance, affecting

the ability to successfully age in place. Home modifications to the physical environment improve the person–environment congruence, thus contributing to successful occupational performance, as depicted in Figure 3.

Figure 3. Effect of a Home Modification on Occupational Performance



Reprinted from Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The Person–Environment–Occupation model: A transactive approach to occupational performance. *Canadian Journal of Occupational Therapy*, 63(1), p. 18. Copyright © Sage Publications. Used with permission.

Using the PEO model helped this researcher understand how the participants' person, environment, and occupation factors influenced the decision whether to make home modifications.

The PEO model is useful to understand how the transaction among person, environment, and occupation affect occupational performance. When the congruence among the elements is not optimal, occupational performance is decreased, indicating a need for change in one or more of the elements. In addition, this model is useful for understanding the factors that affect well older adults' ability to age-in-place and for framing this researcher's view of the factors that affect the decision about making home modifications. Older adults who want to age-in-place have a desire to remain in their

home. Understanding why older adults want to remain in their homes as they age requires an examination of why home is important to them.

Importance of Home to Older Adults

The following three studies were part of the larger ENABLE–AGE Project involving Sweden, Germany, the United Kingdom, Hungary, and Latvia (S. Iwarsson, Sixsmith, Oswald, Nygren, & Sixsmith, 2005). One component of the ENABLE–AGE Project is the qualitative ENABLE–AGE In-Depth Study that used the project themes of aspects of the home environment, autonomy, well-being, and participation to guide in-depth interviews using a grounded theory approach. The first two studies addressed here used a sample of 40 participants from the ENABLE–AGE Project, while in the third study the researchers interviewed 8 of those 40 participants more in depth concerning the topic of participation.

The purpose of the first study was to explore the concept of independence in the home as experienced by very old people in Sweden (Haak, Fänge, Iwarsson, & Ivanoff, 2007). Participants were 40 community-dwelling individuals between ages 80 and 89 years who lived alone. Fifteen participants were independent in personal ADLs, 25 were dependent in instrumental ADLs (IADLs), and 6 of the 25 were dependent in both ADLs and IADLs. All interviews were conducted during home visits, taped, and transcribed verbatim. The researchers also recorded field notes after each interview.

The core theme derived from the interviews was home as a signification of independence in two main categories: (a) struggle for independence and (b) governing daily life. Home symbolized a place necessary for maintaining independence, although there was a constant struggle to remain independent by managing daily activities in the

way they had always been done despite functional decline. Participants gave up certain activities; expressed a strong will to perform various activities without technical aids for fear of becoming dependent on them; and expressed that a supportive home environment, or a usable home, was essential for independence (Haak, Fänge, et al., 2007). Although this study was conducted in Sweden and targeted only the very old, the results are still applicable to this researcher's study, as a key finding was that independence in daily life is strongly linked to the home and home environment.

The second study to come from the ENABLE-AGE Project explored aspects of the meaning of home as experienced by very old people in Sweden living alone (Dahlin-Ivanoff, Haak, Fänge, & Iwarsson, 2007). The researchers used the same methodology, sample, and methods as described in the previous study. The main theme the researchers found was that home has a central place in the lives of very old people. Two key categories of this theme were (a) home means security and (b) home means freedom. The researchers illustrated the importance of home to very old people as characterized by an atmosphere of warmth and comfort, in addition to having freedom in one's own space.

In the third study, 8 participants from the larger project were interviewed to explore participation in relation to home as experienced by very old people in Sweden (Haak, Ivanoff, Fänge, Sixsmith, & Iwarsson, 2007). Participants were purposefully selected to include the most information-rich and articulate cases. Five participants were independent in IADLs, 3 were dependent in IADLs, and 1 was dependent in both ADLs and IADLs. Interviews were conducted during home visits, and field notes were made immediately after each interview.

The researchers identified the core theme of this study as home as the locus and origin for participation. “When possibilities for participation in activities outside the home become restricted, having a familiar context as a daily base created links to the outside world and thus enhanced experiences of participation” (Haak, Ivanhoff, et al., 2007, p. 100).

These three studies identified the importance of home to older adults for independence, security, freedom, and participation, signaling possible reasons for older adults’ desires to grow old in their own homes. This desire to age-in-place and maintain one’s current level of activity is important to older adults and has implications for quality of life. In the following section, the researcher will present literature concerned with how home modifications can contribute to successful aging-in-place and quality of life.

Home Modification and Older Adults

There is a wealth of literature about various aspects of the association between home modification and older adults, including the impact on quality of life, benefits, and use. An examination of each area will further the reader’s understanding of how home modifications can affect the lives of older adults.

Aging-in-Place and Quality of Life

Place, in the phrase *aging-in-place*, refers to physical and social environments. Older adults’ desire to age-in-place is connected to both. Chippendale and Bear-Lehman (2010) discussed these aspects and identified two primary factors for successful aging-in-place: (a) social capital and (b) the physical environment. *Social capital* is defined as social networks and social resources. A large social network facilitates successful aging-

in-place (Chippendale & Bear-Lehman, 2010). The *physical environment* consists of the home and the neighborhood.

Both social capital and the physical environment are discussed in the studies below addressing the relationship between aging-in-place and quality of life. Before addressing those studies, it is worthwhile to examine Chippendale and Bear-Lehman's (2010) view of the physical home environment as related to aging-in-place. They note that many older adults develop chronic conditions that negatively affect occupational performance within the home, resulting in the need for a health promotion and prevention model. This model incorporates an adaptive approach to eliminate environmental barriers. This approach, which includes the use of home modifications, is ideal to facilitate aging-in-place (Chippendale & Bear-Lehman, 2010).

Having few environmental barriers can contribute to successful aging-in-place and quality of life, according to Oswald et al. (2007). This study's participants were from the ENABLE-AGE Project presented previously. The purpose was to explore how objective and subjective aspects of housing are related to healthy aging in the very old. Participants living in accessible homes who perceived their homes as useful were independent in daily activities, had better well-being, and experienced fewer depressive symptoms (Oswald et al., 2007). Furthermore, environmental factors, including barriers, were related to negative health events such as falls but also were related to positive health-related outcomes such as independence in daily activities and subjective well-being.

Two additional studies addressed the relationship between the social and physical environments and quality of life. Oswald, Joppa, Rott, and Wahl (2011) investigated life

satisfaction among 381 community-dwelling older adults, and Perez, Fernandez-Mayorales, Rivera, and Abuin (2001) examined older adults' perceptions of residential satisfaction and identified predictors of this satisfaction that determine quality of life. Oswald et al. (2011), not surprisingly, found strong differences in functional abilities between the young-old and old-old in their study but found that both groups related neighborhood quality and a subjective attachment to the neighborhood to higher life satisfaction. For both groups, perceived housing accessibility and housing comfort had no explanatory value for life satisfaction (Oswald, Jopp, Rott, & Wahl, 2011). In contrast, Perez et al. (2001) found several predictors of residential satisfaction related to the home, including satisfaction with home-related attributes (e.g., comfort, size, layout), comfort of the kitchen and bathroom, and availability of space in the home. Perez et al. also found many predictors of residential satisfaction related to the neighborhood, including environmental quality and accessibility of services. The authors concluded that those factors contributing most significantly to residential satisfaction were subjective and able to be modified, so adapting the environment could facilitate residential satisfaction, aging-in-place, and quality of life (Perez, Fernandez-Mayorales, Rivera, & Abuin, 2001).

The previous studies illustrate that social capital and the physical environment contribute to quality of life for those aging-in-place. Although housing accessibility and comfort were not predictors of life satisfaction in the Oswald et al. (2011) study, both Oswald et al. and Perez et al. (2001) found the opposite, proposing that older adults' housing environment is related to life satisfaction and that elimination of barriers through home modification can facilitate successful aging-in-place. In addition to making aging-

in-place more successful, older adults may gain other specific benefits by implementing home modifications.

Benefits of Implementing Home Modifications

Fänge and Iwarsson (2005a) used a longitudinal design to investigate changes in ADL dependence and aspects of home usability among individuals receiving housing modification grants in Sweden. Data were collected on home visits on three occasions, including (a) baseline (no more than 1 month prior to modification), (b) first follow-up (2–3 months after modification completion), and (c) second follow-up (8–9 months later). A total of 131 participants with a mean age of 71 years participated at baseline, 104 participants at first follow-up, and 98 participants at second follow-up. The housing modifications targeted bathrooms, entrances, stairways, and doors (Fänge & Iwarsson, 2005b).

Instruments used included the ADL Staircase, Revised Version (Iwarsson & Isacson, 1997) to measure ADLs and IADLs and the Usability in My Home instrument (Fänge & Iwarsson, 2003) to capture various aspects of usability. Findings revealed no significant changes in overall ADL dependence, but fewer clients were dependent in bathing from first follow-up to second follow-up. Participants also reported that their housing environment supported their daily activities to a greater extent at second follow-up than at first follow-up .

The authors asserted several conclusions about the study results. They attributed the lack of significant change in overall ADL dependence to a lack of statistical power in the study, noting that small changes in ADL performance may not have been detected. Most adaptations targeted the bathtub or shower; this explains the finding that fewer

clients were dependent in bathing from first to second follow-up. In addition, Fänge and Iwarsson (2005b) asserted that many participants faced rapid declines in function, and therefore a particular housing adaptation may have been effective only for a short time. Overall, the researchers could have improved the study methodology by using measures that were more sensitive to detecting change in ADL dependence.

Using the same sample and measurement, Fänge and Iwarsson (2005a) investigated longitudinal changes in housing accessibility and usability. Instruments included the Usability in My Home instrument (Fänge & Iwarsson, 2003) and the Housing Enabler (S. Iwarsson, 1999) to examine accessibility problems. They found a significant improvement in housing accessibility, a highly significant decrease in environmental barriers, and an improvement in the physical environmental aspects of usability (Fänge & Iwarsson, 2005a). These studies are relevant to the current study, as they indicate that home modifications can improve independence in ADLs, prevent a decline in occupational performance, and provide a supportive environment for engagement in daily activities.

Niva and Skar (2006) conducted a pilot study to describe the activity patterns of 5 elderly individuals and their views about the accessibility and usability of their homes before and after receiving home modifications. The authors used a single case study design and collected data immediately after assessment for home modification, 5 days after modification, and 10 weeks after modification. Participants were ages 70 to 83 years, with neurological and pain disabilities who lived in their own homes and who had previously been determined to be in need of housing modification. Participants were recruited from a primary health care center in northern Sweden. Instruments used

included the Accessibility in My Home questionnaire (Fänge & Iwarsson, 1999) and the Occupational Questionnaire (Kielhofner, 2002). Results indicated that accessibility improved inside the homes, with scores on the accessibility questionnaire averaging 4.4 on the first rating and 6.7 on the second rating on a scale of 1 to 7, where 1 indicates the *lowest accessibility* and 7 the *highest accessibility* (Niva & Skar, 2006). Accessibility also improved in outside areas, which was rated 3.9 prior to modification and 5.8 after modification. Perceived performance of daily activities also improved. Four participants rated their performance as well and 1 as very well prior to modification; 4 participants rated their performance as very well and 1 as well after modification. Participants also reported a change in activity patterns to include new activities. Although the sample size of this study was small, the results indicate that the ability to carry out daily activities can improve if the home environment is modified to fit the person's needs (Niva & Skar, 2006).

Petersson et al. (2009) used a longitudinal, quasi-experimental, pretest/posttest design to investigate the effects of home modifications on difficulty in daily life for people aging with disabilities. Participants were recruited from a local Agency for Home Modification in Sweden. The sample consisted of 74 participants in the intervention group and 29 in the comparison group. The difference in numbers between the groups is a result of some individuals initially assigned to the comparison group receiving their home modification prior to the end of data collection and therefore were unable to be used as a comparison. Participants were community-dwelling, in need of home modification, and had a mean age of 75 years. The Client–Clinician Assessment Protocol (C–CAP) (Petersson et al., 2009) was the main outcome measure of the study.

The study resulted in two major findings: (a) home modifications can reduce a person's perceived level of difficulty in daily life, and (b) difficulty performing daily tasks increases each month while waiting for implementation of a home modification. A limitation noted in the study is the newness of the C-CAP, although it was considered the best available instrument at the time of the study (Petersson et al., 2009). Even with this limitation, the study provided another piece of evidence highlighting the importance of home modifications for improving occupational performance in daily tasks.

Stark et al. (2009) undertook a study to describe a client-centered occupational therapy intervention program and to examine the impact of that program on daily activity performance over time. The authors used a quasi-experimental design to conduct a single-group pretest/posttest/post-prospective study over a period of 2 years. Lawton's Ecological Model of Aging (Lawton & Brody, 1969) was used as a foundation for the program.

The study was conducted in a naturally occurring retirement community in the St. Louis area. Eighty participants were enrolled in the study using a convenience sample. Due to attrition at each point of data collection, 77 completed the pretest at baseline, 67 participated in the 3-month post-intervention follow-up, and 37 participated in the 2-year follow-up. The mean age of the sample was 81.7 years, with a range of 61 to 95 years. Participants were excluded if they had cognitive deficits. Seventy-five percent of participants lived in a condominium, and 90% reported using an assistive device for mobility.

Outcome measures included (what is now) the In-Home Occupational Performance Evaluation (Stark, Somerville, and Morris, 2010), which includes measures

of performance and satisfaction with performance, and the FIM™ (UDSMR, 1993). The program used client-centered treatment principles and was designed to improve the fit between the environment and functional limitations of the individual by reducing environmental barriers. The intervention consisted of assessment by an occupational therapist followed by provision of home modifications, including adaptive equipment, architectural changes, major home renovations, and training in using “compensatory supports and strategies during daily activities” (Stark et al, 2009, p. 239).

The participants identified 719 activities they had difficulty completing and 100 activities they had given up. Through the intervention, the authors were able to address an average of 3.9 problems per participant. Satisfaction improved significantly from baseline to the first follow-up and decreased slightly from the first follow-up to the 2-year follow-up. Performance also significantly increased from baseline to the time of first follow-up, with no change noted from first follow-up to the 2-year follow-up. Functional independence, as determined through the FIM (UDSMR, 1993) score, increased significantly from baseline to the first follow-up. These results indicated that older adults who are aging-in-place could improve their functional independence and satisfaction with their occupational performance through the implementation of home modifications.

As illustrated in the previous studies, the implementation of home modifications can result in changes to the lives of older adults. These changes include improvements in perceived abilities, functional independence, increased participation in daily activities, and an increase in patterns of occupational performance. The researchers also highlighted the importance of a good fit between the environment and the older adult to facilitate successful aging-in-place. Relevant to the current study, these findings indicate

that through proper pre-planning and attention to person–environment–occupation fit, well older adults can prevent home accidents and improve their chances for successfully aging-in-place.

Older Adult Use of Home Modification Related to Aging-in-Place

The studies presented in this section focus on community-dwelling older adults who are attempting to remain in their homes as they age. The authors address how the use of home modifications is related to successful aging-in-place.

A study conducted by Filion et al. (1992) explored this issue from an elderly housing planning perspective as they compared principal perspectives on housing for an aging population with the housing choices and preferences of community-dwelling older adults. The traditional approach to housing needs for the elderly offered only two choices, (a) remaining in the home or (b) moving to an institution, when environmental demands outweighed abilities. The authors presented other models offering intermediate steps between home and institutionalization that involved adapted housing, support services, and design alterations. These models are consistent with Lawton's Ecological Model of Aging (Lawton & Nahemow, 1973) which was influential in the development of the PEO model.

Data for this study were taken from a 1987 survey of living environment decision-making among older adults. Participants were 280 community-dwelling individuals ages 75 or older. The specific measures used in the study were not stated; however, the researchers conducted interviews with each participant that produced data about the individual's physical capacity, satisfaction with current housing circumstances, and current adaptations to declining abilities. Filion et al. (1992) found that participants rated

their health status as fair to poor and that 87% of respondents intended to remain in their homes, although only 14% reported having made some minor home modification and 66% anticipated no future adaptations. Reasons for lack of action included participants' (a) feeling comfortable or content, (b) living day by day, (c) not wanting to consider change, and (d) refusing to think about the future.

This study demonstrates that although older adults desire to remain in their homes, they often do not plan how to do so. Caution is needed when applying the results of this study to the current study, as the majority of participants had classified themselves as being in poor to fair health rather than as well.

In a related study, Wister (1989) also used Lawton's Ecological Model of Aging (Lawton & Nahemow, 1973) to study if older adults likely to experience some health deterioration had made or intended to make an environmental adaptation to their homes. This study used the same data set as described in Filion et al. (1992); however, Wister used different measures within that data. These measures included information about environmental change, a Likert-type health status and attitude scale, social support, and living arrangement.

Eighty-five percent of the participants reported that they had made no changes to their homes that would "help them cope with everyday living" (Wister, 1989, p. 279). In addition, 65% of individuals stated that they did not spend time thinking about changes to their environment. Of the 94 respondents who did contemplate some change in the home, the type of change involved having extra help in the home or moving to an apartment or first-floor living arrangement rather than physical modifications (Wister, 1989).

Wister (1989) concluded that the participants in the study engaged in a process of psychological adaptation to the environment to a much greater degree than making a physical change to that environment. Generally, psychological adaptation involves acceptance of health-related difficulties, a change in perception of what constitutes acceptable living conditions, a skewed view of one's remaining lifespan, and a denial of deteriorating capacity. Wister suggests that as people grow older and experience physical changes and declining abilities, they accept these changes and limitations rather than make a change to the environment that could minimize or eliminate the limitation.

In another study, Wagnild (2001) studied residential preferences among older adults. A packet of questionnaires was sent to a random sample of 1,775 community-dwelling older adults who were members of a large newsletter organization located in the Northwest. Forty-three percent of the packets were anonymously returned, resulting in a sample size of 776 individuals ages 55 to 93 years. Most of the participants graduated from high school, and many had attended college. Wagnild used several instruments, including a self-rating of health, life satisfaction scale, functional health status, preferred residence through aging, and perceptions of barriers to aging-in-place. The majority of the participants reported having a high rate of life satisfaction, and 84% reported having good to excellent health.

The researcher found that 68.4% of participants planned to stay in their current homes; of those who reported being very satisfied with their lives, 94% planned to stay in their home. Interestingly, of the 531 individuals planning to stay in their homes, 32.3% did not know what they could do to make aging-in-place possible for them or simply planned to do nothing; 23.3% did not respond to the question (Wagnild, 2001). Other

participants made minor modifications such as installing a grab bar or ramp and obtaining assistance with household maintenance. Although most adults in this sample intended to stay in their homes, they did not intend to make any home modifications to make that possible or did not know what modifications to implement. This lack of knowledge and action to improve their chance of success with aging-in-place is surprising, because the sample as a whole was an educated group.

Naik and Gill (2005) studied the incidence and use of home modifications and assistive devices for bathing in community-dwelling older adults with and without bathing difficulties. Participants were members of a larger longitudinal study of 754 adults ages 70 or older who were recruited from a large health plan. Data included a self-assessment of bathing ability and an environmental evaluation of each participant's bathroom completed by a team of trained research nurses.

Results indicated that modifications for bathing were relatively uncommon in the homes of those with and without bathing difficulties; the most common adaptations were nonskid mats or abrasive strips. The researchers concluded that the limited use of bathing assistive devices or modifications was because the devices or modifications were not available to the older adults in this study. They speculated that this lack of availability was the result of health care providers failing to prescribe the devices or modifications and the failure of older patients to request environmental modifications. Older patients may lack an awareness of the benefit of modifications, may lack resources, or may be concerned about the possible stigma associated with modifications (Naik & Gill, 2005).

Yuen and Carter (2006) conducted a pilot study related to fall prevention to identify the variables that predicted intention to implement home modifications among

community-dwelling older adults who had a history of falling. Participants were community-dwelling, ambulatory older adults ages 60 years or older who were cognitively alert and who had experienced at least one fall in the past year. The primary researcher developed a questionnaire using a Likert-type scale and open-ended questions. The questionnaire was designed to provide information about actions related to preventing future falls and plans to make any changes to the home environment as the result of a previous fall. The Perceived Control Over Falling Scale was also administered to gather information about respondents' perceived control over fall prevention in the environment. Of 128 questionnaires completed, 87 were deemed to be valid.

The researchers found that older adults had greater intention to make home modifications (a) if they think that these modifications will reduce falls or (b) if they have made previous fall prevention adaptations (Yuen & Carter, 2006). The researchers took a step toward identifying the factors involved in older adults' willingness to make home modifications but focused only on modifications for fall prevention.

Johansson, Lilja, Petersson, and Borell (2007) examined the relationship among ADL performance, assistive device use, and housing or living situation to a requested home modification. This study was conducted in Sweden, where individuals can apply for grants from local municipalities for home modifications. Participants were recruited from the Agency of Home Modifications, which is responsible for handling grant applications. To meet the inclusion criteria, participants had to be ages 40 or older, living in their own home, and have an active application for home modification. Participants were excluded if they had cognitive limitations, depression, or extreme fatigue.

The study included 102 participants who had a mean age of 74 years; two-thirds of the sample was female. The participants had medical problems related to neuromusculoskeletal and movement issues, heart disease, and respiratory problems. Participants most commonly applied for home modifications related to bath or shower followed by automatic door openers. The researchers used the FIM (UDSMR, 1993) to measure functional level in ADLs, obtained a medical history, and used a client–clinician assessment protocol to collect data concerning perceived levels of difficulty in ADLs.

The results revealed that study participants independently performed activities related to the desired area of home modification but did so with great difficulty. Participants also reported using assistive devices largely in activities relating to the area of requested home modification. The authors interpreted this to mean that home modification is a solution resorted to when environmental barriers and difficulties remain after assistive devices have been tried (Johansson et al., 2007).

Kruse et al. (2010) used a grounded theory approach to determine older adults' attitudes toward fall risks and home modification to alter these risks. Ten adults between ages 60 and 90 years with varying physical abilities participated; 9 of 10 participants reported experiencing a fall. The researchers conducted a falls risk assessment and interviews with each participant, noted household falling hazards, and made suggestions for eliminating the hazards. Four themes emerged: (a) unwillingness to change, (b) denial that hazards exist, (c) conflict between recognizing the limitations of aging and actually being considered as “old,” and (d) fear of falling not an important motivator for improving safety in the home. Kruse et al. (2010) concluded that these participants believed falls were unavoidable; hence, home modification would not prevent a fall.

This study focused on attitudes of older adults toward home modifications exclusively for fall prevention, which is useful to inform this dissertation but has a narrower focus than this research. In addition, the investigators made recommendations for home modification as part of the data collection process. The researchers reported that this had a negative impact on how the participants viewed the researchers' motives and resulted in participants being unwilling to make the recommended changes.

Additionally, Hwang, Cummings, Sixsmith, and Sixsmith (2011) conducted a study to analyze the relationship between home modification and aging-in-place. The researchers used the United Kingdom sample from the ENABLE-AGE Project, described earlier in this dissertation. Participants were 376 community-dwelling individuals ages 81 to 91 years. The dependent variable was aging-in-place, measured by length of time living in current residence. Independent variables were demographic characteristics; health-related characteristics; ADL and IADL ability; and housing characteristics, including housing type, owning versus renting, and completed home modifications (Hwang, Cummings, Sixsmith, & Sixsmith, 2011). In this sample, 71.2% of participants owned their homes, and 36% had made home modifications.

Hwang et al. (2011) found that home modifications were performed more often by homeowners and individuals living in single-family homes; home modifications and housing type were the most important variables contributing to length of time in the current residence. When the authors controlled for other variables, the home modification variable emerged as a significant predictor for aging-in-place. None of the demographic or health-related variables were statistically significant predictors. In conclusion, Hwang

et al. asserted that home modifications contribute positively to older adults' ability to age in place.

The studies reviewed above addressed if and how older adults use home modifications and how that relates to aging-in-place. Collectively, the results of the studies indicate that, although many older adults desire to stay in their homes as they age, they may not take preemptive measures to ensure that happens. In addition, even though home modification is an important predictor of aging-in-place success, older adults may not consider what they need to do to make aging-in-place possible, may not be aware of available home modifications, may not understand how to make these modifications, or may think that home modification is a last resort once all other options have been exhausted.

Older Adult Use of Adaptive Equipment

An understanding of well older adults' decision whether to implement home modifications requires an examination of a related topic: older adult use of adaptive equipment. In this section, the researcher will present studies that focused on factors that affect older adults' use of adaptive equipment and how older adults benefit from using adaptive equipment in their homes. This literature is important to inform the current study, because how older adults use and think about adaptive equipment may be closely related to how they use and view home modification.

Gitlin, Schemm, Landsberg, and Burgh (1996) investigated older adult adaptive equipment use in individuals who had been hospitalized, who underwent rehabilitation, and who were then discharged to home with at least one piece of adaptive equipment. The researchers were interested in the use of assistive devices in the first 3 months

following discharge as well as the factors that predicted home use. Participants were recruited over a 20-month period from two rehabilitation hospitals; were ages 55 years or older; and had a primary diagnosis of cerebrovascular accident, orthopedic deficit, or lower-limb amputation. All participants were cognitively intact. Although 250 participants were eligible for the study, only 86 completed all phases of the study, which included personal interviews 5 days prior to hospital discharge and at 1-, 2-, and 3-month intervals following discharge to home (Gitlin, Schemm, Landsberg, & Burgh, 1996).

The researchers used multiple measurement tools, including the FIM (UDSMR, 1993), as a factor of objective need of adaptive equipment and a 5-point scale to measure the subjective measure of need, including expectation of device use. The researchers also measured factors enabling device use with a version of the Philadelphia Geriatric Morale Scale (Lawton, 1975) and measured subjective evaluation of assistive devices and disability using select items from the Reinforcement Motivation Survey (Bruno, 1993). They categorized over 100 types of low-technology assistive devices into six categories: (a) mobility, (b) dressing, (c) bathing, (d) seating, (e) feeding, and (f) grooming. Through data analysis, Gitlin et al. (1996) learned that 642 participants used assistive devices in the home. In the first month following discharge to home, 50% of the devices were being used frequently or constantly; 3% were reported in occasional use; and 47% were seldom or never used. The pattern of use remained relatively stable over the 3-month period post-discharge.

When examining predictors of adaptive equipment use, the researchers found that the participant's expectation to use and a positive evaluation of the device correlated positively with device use (Gitlin et al., 1996) This means participants who thought they

would use the device when interviewed 5 days prior to discharge and thought positively about the device were more likely to use the device at 1, 2, and 3 months following discharge. Finally, the researchers examined if any participant characteristics determined device use. In fact, diagnosis was the only characteristic close to reaching statistical significance. Most consistent users by diagnoses were older adults with lower-limb amputations, orthopedic deficits, or cerebrovascular accident.

Overall, the Gitlin et al. (1996) study was well done, as the researchers had a good sample size, used multiple instruments, and conducted appropriate statistical analyses. The researchers, however, did not have equal numbers of participants with each diagnosis. This may have affected the results. This study indicates that adaptive equipment use in older adults discharged from inpatient rehabilitation is influenced by how effective the individual believes the device will be and if the individual believes he or she will use the device at home.

Kraskowsky and Finlayson (2001) conducted a systematic review of the literature of adaptive equipment and older adults from 1980 to 1988. The purpose of the study was to discover the similarities and differences in the findings of studies about adaptive equipment use among older adults. When reviewing the studies, the authors used the terms *adaptive equipment*, *adaptive device*, and *assistive device* interchangeably. They obtained articles using an electronic search in the health sciences and occupational therapy databases and by conducting manual searches of reference lists. Fourteen articles were located and then summarized using an appraisal matrix. The studies were predominantly cross-sectional; however, a few were longitudinal, and only 2 used an

experimental design. Overall, the studies provided no information on the health status of the older adults, and most participants were from hospitals or home health care.

Kraskowsky and Finlayson (2001) identified five major findings from the review of the 14 articles. First, the likelihood of having assistive devices increased with age and disability. Second, the factors found to be associated with assistive device use included age, gender, education, living arrangement, marital status, income, health condition, and length of time since hospital discharge. Device users were less educated, had lower incomes, and were less healthy. Third, the most frequently used pieces of adaptive equipment were bathroom aids. Fourth, greater use of adaptive equipment was significantly correlated with increased age. Finally, the most commonly identified reason for nonuse of equipment was unsuitability of the device, including ineffectiveness, misrepresentation, and equipment failure. The second most common cluster of reasons for nonuse was rejection of the device because it was too cumbersome, too time consuming, called unwanted attention to the individual, or fit poorly with the environment. This finding illustrates the importance of considering the person–environment fit as described in the PEO model (Law et al., 1996) when occupational therapists prescribe adaptive equipment to older adult clients.

In this review, the authors provided the reader with a good summary of the results of the 14 located studies and noted that many had not studied older adults with a specific level of health or disability (Kraskowsky & Finlayson, 2001) Many factors affect adaptive equipment use by a general population of older adults; some may act as barriers to use. Interestingly, the authors recommended that future research include a qualitative exploration of older adult personal motivators for using assistive devices.

Stark, Landsbaum, Palmer, Somerville, and Morris (2009) hypothesized that the use of a client-centered approach in providing adaptive equipment and modification recommendations would result in improved perceived performance and satisfaction with performance. Study participants were 29 low-income older adults classified as having a disability. A baseline interview included data collection using the FIM (UDSMR, 1993) to measure disability severity, the Canadian Occupational Performance Measure (COPM) to measure occupational performance, and the Environmental Functional Independence Measure to identify and quantify environmental barriers. Two occupational therapists completed the assessments. Based on the goals of the participants, as identified by the COPM, the therapists developed a plan to eliminate environmental barriers through use of assistive devices and environmental modifications (Stark et al., 2009).

A nonprofit agency provided the recommended modifications and adaptive devices, and an occupational therapist provided training in their use. The occupational therapist conducted a follow-up visit at 3- and 6-month intervals following implementation of the modifications. Twenty-nine participants did not receive modifications for various reasons; however, modifications were made for 16 participants. These 16 participants took part in the COPM for posttest data collection. On average, participants' perceived performance level increased from 3.19 to 7.81 (on a scale from 0 to 10, with 0 meaning *unable to perform* and 10 meaning *no difficulty performing*); satisfaction with performance increased from 2.25 to 7.69 (on a scale from 0 to 10, with 0 meaning *not satisfied at all* and 10 meaning *fully satisfied*). Stark et al. (2009) concluded that, by using a client-centered approach to eliminate environmental barriers, older adults

showed improvement in their perceived level of performance and satisfaction with performance.

Limitations of the Stark et al. (2009) study included the small sample size that decreased generalizability of the findings and that the adaptive equipment and modifications were not provided for all participants. This study is important though, as it used a client-centered treatment approach that focused on the clients' goals and the fit between the person and the environment as identified by environmental barriers.

The studies in this section indicate that older adult use of adaptive equipment is influenced by many factors, including training in use, fit with the environment, individual acceptance, and client involvement in choice. Also of note, older adult performance level and satisfaction with performance increased because of the use of a client-centered approach to providing adaptive equipment and home modification.

Older Adult Health Beliefs

It is useful to review pertinent literature related to older adult health beliefs and models of change to understand how health beliefs may influence a well older adult's decision to make or not make home modifications. Jensen, Counte, and Glandon (1992) examined the relationship among health beliefs, health attitudes, and health maintenance among older adults. The authors defined *health maintenance* or *health promotion* as "personal activities that are intended to enhance health and/or prevent disease and disability" (Jensen, Counte, & Glandon, 1992, p. 483). A conceptual model based on the Health Belief Model (Rosenstock, 1974) was used to examine predictors of variability of health maintenance activity among older adults.

Jensen et al. (1992) used data from the first phase of a larger panel study. Two purposive samples were selected. The first group consisted of older adults enrolled in a health maintenance organization; members of the second group were randomly selected from a list provided by a state agency. A total of 402 participants ages 62 or older were recruited. Participants were interviewed concerning their health maintenance behavior, health beliefs, and attitudes. Instruments included dichotomous questions and Likert-type scales to gather information related to use of preventive health services, engagement in health practices, safety practices, and environmental hazard avoidance. Health locus of control and vulnerability to disease were also assessed.

The researchers defined health locus of control in one of three ways: (a) internal health locus of control, (b) external locus of control–powerful others, and (c) external locus of control–chance. An individual with an *internal health locus of control* believes that health is affected mainly by personal actions. *External locus of control–powerful others* is the belief that family members or others have influence over the individual and influences the ability to stay healthy or become sick. *External locus of control–chance* occurs when the individual believes that fate, or what is meant to be, has a large role in determining the state of sickness or health.

Jensen et al. (1992) found that socioeconomic status, health status, and health knowledge were positively correlated with seeking preventive health care services, specifically preventive dental services. Also, those participants with a high internal health locus of control demonstrated higher scores related to general health knowledge and health motivation compared with those who had an external locus of control. In relation to health practices, higher scores were positively related to general health

motivation, internal health locus of control, health knowledge, and age. Safety practices subscale scores were positively correlated with an internal health locus of control and being male; however, scores were negatively correlated with perceived long-term vulnerability. Both the safety practices and health practices subscales were negatively correlated with a chance health locus of control. Results from the environmental hazard avoidance measure indicated a positive association with being female and having a powerful others health locus of control, which may suggest that environmental hazard avoidance behavior is heavily influenced by others such as spouses, adult children, or friends.

Jensen et al. (1992) concluded that intervention programs designed to increase health promotion and health maintenance behaviors of older adults need to target specific health beliefs and account for various social differences. A strength of this study is that it addressed many types of health promotion behaviors, including use of preventive health services and engagement in health practices, safety practices, and hazard avoidance. Even though the study is more than 10 years old, it still provides valuable information related to older adult health beliefs. Particularly, the finding that various types of health promotion behaviors are related to health locus of control, health knowledge, age, and gender suggests that these are some possible factors related to why well older adults may choose to implement home modifications.

In another study related to older adult health beliefs, Perrig-Chiello, Perrig, and Stahelin (1999) explored the health control beliefs in different age cohorts of older adults and examined the relationship among health control beliefs, objective and subjective health, and health behavior. Participants were 442 community-dwelling older adults

ages 65 to 94 years who were categorized as healthy; they were randomly selected from a remaining pool of participants from a longitudinal study that began in 1960. The researchers collected data for the 1999 study in 1993 and again in 1995 using a variety of measures.

To measure health control beliefs, the authors designed a 6-item questionnaire based on a three-dimensional locus of control model: (a) internality, (b) powerful others, and (c) chance health locus of control beliefs. Participants rated each item on a 3-point scale. Objective health was measured by blood pressure, pulse rate, cholesterol level, and heart rhythm. The researchers determined subjective health ratings by asking participants to answer yes or no to 11 frequent health complaints (Perrig-Chiello, Perrig, & Stahelin, 1999). Finally, health behavior was measured based on intensity of participation in sports activity and frequency of psychiatric drug use.

Perrig-Chiello et al. (1999) found that chance health control beliefs were the most frequent, followed by internality and powerful others health belief locus of control. Participants found to be objectively healthy, moderately healthy, or rather sick according to the objective health measures did not differ from each other concerning health control beliefs. Interestingly, those reporting the most complaints, the subjectively sick, had significantly lower internality scores than the moderately sick and the healthy. Therefore, the subjectively sick participants had a significantly higher chance health belief locus of control than the subjectively healthy or moderately healthy. The authors concluded that it is not how objectively sick a person is that determines the likelihood of a person having a chance health belief locus of control but instead how strongly the person feels sick. The

random assignment used in this study, sample size, and number and types of measures add to the credibility of the results.

Huck and Armer (1996) studied health beliefs, health practices, and health promotion behaviors of 50 elderly, Catholic nuns living in the rural Midwest. The participants, age 65 and older, were at various levels of independence in daily activities. Interestingly, many of the retired participants had served in a health related profession. Measurements included open ended questions, a Likert-type scale, and two standardized scales including the Multidimensional Health Locus of Control (Wallston, Wallston, & Devellis, 1978) and the Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987). All participants completed and returned all questionnaires. Data analysis revealed that the participants demonstrated a statistically significant tendency toward an internal health locus of control; chance health locus of control was lowest. The five most frequently named health maintenance and promotion behaviors were exercise, nutrition, contact with health care provider, recreation, and sleep (Huck & Armer, 1996). Although this study is interesting, its generalizability is weak because the researchers used a convenience sample. Also the fact that these women live together in a community and that many of them were previously health professionals make the results less applicable to the general older adult population.

Wang (1999) examined the similarities and differences in predictors of health promotion lifestyle among three ethnic groups of elderly women residing in Taiwan. A convenience sample of 599 noninstitutionalized elderly women ages 65 or older was used; however, only 391 of the women completed all interview questions. Measurements were developed by the researcher and included the Health Promotion Lifestyle (HPL),

Perceived Health Status (PHS), Perceived Benefits of Health Promotion Lifestyle (PBeHPL), and the Perceived Barriers to Health Promotion Lifestyle (PBaHPL) (Wang, 1999). Community nurses used a survey–interview method to collect data.

A main finding of this study was that PBaHPL was a significant predictor of HPL among the ethnic groups. The identified perceived barriers to a health promotion lifestyle included lack of exercise due to inconvenience, of proper nutrition due to poor dentition, of food sources, of money, and of transportation. Education and PBeHPL were significant predictors of HPL in two different groups. Living arrangement, age, and number of chronic health problems were also significant predictors of HPL.

Unlike previously mentioned studies (Huck & Amber, 1996; Perrig-Chiello et al, 1999), Wang (1999) did not measure health locus of control. Based on the knowledge gained from those studies, it would be of interest to understand how health locus of control is related to health promotion behaviors. Do women with a higher PBaHPL have an internal or powerful others locus of control? Do women with higher education levels and PBeHPL have an internal locus of control? Limitations of Wang’s study included the use of a convenience sample and specific ethnic groups that decreases the generalizability of the study results.

Bentley (2003b) used a mini-ethnography approach to identify the cultural health beliefs of older adults in a village community in South England. Participants were 9 White individuals, ages 65 or older, who had lived in their own or rented homes in the village for at least 35 years (Bentley, 2003d). Data were collected using interviews, observations, field notes, and a researcher reflective diary (Bentley, 2003a). Three main themes emerged: (a) coping with health and illness in the village context, (b) legitimizing

access to health care, and (c) consumerist ethos in health care. Bentley discussed each theme in depth; only information salient to this researcher's study will be discussed here.

Participants identified the meaning of *health* as being active, participating in daily activities, having longevity, and being knowledgeable about health matters (Bentley, 2003a). They gained health knowledge from family and friends, books, television, and radio. The participants identified a village coping tradition as an important contributor to established health beliefs. This tradition included belonging and contributing to village life, taking care of neighbors, and treating minor health problems individually rather than burdening the community or village physician.

Bentley (2003b) identified legitimization of access as a theme in which participants moved through a process of justifying the need to seek physician care. Elements considered in the justification process included the significance of the symptoms, visibility of the symptoms, and perception of urgency (Bentley, 2003b).

For the consumerist ethos, Bentley (2003c) identified that participants knew they had certain rights as a consumer of health care, but many felt powerless due to a lack of knowledge of those rights and of financial resources (Bentley, 2003c). The author concluded that participants regarded health maintenance as a responsibility of the individual and the collective village, suggesting an internal locus of control in this sample of older adults.

White (1998) used a qualitative research approach to study the health behaviors, attitudes, and beliefs of culturally diverse well older adults. Study participants included 4 volunteers from each of the following ethnic groups: (a) Black, (b) Hispanic, (c) German, (d) Vietnamese, and (e) 3 subgroups of White older adults living in 3 different

areas within Houston, Texas. All participants were ages 65 years or older, community-dwelling, and classified as low to middle income.

Data collection was performed by teams of occupational therapy students who had received training in the fundamentals of qualitative research and interview skills (White, 1998). The students interviewed each participant in his or her home using an interview schedule of open-ended questions. The student teams also conducted a videotaped tour of the participants' neighborhood to elicit responses about the meaning certain places held for them. The data were then transcribed, coded, and categorized.

The following themes emerged as indicators of wellness in all groups: (a) self-reliance and responsibility, (b) social interaction, (c) spirituality, (d) exercise and nutrition, (e) environmental factors, (f) stress management, and (g) work–leisure balance. A weakness of this study is that it was, while under the supervision of faculty, conducted by students who had varying degrees of insight and skill in data collection and analysis. In addition, many of the informants were selected through churches or community centers, which may have influenced the nature of the responses to the interview questions. Positive aspects of the study include its use of a qualitative method to study the topic in depth and the triangulation of methods. White's (1998) findings suggest the importance of an internal locus of control (self-reliance, responsibility), community support (social interaction), and the physical or social environment (environmental factors) as factors affecting health beliefs and attitudes.

McNulty, Johnson, Poole, and Winkle (2003) used the Trans-theoretical Model of Change to investigate change behavior of community-living older adults in relation to intentions to make home safety modifications. This model is commonly used to identify

an individual's readiness for change based upon five stages of change: (a) pre-contemplation, (b) contemplation, (c) preparation, (d) action, and (e) maintenance.

Participants, obtained through convenience sampling, were ages 60 years or older, scored 20 or above on the Mini-Mental Status Exam (Folstein, Folstein, & McHugh, 1975) (the highest score is 30, and a score of 19 indicates dementia), and used English as their primary language. Several participants reported 1 to 2 falls in the previous year.

The investigators used a 72-item screening tool, the Westmead Home Safety Assessment (Clemson, Roland, & Cumming, 1997), to identify home hazards and make recommendations for changes. A readiness for change questionnaire based on the Trans-theoretical Model of Change was also used. Researchers found 134 environmental hazards in participants' homes. The mean number of recommendations for change the participants agreed to implement was 1.8; the actual number of implemented changes was 1.45 out of a mean of 2.9 investigator-recommended changes (McNulty, Johnson, Poole, & Winkle, 2003).

Because study participants were not evenly distributed among the readiness for change stages noted in the Trans-theoretical Model of Change, the authors separated the participants into "no action" or "action" groups for data analysis. The no action participants were in pre-contemplation, contemplation, or preparation stage. None had previously implemented changes to improve home safety. Action group participants were in the action or maintenance stage. These participants implemented more safety changes than the nonaction group, with a mean of 1.9 and 0.8, respectively (McNulty et al., 2003).

McNulty et al. (2003) found that it was important for this group of community-dwelling older adults to be in an action phase of change to follow through with the recommendations, meaning the participants needed to be currently taking overt action to make or sustain a behavioral change (M.E. Scaffa, Reitz, & Pizzi, 2010). McNulty et al. acknowledged that they had difficulty recruiting participants for the study when individuals learned the researchers wanted to come into their homes. Therefore, the study is not generalizable to all older adults.

Consistent findings among the studies in this section are that older adults' health locus of control and action state are important determinants of engagement in preventive and health-related behaviors. Older adults make health-related changes when they believe that they can impact the state of their own health and when they are taking action to make change possible. Older adults who subjectively rate themselves as ill believe that the state of their health is caused by forces beyond their control. As a result, they do not seek preventive health services or independently engage in safety practices, but others can influence them to engage in hazard avoidance behaviors. In comparison, older adults with a high internal locus of control engage in safety practices and have higher socioeconomic status and health motivation, health maintenance behaviors, and health knowledge.

Older Adult Health Literacy

It is evident that health knowledge is a component of older adult health prevention and health maintenance behaviors; therefore, the topic of health literacy is relevant to this dissertation research and should be explored. Oldfield and Dreher (2010) wrote a concept analysis paper to clarify the concept of *health literacy* in an older adult

population. They used Walker and Avant's (2005) 8-step concept analysis procedure to fully explore health literacy, including determining its defining attributes and identifying antecedents and consequences (Oldfield & Dreher, 2010). Using a variety of databases, Oldfield and Dreher (2010) conducted a literature search and found 44 articles that met their inclusion criteria. The desired articles were quantitative research studies, had health literacy as the primary or secondary variable, and included participants ages 50 or older. From their review of the articles, the authors identified four attributes most frequently associated with older adult health literacy: (a) reading, (b) numeracy skills, (c) comprehension, and (d) decision-making. Identified antecedents to older adult health literacy were literacy (reading and numeracy skills) and self-efficacy, which is essential to engagement in health-seeking behaviors (Oldfield & Dreher, 2010). Positive health-related consequences related to older adult literacy are "improved self-reported health status, lower health care costs, increased health knowledge, less frequent use of health care services, and increased use of preventative health services" (Oldfield & Dreher, 2010, p. 209).

Zamora and Clingerman (2011) conducted a systematic review of the literature to identify empirical and theoretical articles related to health literacy in adults ages 65 or older. They searched health and social sciences databases to retrieve qualitative and quantitative publications; 23 research studies met their inclusion criteria. The studies in this review dealt with three themes: (a) skills and health knowledge, (b) functional health literacy, and (c) health behaviors and health outcomes.

Zamora and Clingerman noted several relevant findings related to the above themes. Adequate social communication skills have a positive impact on older adults'

reading comprehension of health information and health literacy. Furthermore, there appears to be a link among health literacy, health status, and the use of health care services; older adults with low health literacy experienced low use of health care services and poor access to care (Zamora & Clingerman, 2011). Functional health literacy is lower among older adults than younger adults; the oldest older adults have the lowest levels of functional health literacy.

Another interesting finding highlighted a difference between health risk behaviors (e.g., smoking, excessive alcohol use) and health behaviors (e.g., use of health care and preventive services). Older adults with low health literacy were less likely to have engaged in health risk behaviors but were also less likely to engage in health promotion behaviors. Based on these findings, Zamora and Clingerman (2011) concluded that health risk behaviors may be influenced more by individual lifestyle and environment, whereas health behaviors are influenced by individual health literacy skills and health knowledge.

T.L. Scott, Gazmararian, Williams, and Baker (2002) conducted a study to determine if older adults with inadequate health literacy were less likely to report receiving preventive health care services. The sample consisted of 2,722 community-dwelling Medicare enrollees in a national managed care organization ages 65 to 80 years. Outcome variables were self-reported influenza and pneumococcal vaccinations, and additionally, self-reported mammogram and Papanicolaou smears for women. The researchers used the Short Test of Functional Health Literacy in Adults (S-TOFHLA) (Baker, Williams, Parker, Gazmararian, & Nurss, 1999) as the primary independent variable. One-third of participants had marginal or inadequate health literacy skills.

Those with inadequate health literacy were more likely to have a lower socioeconomic status, an impairment in an IADL, and fewer years of education, although years of education was not a significant predictor of use of preventive health care services (T. L. Scott, Gazmararian, Williams, & Baker, 2002). The researchers explained that perhaps years of education completed many years ago was not as important as current knowledge of how to use health care information.

A significant relationship was found between inadequate and marginal literacy skills and participant report of not receiving preventive health services. The researchers concluded that older adults with inadequate or marginal health literacy skills may not seek out preventive health care services because they do not understand health care information presented in written form, through the media, or through physician instruction (T. L. Scott et al., 2002).

One limitation of this study is that the researchers did not measure access to care. Although all the participants had Medicare benefits at the time of the study, the researchers did not know what health care benefits participants had before age 65, when mammograms and Papanicolaou smears are likely to be obtained.

Wolf, Gazmararian, and Baker (2005) investigated the relationship between health literacy and functional health status using a cross-sectional survey design. Participants were 2,923 new Medicare managed care enrollees from four U.S. cities. The researchers conducted surveys with participants in their homes. The survey assessed demographics, chronic conditions, physical functioning, mental health functioning, and activity limitations (Wolf, Gazmararian, & Baker, 2005). Health literacy was measured

using the Short Test of Functional Health Literacy in Adults (S-TOFHLA) (Baker et al., 1999).

Wolf et al. (2005) analyzed the data using chi-square tests and logistic regression models to determine the relationship between health literacy and the chronic conditions, physical and mental health functioning, and activity limitation variables. Approximately one-third of the participants had marginal or inadequate health literacy. Participants with inadequate health literacy had significantly higher rates of chronic disease, reported lower rates of physical and mental health functioning, and reported significantly higher limitations in ADLs and IADLs (Wolf et al., 2005). Individuals with marginal health literacy were also significantly more likely to report activity limitations.

Although Wolf et al. (2005) did not establish a causal relationship between health literacy and functional health status, they did establish that inadequate health literacy in older adults is predictive of some chronic conditions, activity limitations, and lower self-reported levels of physical health and mental health. As noted in the T. L. Scott et al. (2002) study, older adults with inadequate health literacy are also less likely to obtain preventive health services. Perhaps failure to obtain preventive health care services leads to a lower functional health status.

D. O. Clark et al. (2008) explored health literacy from a self-management perspective to understand the differences in self-management knowledge and behaviors of socioeconomically vulnerable older adults in comparison to other older adults. The socioeconomically vulnerable group was defined as having no supplemental health insurance; the other group had private supplemental health insurance. Using a phenomenological qualitative approach, the researchers conducted interviews with 23

socioeconomically vulnerable individuals and 12 nonsocioeconomically vulnerable individuals in the participants' homes. In addition, the researchers collected demographic information and determined health literacy using the Rapid Estimate of Adult Literacy in Medicine (REALM-R) (Bass, Wilson, & Griffith, 2003). The socioeconomically vulnerable group had lower education and health literacy levels compared with the private supplemental insurance group. Clark et al. transcribed the audiotaped interviews, coded the transcripts, created a written summary of each case, and extracted themes from the summaries.

The emerging themes revealed differences between the groups in four main areas: (a) prescription medications and health care, (b) caring for family members, (c) health promotion priorities, and (d) expectations about aging and health (D. O. Clark et al., 2008). The vulnerable group believed that self-management included only taking prescription medications and keeping medical/doctor appointments. Health maintenance behaviors and health promotion activities were not integral to self-management and not a priority for this group. In comparison, health maintenance behaviors, including mental stimulation activities, physical activities, and healthy eating, were a part of everyday life for the nonvulnerable group. Concerning expectations about healthy aging, the socioeconomically vulnerable/low health literacy group believed they would not live many more years and had few life goals. Their priorities centered around being comfortable and minimizing pain (D. O. Clark et al., 2008). In contrast, the nonvulnerable group expected to live a satisfying, long life and believed that taking care of themselves would make that possible. Their goals included socializing and attending

family events. Hence, the most striking differences D.O. Clark et al. found between the groups were in health promotion behaviors and expectations about aging and health.

The complexity of health literacy is evident from the literature reviewed in this section. Many prerequisite skills are required for older adults to have adequate health literacy, including reading, numeracy, comprehension, decision-making, social communication, and self-efficacy. Older adults with low health literacy have a lower socioeconomic status and education level. They minimally use health care services, have poor access to care, and do not engage in preventive or health-promoting behaviors. Many also have activity limitations, including in IADLs. They do not expect to live a long life and therefore have few future-oriented goals.

This section highlights how important adequate health literacy is for older adults to decide to engage in health promotion and prevention behaviors. An exploration of the literature concerning older adult decision-making is needed to understand factors that influence the decision-making process in relation to health, prevention, and health promotion.

Older Adult Health-Related Decision-Making

One purpose of a grounded theory study conducted by Moser, Houtepen, van der Bruggen, Spreeuwenberg, and Widdershoven (2009) was to analyze older adults' perspectives on the decision-making process relevant to autonomy. Study participants were 15 Dutch older adults with Type II diabetes living independently at home who were under the care of a diabetic nurse specialist. Data collection included in-depth interviews and the use of field notes and memos. Data analysis included open, axial, and selective coding resulting in generation of a substantive theory.

Relevant results include participants' use of three possible decision-making processes: (1) self-determination, (2) shared decision-making, and (3) welcomed paternalism. Self-determination involved older adults making choices about their own health and treatment independently. Older adults using this process gathered information from informed individuals (nurse or family) but ultimately made the decision without outside intrusion (Moser, Houtepen, van der Bruggen, Spreeuwenberg, & Widdershoven, 2009). Shared decision-making involved the individual, nurse, and family sharing information, deliberating, and making a decision together. In the welcomed paternalism decision-making process, the older adults trusted someone with expertise to make a decision for them and freely delegated this task to another. The authors considered each type of decision-making an expression of the person's autonomy, although the individual exercised varying amounts of control in the process.

An understanding of how autonomy affects the decision-making processes of older adults with diabetes may be helpful to understand how well older adults decide whether to implement home modifications. Moser et al. (2009) did not note any study limitations; however, the study was limited to older adults with diabetes, so the results may not be transferrable to other older adult populations.

Gladden (2000) used a grounded theory approach to also study the decision-making process of older adults, their families, and care providers during admission to and discharge from subacute care in a rural setting. She specifically focused on decision-making related to seeking and decoding information. Interviews were conducted within 2 weeks of admission, within 2 weeks of discharge, and 6 months after discharge. Study participants were 13 cognitively intact older adults, 8 family members, and 11 health care

providers. Observations were made in the subacute and post-discharge settings. Through data analysis, the subcategories of reluctance to seek information, mistrusting information, missing information, and norming self with others emerged.

Older adults reluctant to seek information indicated that they believed they should wait to be told information and that the physician should decide what information to share and when to share it (Gladden, 2000). Not getting full information was identified in the mistrusting information subcategory (older adults felt they were not being given complete information) and in the missing information subcategory (older adults were unable to see or hear all information being provided due to sensory issues). In the norming self with others subcategory, older adults compared themselves with others in a similar situation to gain cues on how to act.

Although this study highlights how older adults seek or do not seek information to make decisions, caution is necessary when applying its findings to the current study. Gladden's (2000) study used a sample of older adults who were not well and who were in a somewhat dependent position due to admission to a subacute facility; the decision-making process of a population of well, independent older adults may be quite different than what was found in the Gladden study.

Chen et al. (2008) also used a grounded theory approach to explore how older adults decide to relocate to an assisted-living facility. The study sample consisted of 22 women and 6 men who were English-speaking, cognitively intact older adults residing in an assisted-living facility. Data collection included in-depth interviews and field notes.

Through application of grounded theory data analysis, the authors identified a theory of older adults' decisions to enter an assisted-living facility with the core concept

of weighing and balancing gains and losses (Chen et al., 2008). The decision to move often resulted from losses in physical, functional, or social abilities or from a single sentinel event such as a fall, major illness, or death of a spouse. These occurrences resulted in older adults seeking an alternative to their current living situation that included planning the relocation; exploring, trying, and discarding options; and selecting an alternative. Similar to the Moser et al. (2009) study, Chen et al. identified various levels of autonomy in the decision-making process, including deciding by self, deciding with others, and having the decision made for them. Interestingly, Chen et al. identified several factors that hindered or facilitated the decision-making process: values, attitudes, knowledge, cost, and family proximity.

This study resulted in a comprehensive substantive theory about the decision-making process used by older adults when deciding to make a residential change to an assisted-living facility, including factors that affect the decision. Limitations of the study included a nonrepresentative sample (80 percent of the sample was female and White) and the use of only two assisted-living facilities for participant recruitment. The core concept of the Chen et al. (2008) study involved a weighing and balancing of gains and losses that is similar to the weighing process used in older adult decision-making identified by the following study conducted by J. P. Clark et al. (2004).

The purpose of the J. P. Clark et al. (2004) study was to understand the decision-making process of candidates for total joint replacement who did not want the surgery. A qualitative approach was used to interview 17 individuals ages 59 to 81 years with severe, disabling lower-extremity arthritis who were unwilling to undergo total joint replacement (J. P. Clark et al., 2004). Two main factors influencing the decision

emerged: (a) symptoms (e.g., pain and disability) and (b) information sources (e.g., medical personnel, mainly physicians, and peers). Many older adults did not have good or complete information from their physicians about the procedure; therefore, information from peers about the need for surgery was more influential in the decision-making process.

Study participants weighed the benefits of the joint replacement surgery against the costs based on the symptoms and information sources. This weighing of benefits and costs included considerations of trading one pain for another, the efficacy outcomes of the surgery, and support for recovery from surgery. Accommodation and quality of life were also important to the weighing of benefits and costs. Accommodations included limiting activities, hiring help, and coping with pain. Participants understood that surgery could potentially improve quality of life but weighed that against being old and having a shrinking lifespan (J. P. Clark et al., 2004). Notable contributions of this study to the literature concerning older adult decision-making are that older adults seek knowledge from experts as well as peers to influence the decision and that older adults enter into a process of determining how beneficial the outcome of the decision may be based on current and future life circumstances.

Copolillo (2001) examined the decision-making process of older adults considering the use of mobility devices. Participants in this grounded theory study were 9 African American older adults ranging in age from 63 to 91 years who owned or rented single-family homes and who had current or potential needs for mobility devices. Data were collected using focus groups, individual narrative interviews, and observations of the quality of mobility and presence or absence of mobility devices. Four themes

emerged from the data: (a) interpreting cues, (b) accepting use, (c) integrating use, and (d) anticipating the future. Interpreting cues involved sorting through multiple factors such as pain; mobility; safety when walking; and gathering information from medical professionals, peers, and family.

Participants learned to accept the use of a mobility device and integrate its use through remembering to use the device, trying different devices, and owning the decision to use the device (Copolillo, 2001). Anticipating the future involved the participants hoping that they could stop using the device one day but were committed to use the device for as long as they needed it. Although the sample size of the study was small and focused on one ethnic group, the decision-making process concerning the use of a mobility device may be similar to the decision-making process older adults use when deciding whether to make home modifications, as both decisions involve introducing a tangible change to the environment.

The studies in this section used a qualitative approach, most grounded theory, to examine the decision-making process of older adults related to health or home. Collectively, the studies highlighted that older adults gather information from various sources to make a decision (Chen et al., 2008; J. P. Clark et al., 2004; Gladden, 2000; Moser et al., 2009); have different levels of autonomy and input into decision-making (Chen et al., 2008; Moser et al., 2009); and are influenced by many factors when making a decision, including values, attitudes, knowledge, and symptoms (Chen et al., 2008; J. P. Clark et al., 2004). The decision-making process is complex and often involves weighing gains, losses, costs, and benefits (Chen et al., 2008; J. P. Clark et al., 2004).

Occupational Therapy in Health Promotion and Prevention With Older Adults

A. H. Scott et al. (2001) highlighted several occupational therapy community-based health promotion and prevention programs for older adults. Each focused on functional outcomes during program implementation. One program, which was developed and implemented by an occupational therapist, was offered to Medicare members of the Oxford Health Plans health maintenance organization. The program consisted of several health promotion and prevention initiatives, including health risk screening and intervention, nutrition screening and intervention, fall prevention, self-management courses for some chronic conditions, healthy aging seminars, and a walking club (A. H. Scott et al., 2001). The programs focus on the promotion of health behaviors and skill development to facilitate healthy aging.

Lifestyle Redesign is another occupational therapy-based health promotion and wellness program described by A. H. Scott et al. (2001). Lifestyle Redesign emerged from the Well Elderly Study (F. Clark et al., 1997), discussed later in this section. Philosophical underpinnings of Lifestyle Redesign include occupational science, which emphasizes the importance of occupation for well-being, and dynamic systems theory, which illustrates that older adults have the ability to reorder patterns of occupation to be healthier and more stable (Jackson, Carlson, Mandel, Zemke, & Clark, 1998). Program areas include (a) introduction to the power of occupation; (b) aging, health, and occupation; (c) transportation; (d) safety; (e) social relationships; (f) cultural awareness; (g) finances; and (h) an integrative summary using the Lifestyle Redesign Journal. The program is designed to be delivered using group and individual approaches, has been found to be efficacious, and illustrates the power of engagement in occupation in

promoting health and preventing decline in occupational performance (F. Clark et al., 1997).

A. H. Scott et al. (2001) then described the Range of Motion (ROM) Dance program (S. Tse & Bailey, 1992; Van Deusen & Harlowe, 1987). This therapeutic wellness program, developed by two occupational therapists, combines Tai Chi, music, poetry, and imagery and is designed to enhance ROM and relaxation. The program has been used in many settings, including senior centers and the homes of older adults, and with a variety of individuals with chronic conditions to promote wellness in their lives and prevent further deterioration. Although there is not extensive research supporting the benefits of the program, A. H. Scott et al. described an efficacy study by Van Deusen and Harlowe (1987) in which ROM Dance participants with rheumatoid arthritis demonstrated significant improvement in upper-extremity ROM and significantly higher levels of program enjoyment compared to an exercise control group.

The programs described by A. H. Scott et al. (2001) illustrate that occupational therapy can contribute in a variety of ways to the well-being of older adults. Occupational therapists can be integral in promoting healthful and preventative behaviors to older adults at various levels of well-being.

F. Clark et al. (1997) conducted an extensive research study examining the effect of a preventive occupational therapy program with the well elderly. The hypothesis of this randomized control trial was that preventive occupational therapy services would positively affect the physical and psychosocial health of well elderly individuals and their daily functioning when compared with a social activity program or no treatment program.

Participants, 361 older adults ages 60 or older and living in the community, were randomly assigned to an occupational therapy group, social activity control group, or nontreatment control group. The researchers used measures to assess functional status, life satisfaction, depression, perceived general health, and health status. Testing was performed at baseline and at the end of the 9-month treatment period.

Based on data analysis results, F. Clark et al. (1997) asserted that those in the occupational therapy intervention group benefited in a variety of health function and quality of life domains. Those in the control groups tended to decline in areas as compared to those in the occupational therapy intervention group, who either improved or declined less than individuals in the control groups. This well-designed and implemented study provided strong evidence for the effectiveness of occupational therapy preventive intervention with well elderly. Although the occupational therapy intervention group received information concerning basic safety tips for rug and furniture placement (Jackson et al., 1998), they did not receive information about implementation of home safety recommendations or home modification intervention.

F. Clark et al. (2001) conducted a 6-month follow-up to the previous study that showed that “approximately 90% of the magnitude of occupational therapy–based treatment gains was retained over the follow-up interval” (p. 62). These studies are important as they demonstrate that preventive occupational therapy is efficacious for well older adults. Specifically, engagement in meaningful, individualized occupation is integral to the ongoing health of well older adults in that preventive occupational therapy intervention may be used to avert some daily living challenges older adults face as they age (Florence Clark et al., 1997).

Summary

This review of relevant literature presented research focused on older adults addressing the importance of home, home modification, health beliefs, health literacy, decision-making, and occupational therapy's role in health promotion and prevention. For older adults, home symbolizes a place necessary for maintaining independence. Home means security and freedom and is an origin for participation in daily life activities (Dahlin-Ivanoff, Haak, Fänge, & Iwarsson, 2007; Haak, Fänge, Iwarsson, & Ivanoff, 2007). Consequently, many older adults express the desire to stay in their homes as they age.

Aging-in-place contributes to quality of life through a combination of elements from the social and physical environments (Chippendale & Bear-Lehman, 2010). Older adults who feel a sense of connectedness with their neighborhood and who express satisfaction with the accessibility and comfort level of their homes have the greatest levels of life satisfaction and health (Oswald et al., 2011; Oswald et al., 2007; Perez et al., 2001). Making home modifications can facilitate successful aging-in-place, as the current research indicates that home modifications improve independence in ADLs, prevent a decline in occupational performance, and provide a more-supportive environment for participation in daily activities (Fänge & Iwarsson, 2005b; Niva & Skar, 2006; Petersson et al., 2009; Stark et al., 2009).

Although many older adults want to age in place, most make few to no home modifications to make that possible (Filion et al., 1992; Naik & Gill, 2005; Wagnild, 2001; Wister, 1989). This is due to a lack of awareness of available home modifications or lack of understanding of the benefits of home modification (Yuen & Carter, 2006).

Older adults continue to complete daily activities with great difficulty or with the use of an assistive device before considering a home modification, which is viewed as a last resort (Johansson, Lilja, Petersson, & Borell, 2007; Yuen & Carter, 2006). It is important to note that participants in the current body of literature about older adult use of home modification have been frail older adults or those with chronic conditions. Also, several studies occurred in a country where municipalities are required by law to give grants for home modification to qualified applicants.

Through home modification, older adults have the potential to improve their independence and occupational performance. Therefore, making a home modification can contribute positively to the state of older adults' success in performing daily activities and to overall well-being. The literature concerning older adult health beliefs, health literacy, and decision-making is integral to informing the current study as to what is necessary for older adults to engage in health-promoting and preventive behaviors. Older adults' health locus of control and readiness for change action state are important determinants of engagement in preventive health-related behaviors (McNulty et al., 2003; Perrig-Chiello et al., 1999). Hence, older adults will make a health-related change when they believe they can affect the state of their own health and are actively engaged in a change process (Bentley, 2003d; McNulty et al., 2003).

Engagement in health-promoting behaviors also demands adequate health literacy composed of the prerequisite skills of reading, numeracy, comprehension, decision-making, social communication, and self-efficacy (Oldfield & Dreher, 2010; Zamora & Clingerman, 2011). Those older adults without the necessary prerequisite skills have low health literacy and, consequently, low use of health services (D. O. Clark et al., 2008; T.

L. Scott et al., 2002). Furthermore, these individuals do not engage in health-promoting or preventive behaviors and have activity limitations in IADLs (Wolf et al., 2005).

Older adults' health beliefs and health literacy are elements of health-related decision-making influenced by a multitude of factors, including values, attitudes, knowledge, and symptoms (Chen et al., 2008; J. P. Clark et al., 2004). Older adults collect information from a variety of sources to make a decision and have varying levels of autonomy in the decision-making process, which is influenced by locus of control. Older adults who have an internal health locus of control and perceive fewer barriers to health will be more likely to engage in health promotion behaviors and activities (Chen et al., 2008; Gladden, 2000; Moser et al., 2009). This decision-making process often involves a weighing of gains, losses, costs, and benefits (Chen et al., 2008; J. P. Clark et al., 2004).

Information from the recent literature is relevant to the current study, but none of those studies investigated decision-making in a well older adult population. The factors that influence the decision-making process of a well older adult may differ substantially from those that influence an older adult who is frail or is not independent in daily activities.

As illustrated in the literature, occupational therapists have a role in health promotion, prevention, and wellness in the community-dwelling older adult population. Occupational therapy intervention has been shown to be efficacious for well older adults, although the most prominent research in this area did not address home modifications in depth (F. Clark et al., 2001; Florence Clark et al., 1997). What is missing in the literature is an in-depth study with well older adults to explore the process they use to decide

whether to implement home modifications, the factors involved in this process, and the value well older adults place on home modifications for prevention and health promotion.

That is the focus of this dissertation research study.

Chapter 3: Research Design and Methodology

Introduction

The older adult population in the United States is increasing and will continue to do so over the next several decades (He et al., 2005). As individuals age, they have a desire to stay in their current homes rather than move to a different environment (Filion et al., 1992; Love, 2010; Tenenbaum, 2007). The potential for remaining in the home can be improved through home modification, as researchers have found that older adults increase their independence with daily household occupations and their satisfaction with performing these occupations by using home modifications (Stark et al., 2009).

The goal of this grounded theory research was to understand the decision-making process well older adults use when deciding whether to implement a home modification. Further, the investigator explored well older adults' views of using home modification for prevention and promotion of health.

This chapter includes the (a) rationale for the research design, (b) specific study procedures, (c) strengths and weaknesses of the design, (d) detailed description of participants, (e) description of the study setting, (f) description of instruments and rationale for use, (g) data collection and analysis procedures, (h) trustworthiness and quality, and (i) assumptions and limitations of the methods.

Rationale

This study qualitatively explored how well older adults decide whether to make a home modification, their decision-making process, and factors contributing to the decision. A main premise of qualitative research is that reality and meaning are constructed by individuals through their interactions in the world (Merriam, 2002).

Qualitative research approaches are based in the assumption that reality changes and is different for individuals depending on context (Merriam, 2002). These research approaches are used when a problem or issue needs to be explored in depth and when the researcher wants to address topics in detail by talking directly with individuals in their own environments, thereby providing them with the opportunity to tell their own stories in a realistic setting (Creswell, 2007).

This researcher chose a qualitative approach for this study to acquire in-depth information from the participants about how they came to the decision to make or not make a home modification. This topic has not been studied with well older adults previously; therefore, talking with the participants at length resulted in this researcher gathering rich information about an unexplored topic. It was important to conduct the study in the participants' homes, the place where they would make a home modification, for the participant to be fully in tune with his or her home environment and recall factors that have affected the decision to make or not make a home modification. In addition, the researcher made observations of the home environment and any home modifications within. Through these observations, the researcher collected additional data that led to a more in-depth and encompassing understanding of the participants and their decision-making processes.

Grounded theory is one approach for qualitative inquiry. When using a grounded theory approach, the researcher focuses on the daily life of individuals and everyday life situations. Grounded theory is often used when little has been written about a topic or when the researcher is interested in studying a process and characterizations of a particular concept (Grbich, 2003). Grounded theory involves an inductive mode of

inquiry in which the researcher is the primary instrument for data collection and analysis (Merriam, 2002). The researcher begins to analyze the data as they are collected, which may result in a different understanding of the research approach or question (Creswell, 2007). This, in turn, may lead to changes in the research design or mode of inquiry; this design flexibility is a crucial feature of qualitative inquiry (Marshall & Rossman, 2006).

The end-result of a grounded theory study is a substantive theory that emerges from the data; it is not a grand theory but one about real-world situations (Merriam, 2002). The theory is grounded in the data that has been gathered from the research participants who have experienced the process under study (Cresswell, 2007).

The theoretical underpinning of the grounded theory approach is symbolic interactionism (Aldiabat & Le Navenee, 2011; Munhall & Chenail, 2008). “*Symbolic interactionism* is a theoretical perspective derived from pragmatism that assumes that people construct selves, society, and reality through interaction. This perspective assumes that individuals are active, creative, and reflective and that social life consists of processes” (Bryant & Charmaz, 2007, p.610). A researcher who adopts the symbolic interactionism perspective internalizes several ontological assumptions, including the following: (a) reality is built through shared symbolic meaning, (b) the researcher and participant interact during the research process to investigate behavior, and (c) an understanding of humans and reality can occur only through the interaction of the researcher and participant within the natural context of the phenomenon of interest (Aldiabat & Le Navenee, 2011). These assumptions guided this researcher during the research process and affected how she conducted interviews, chose the setting for the study, and analyzed data.

The goal of other qualitative approaches, such as narrative or phenomenology, are to tell someone's story or describe the shared experiences of a group, whereas the goal of the grounded theory approach is to generate a theory to explain a process or action (Creswell, 2013). Grounded theory is the best qualitative approach for this study because the researcher intended to explain the decision-making process that well older adults use when deciding whether to make a home modification through developing a theory based on the information gathered from participants sharing their views with the researcher in the context of their own homes. The theory is grounded in the data collected from the participants and explains their actions and decision-making processes. By using a grounded theory approach, the researcher was able to obtain in-depth information from the well older adult participants concerning their ideas about home modifications that have not been explored in previous studies.

Specific Procedures

Ethical Considerations

This researcher secured Human Subject Institutional Review Board (IRB) approval for the study from both Nova Southeastern University (see Appendix A) and Towson University (see Appendix B). Continuing approval was gained as required.

All participants signed an Informed Consent Form (see Appendix C) and were informed of their rights to confidentiality and to terminate participation in the study at any time. Electronic participant information and data were kept in a password-protected file on the investigator's personal computer. Any hard-copy forms were stored in a locked filing cabinet in the investigators personal home office. In addition, all participants were given pseudonyms and assigned a number. Participant documents were

identified by the assigned number so that only the signed consent form contained the participant's actual name.

Pre-Research Preparation

Birks and Mills (2011) stress that it is important for the researcher to discern a personal philosophical position prior to undertaking a grounded theory research study; hence, this researcher spent time identifying her underlying personal assumptions. This included reflecting on epistemological and ontological questions such as

- How do we define our self?
- What is the nature of reality?
- What is the nature of the relationship between researcher and participant?
- How can we gain knowledge of the world?

Through engagement in this reflective activity, the researcher had the opportunity to further understand her own beliefs and feelings about how reality is constructed and how knowledge is acquired. Being aware of one's own assumptions and beliefs is paramount to making methodological decisions and understanding the reasoning behind those decisions (Birks & Mills, 2011). With this knowledge, the researcher was able to begin recruiting and interviewing participants with the understanding that her personal beliefs and assumptions may influence the participants' responses and data collection. This interplay of the researcher's beliefs with the participants' beliefs is known as the *co-construction of knowledge* and is a hallmark of grounded theory research (Strauss & Corbin, 1998). The researcher continued to engage in reflective thinking and writing

activities throughout the research process, as is discussed in later sections in this dissertation.

Gathering Data

Initial introductions between the investigator and participants took place in person, via telephone, or by email. During this initial interaction, the investigator outlined the general purpose of the study and summarized methods of data collection. As individuals agreed to participate in the study, the researcher and potential participant scheduled a mutually convenient date and time for the researcher to visit the individual's home. Participants engaged in an interview lasting from 60 to 90 minutes. Prior to the interview, the participants completed the informed consent form and gave the researcher permission to audiotape the interview.

The semi-structured interview was developed using concepts from the PEO model (Law et al., 1996) and Symbolic Interactionism (Charmaz, 2006). In addition, participants were asked to show the researcher any home modifications they had made or any areas of the home in which they were considering a modification. The researcher made observations of the physical home environment using an observation template developed by the researcher using existing literature (Clemson et al., 1997; National Association of Home Builders, 2009). The researcher also made observations of the participant's reactions to questions, behaviors, apparent moods, interactions between participant and family members (if present), and any other noteworthy factors.

Immediately after the researcher left the participant's home, she recorded *field notes*, which are defined as notations made of events, activities, and the physical environment and the researcher's responses to them (Birks & Mills, 2011). The field

notes contained descriptions of the physical environment and the researcher's thoughts and feelings about the participant and interview and observations about the home.

Analysis

Interviews and field notes were transcribed by a professional transcriptionist or the researcher. All transcripts were analyzed using methods typical of the grounded theory approach, including open coding, axial coding, and selective coding. Each procedure is explained in depth later in this chapter.

Audit Trail

An *audit trail* is a record of decision-making during the research process that includes a record of all research activities, changes in research direction, and rationale for certain thoughts and decisions (Birks & Mills, 2011). The audit trail was kept in a password-protected electronic file on the primary investigator's personal computer. Maintaining an audit trail was essential for this researcher to remain organized and to keep track of decisions made during the research process. It contained, for example, dates and locations of interviews with participants, descriptions of any changes made to the interview guide, and reasons for the changes.

Memoing and Diagramming

"*Memos* in grounded theory research are records of thoughts, feelings, insights and ideas in relation to a research project" (Birks & Mills, 2011, p. 40). Memo writing is critical to ensuring quality in qualitative research, as it is a pivotal intermediate step between data collection and writing the first draft.

This researcher used three types of memos throughout the data analysis process and during theoretical integration. *Analytical memos* linked the ideas of the researcher to the story emerging from the data; recorded interpretations of pieces of data, codes, or categories; and expanded on differing meanings of terms and ideas presented in the data (Lempert, 2007). *Procedural memos* recorded ideas or questions about coding procedures and organized next steps of the coding process. *Theoretical memos* made connections between codes and categories and recorded ideas and questions about the properties and dimensions of a category as well as causal conditions and consequences within categories (Corbin & Strauss, 2008; Montgomery & Bailey, 2007). Through memoing, this researcher was able to continually express her ideas about the data in an organized manner and delve deeper into the analysis to develop abstract concepts needed to construct the grounded theory (Birks & Mills, 2011; Charmaz, 2006).

In addition to memoing, the researcher created *diagrams*, defined as conceptual visualizations of data (Corbin & Strauss, 2008). Diagrams were used early in the data analysis process to organize codes and to begin to understand how the codes were related to each other. As data analysis progressed, the researcher continued to use diagrams to display categories and to identify their properties and dimensions. Diagramming was a key tool in helping the researcher gain a wider perspective about the data and to really begin to understand the participants' decision-making process concerning making a home modification. She was able to clearly visualize linkages in the data and to identify potential gaps in the developing theory. As a result, the researcher was able to go back to the data to further expand the categories as needed to complete the theory.

Strengths and Weaknesses of Design

The intent of a grounded theory study is to generate a theory that is built from the data gathered from participants. The theory is grounded in their actions and interactions. Hence, the theory goes beyond the descriptive level of meaning to a deeper understanding of the process under study and differs from an a priori theoretical orientation (Creswell, 2013). For this reason, grounded theory is an appropriate research approach to use to elicit information from well older adults about their home modification decision-making with the goal of generating a general explanation of their decision-making process.

Following Strauss and Corbin's (1998) approach, grounded theory uses a systematic approach in parts of data collection, most specifically in data analysis. *Constant comparative analysis* is defined by Charmaz (2006) as making comparisons among data, codes, and categories throughout the research process. This type of analysis is used during data collection and beginning analysis to compare pieces of data from one participant to pieces of data from other participants to begin grouping the data into codes and eventually to build categories (Corbin & Strauss, 2008). Using this process, this researcher was able to move back and forth between collected and new data. This movement helped determine future directions for collecting data to fill in any gaps in the evolving theory (Creswell, 2013).

While using constant comparative analysis, the grounded theory researcher also begins data analysis using well-defined, systematic analysis procedures. Open, axial, and selective coding are used by the researcher to derive and develop concepts from the data (Corbin & Strauss, 2008). The procedures are prescriptive, but this researcher appreciated the rigor that is inherent in the coding procedure as defined by Strauss and

Corbin (1998) in that the researcher had a systematic guide for examining the data to make sense of it and to begin to generate the emerging grounded theory. These coding procedures will be further explained later in this chapter.

As the grounded theory approach is more systematic than other approaches to qualitative research, it can be challenging for the novice researcher to fully or properly carry out all the elements of true grounded theory method (Birks & Mills, 2011; Creswell, 2013). The terminology of the grounded theory approach is extensive and can be difficult to understand. Attempting to implement all the elements of grounded theory as detailed by Strauss and Corbin (1998) and later by Corbin and Strauss (2008) was a difficult task that required intensive reading and re-reading of the descriptions of the many grounded theory techniques and analytic tools. In addition, the researcher consulted with colleagues and dissertation committee members to understand how the techniques and tools are actually implemented.

Furthermore, the procedures of the grounded theory approach and essential elements of a grounded theory are deliberately rigid. A researcher conducting a grounded theory study must use specific procedures and produce certain outcomes. The theory should identify a central phenomenon, causal conditions, contexts, and consequences (Creswell, 2013). This systematic approach may be too restrictive to some qualitative researchers who desire more flexibility.

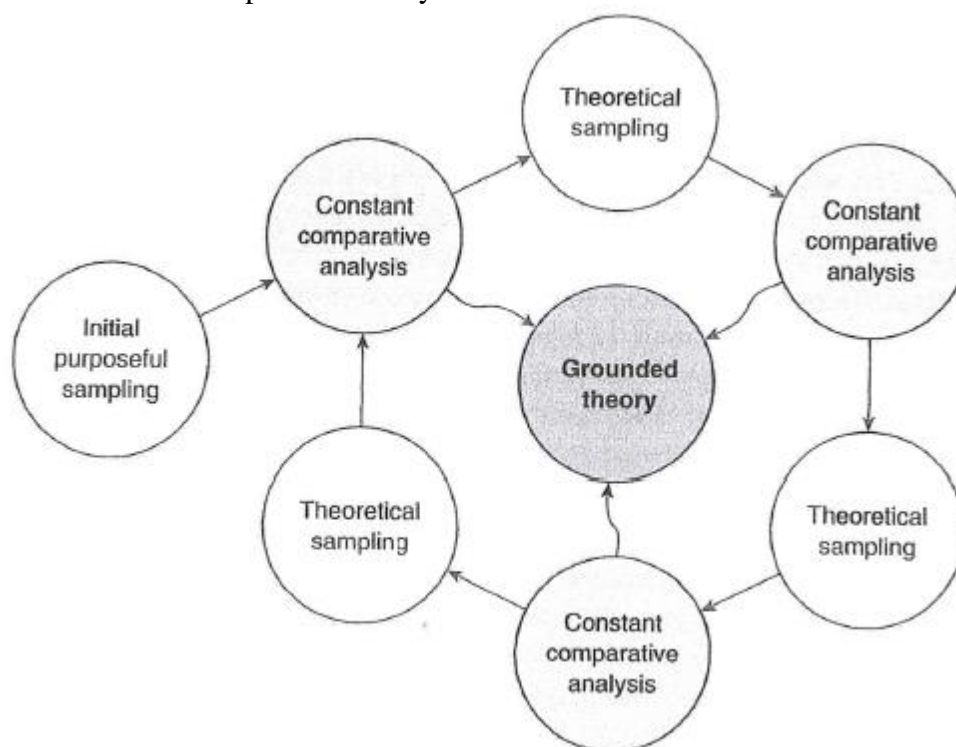
Participants

Number and How Determined

Because of the unique sampling procedures used in grounded theory research, it is not possible or recommended to identify a specific number of participants at the outset of

the study (Birks & Mills, 2011). Initial sampling in a grounded theory study is directed by the research questions (Strauss & Corbin, 1998); therefore, this researcher initially used purposeful sampling to obtain participants who were well older adults, ages 65 or older, who had made or had considered making a home modification. After initial data collection with 4 participants and data analysis including constant comparative analysis, described earlier, the researcher conducted theoretical sampling to further confirm, expand, and clarify the developing categories (Charmaz, 2006). This was an ongoing process throughout the data collection and analysis period, as depicted in Figure 4.

Figure 4. Constant Comparative Analysis



Reprinted from Birks, M., & Mills, J. (2011). *Grounded theory: A practical guide*. Thousand Oaks, CA: Sage, p. 71. Used with permission.

The investigator used theoretical sampling to seek statements that would further illuminate the categories and build the theory. Sampling ended with Participant 19,

because at that point, no new relevant data emerged, and the categories of the emerging theory were well developed (Strauss & Corbin, 1998).

Inclusion and Exclusion Criteria and How Determined

Individuals had to be ages 65 years or older to be considered for the study. The age of 65 was not arbitrarily chosen; rather, the researcher consulted the literature to determine that, in developed countries, 65 years is the beginning age of the Young–Old elderly subpopulation (Pirkle, 2009; World Health Organization, 2013). (Two additional elderly subpopulations include the Old, ages 74–84, and the Oldest–Old, ages 85+.) As 65 is also the age when many adults retire; it is a period of time when individuals begin a different phase in life and start considering options for retirement locations and housing (Shank, 2013). It was anticipated that individuals ages 65 or older would be at a point in life when they may be considering ways to remain in their home as they continue to age, with one of those considerations being making a home modification.

The older adults had to be community-dwelling to be eligible to participate in the study, meaning that they resided in private residences such as single-family homes, condominiums, or apartments. Individuals in an assisted-living setting were excluded from the study because dwellings in this setting are typically built to be accessible and are already equipped with modifications to promote successful aging. In addition, individuals in an assisted-living setting may not have the opportunity to provide input into a decision of whether to make a home modification.

Because the target group for this study was well older adults, study participants had to be independent in all ADLs and in most IADLs. This investigator wanted to understand how those older adults living independently with no or few occupational

limitations went about deciding whether to make a home modification. Independence was assessed using the Katz Index of Independence in Activities of Daily Living (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1961) and the Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969). Both of these measures will be described below.

Participants were individuals either who had made or who had considered making a home modification. Individuals who had no interest in home modifications or who had not at least considered making one had not participated in the decision-making process for implementing a home modification; these individuals could not provide information that would contribute to the development of the grounded theory and therefore were excluded from the study.

This researcher sought individuals who were English speaking (the only language in which the researcher is fluent) and who lived in Southern Pennsylvania and Central Maryland. This geographic location was chosen based on proximity to the researcher. It was crucial to the integrity of the study for the researcher to talk with participants in their own homes to gather in-depth information through in-person interviews and from observations of the home environment, including modifications. Traveling outside the selected geographic area to interview participants was not practical for the researcher.

Characteristics

Nineteen well older adults ranging in age from 65 to 89 years participated in this study. All participants lived in Baltimore County, Maryland, even though other geographical areas were targeted, as discussed above. Detailed information about each participant will be provided in Chapter 4.

Recruitment Procedure

Following notification of IRB approval from both Nova Southeastern University and Towson University, flyers (Appendix D) announcing the study and asking for volunteers were posted in area senior centers, local grocery stores, the Osher Lifelong Learning Institute at Towson University, and the Towson University Wellness Center. Paid advertisements with the same information were placed in three local newspapers in Baltimore, MD, and York, PA, counties. The flyers and advertisements indicated participants would receive a \$10 incentive gift card to a local grocery store. In addition, the researcher posted a message (Appendix E) on the Certified Aging-in-Place Specialist message board describing the study and requesting individuals contact her if they had any previous or current clients who may be interested in the study.

Potential participants were instructed to telephone or email the researcher. Nine participants were obtained using the recruitment methods described above. The researcher communicated with each of these individuals through telephone or email to explain the purpose and procedures of the study and to determine whether they met the majority of inclusion criteria and to answer any questions they had.

Additional participants were recruited in person at the Towson University Wellness Center for 1 day during a 3-hour time period. The researcher stood by the posted recruitment flyer, greeted individuals as they entered or exited the Wellness Center, and explained the purpose and procedures of the study to interested individuals. The researcher recorded the names and contact information of the 12 individuals who expressed interest in participating in the study. Those individuals were later contacted by

the researcher by telephone to further discuss the study. Ten of these individuals expressed continuing interest in the study and became participants.

Funding

No external funding was secured for this study.

Study Setting

The researcher met with each participant in his or her home. Participants chose the location in the home in which the interview was conducted. Locations included the living room (11 participants), sunroom (4 participants), outside patio (2 participants), and kitchen table (2 participants).

Instruments and Measures

Researcher as Key Instrument

In keeping with a main characteristic of qualitative research, the researcher was the primary instrument of data collection and analysis in this study (Creswell, 2013). As an instrument, the researcher has the ability to immediately respond and adapt to situations, observe and interpret verbal and nonverbal communication, and explore unanticipated participant responses (Merriam, 2002). This work leads to a greater understanding of the phenomenon of interest—the goal of qualitative inquiry.

In this study, the researcher is an occupational therapy doctoral student who is completing this research in partial fulfillment of the degree of Doctor of Philosophy in Occupational Therapy. The researcher used the observation and interview skills she acquired during her 17 years as an occupational therapy clinician and teaching skills she

acquired during 2 years as a university instructor to guide her approach and responses during all data collection activities.

Screening Tools

Two instruments were used to assess a participant's ability to complete daily activities. The Katz Index of Independence in Activities of Daily Living (Katz Index) (Katz et al., 1961) was used to screen participant's level of independence in ADLs ("activities oriented toward taking care of one's own body" (American Occupational Therapy Association, 2008, p. 45) (Appendix F). The Lawton Instrumental Activities of Daily Living Scale (IADL Scale) (Lawton & Brody, 1969) was used to determine the participant's ability to perform IADLs ("activities to support daily life within the home and community that often require more complex interactions than self-care used in activities of daily living" (American Occupational Therapy Association, 2008, p. 47) (Appendix G).

Both assessments were completed verbally with participants in their homes prior to the interview to determine if the inclusion criteria requirement of independence in all ADLs and in most IADLs was met. Both instruments are quick to administer and less intrusive than other measures of ADL performance. Using these tools provided a useful means of screening individuals in a respectful manner and permitted the researcher to maximize time spent in the interview process.

The Katz Index is a frequently used measure to quickly assess an older adult's level of independence in basic ADLs. It consists of 6 activities (bathing, dressing, toileting, transferring, continence, and feeding) that are rated dichotomously, where 1 indicates *independence* and 0 indicates *dependence*. A score of 6 out of 6 indicates

complete independence, a score of 4 out of 6 indicates *moderate limitations*, and a score of 0 out of 6 indicates *significant dependence* (Wallace & Shelkey, 2008).

Over the years, the Katz Index has been modified from its original form, and different approaches to scoring have been used. As a result, no formal reliability or validity studies were found in the literature. Nevertheless, the tool is widely used in clinical and home environments and has been demonstrated to be useful in assessing older adult level of independence in ADLs (Shelkey & Wallace, 2012).

The IADL Scale was chosen because it is appropriate to use with community-dwelling older adults, is relatively quick to administer, and may be administered in an interview format (Graf, 2008). The 8-item measure includes areas important to independent living, including ability to use the telephone, shopping, food preparation, housekeeping, laundry, mode of transportation, medication management, and ability to handle finances. Items are rated dichotomously, with individuals scored according to their highest level of functioning in each category (e.g., 0 = *less able*, 1 = *more able*) (Vittengl, White, McGovern, & Morton, 2006). If one area is outside a person's usual activities, the person is rated considering if he or she could do the activity if necessary (Vittengl et al., 2006). The scores from the individual categories are summed, resulting in the individual receiving a score ranging from 0 (*dependent*) to 8 (*independent*) (Graf, 2013). This researcher could not find any information in the currently available literature indicating what scores between 0 and 8 indicate. For the purpose of this research study, if a participant scored below 6 on the IADL scale, he or she did not meet the inclusion criteria of being independent in most IADLs.

The validity and reliability of the IADL Scale have not been studied extensively, although interrater reliability was established at 0.85, and correlations were significant at the 0.01 or 0.05 level when validity of the scale was tested against 4 scales that measure various domains of functional status (Graf, 2013).

Equipment

A digital voice recorder was used to capture participant interviews and to record field notes. A laptop computer and Atlas.ti (Berlin, Germany, <http://www.atlasti.com/index.html>) software were used to analyze the data.

Data Collection Procedures

Overview

Multiple methods were used to gather data about well older adults' decision concerning whether to make a home modification and the factors involved in the decision-making process. Using multiple methods is common in grounded theory research and is beneficial. The use of multiple methods gives the researcher different types of data to analyze and results in a more in-depth and complex understanding of the topic being explored (Charmaz, 2006).

This researcher conducted in-depth interviews, collected demographic information, made observations of the physical environment, and composed field notes. All data were collected between August 2012 and November 2012. Informed consent was obtained from each participant prior to initiating any data collection.

Interview

Before beginning the interview, participants were screened for meeting ADL and IADL inclusion criteria requirements using the Katz Index (Katz et al., 1961) and Lawton IADL Scale (Lawton & Brody, 1969). All participants met these inclusion criteria. Next, the researcher conducted an audiotaped, semi-structured interview using an interview guide. At the beginning of each interview, the researcher explained the purpose of the interview and asked the participant to relate his or her unique experiences with and story about the topic. The researcher also spent time telling the participant about herself, including informal discussion about the project and information about her professional experience as an occupational therapist, educator, and researcher.

The goal for this initial discussion was to establish rapport with participants and to build a sense of trust. This researcher attempted to convey her genuine interest in the participants and their stories through active listening and attentiveness, including turning to face the participants and maintaining appropriate eye contact. Prior to initiating questions from the interview guide, all participants appeared relaxed and ready to talk about their experiences with home modification.

Interview Guide

This researcher used the symbolic interactionist perspective and the PEO model (Law et al., 1996) to construct the interview guide (Appendix H). Influenced by symbolic interactionism, questions focused on learning about participants' views, experienced events, and actions (Charmaz, 2006) concerning their decision of whether or not to make a home modification. In addition, concepts from the PEO model were used to develop

questions that could elicit in-depth information about how a home modification and the decision-making process about that modification influenced and was influenced by the person as a unique being; the environment, including physical, social, and socioeconomic elements; and the occupations in which the participants engaged to meet their daily needs (Law et al., 1996). Examples of items from the interview guide include the following:

- Tell me about how you go about doing your daily activities.
- Describe a typical day in your life.
- How did you happen to make the decision to make or not make a change in your home and your way of doing things?
- What contributed to your decision? Who, if anyone, influenced your actions/decision? Tell me about how he/she or they influenced you.
- Tell me about your thoughts and feelings when you started thinking about making a change to your home or way of doing activities in your home.
- Could you describe how you are able to do things now compared with how you did things before you made the change?
- Where do you see yourself in 5 years? Describe the person you hope to be then. How would you compare the person you hope to be and the person you see yourself as now?
- Tell me how your views about making home modifications have changed since you made the decision to make or not to make any changes.

The questions were developed and organized in a sequence with general, less-intrusive questions presented initially; more-specific and personal questions intermediately; and general, less-personal questions at the end of the interview. This type

of arrangement was purposely used (a) to establish the participant's level of comfort with divulging information to the researcher; (b) once a comfort level was reached, to elicit more in-depth information about the participant's personal experiences and feelings; and (c) to bring the participant back to a less-personal, more-normal conversational level before ending (Charmaz, 2006).

Each interview approximated the planned interview guide, but as a result of the nature of constant comparative analysis in grounded theory, the researcher built upon the comments made in the earliest interviews to elicit additional information about developing concepts and categories. For later interviews, the researcher began to ask further questions about two key areas after their importance was made apparent through initial data analysis: (a) the decision to stay in or leave one's home and (b) the influence of children on the older adult's decision-making process.

Demographic Questionnaire

With the notion that participants may consider pieces of demographic information personal and private, these data were collected at the end of the interview process so as to not interfere with the participant's comfort level at the beginning of the interview. The researcher anticipated that participants would be more open to divulging this type of personal information following the interview conversation during which a level of comfort and trust had been established. The researcher used information from the literature (Chen et al., 2008; Dahlin-Ivanoff et al., 2007; Filion et al., 1992; Moser et al., 2009; Oldfield & Dreher, 2010) to design items for the Demographic Questionnaire (Appendix I).

Using this information, the researcher determined that specific personal demographics may influence older adults' decision-making process concerning whether to make a home modification. Examples of these areas include (a) education level, (b) housing status, and (c) children. The demographic information provided another layer of data for building the grounded theory.

Observation Template

A *home modification* is a change to the physical environment of the home; therefore, it was important for the researcher to gather data about each participant's physical home environment to capture information about salient aspects of the home, including features, basic structural condition, and accessibility. The researcher developed an Observation Template (Appendix J) based on existing literature (Clemson et al., 1997; National Association of Home Builders, 2009) to guide her attention to important aspects of each participant's home and to note any modifications that had been completed or any areas of the home in which the participant was considering making a modification. Throughout the researcher's time in the home and particularly while the participant gave the researcher a tour of the home, she made mental notes about pertinent items on the Observation Template and then digitally recorded those observations in field notes once she had left the participant's home. The researcher chose this approach, as she believed taking copious notes while in the home would interfere with building rapport with the participant and alter the flow of the interview.

As an occupational therapist, the researcher has completed numerous evaluations of the home environment focusing on safety, accessibility, and usability. The

observational skills acquired through those experiences were valuable in making thorough notes about the home environment.

Data Analyses

Data for this qualitative research project included (a) verbatim transcripts from the participant interviews, (b) field notes made after each interview that included the researcher's observations of the home and reactions to the interview, (c) memos produced during data analysis, and (d) demographic data provided by the participants. This section will describe how each type of data was analyzed and used to construct the grounded theory.

Grounded theory methods were selected for data analysis because of their congruence with aims of the study: to understand and describe the decision-making process well older adults use when deciding whether to make a home modification. The researcher used techniques developed by Strauss and Corbin (1998) and was informed by a constructivist epistemology advanced by Charmaz (2006) that emphasizes the co-created nature of knowledge and the emergent nature of research.

Open Coding

The process of analysis began after the first interview was completed and continued for approximately the following 9 months. Transcripts of interviews and related field notes were initially read in their entirety to gain an overall sense of the interview and the participant's experience with the phenomenon under study. Then the researcher began the process of open coding, which involved reading through the transcript line by line to develop initial codes. The researcher used Charmaz's (2006)

guideline of seeing actions in each segment of data rather than applying preexisting categories to the data and in turn attempted to code with words that reflect action.

Atlas.ti software was used throughout the data analysis process and specifically during open coding to organize codes and to link codes with specific segments of data.

Occupational therapy concepts were intentionally not used during open coding, as the researcher did not want to prejudge what was happening in the data. Instead, the researcher strived to let the participant's words have their own meaning (Charmaz, 2006).

While this researcher was engaged in the open coding data analysis phase, she continued to collect data from new participants. Using constant comparative analysis, the researcher compared previous data to new data and compared codes and meanings within the same interview and between interviews. Through this process of constant comparative analysis, the researcher continued to develop codes and began to see some codes that were expressed by multiple participants that would rise to the level of categories due to the importance of the concept to the emerging theory. Codes from future collected data were then compared with previous codes and developing categories. This iterative process of constantly comparing and collecting data resulted in categories that were rich in meaning (Birks & Mills, 2011). Saturation of the data was reached with analysis of the interview transcripts from Participants 18 and 19, as no new codes were emerging from the data.

Throughout open coding the researcher wrote memos that were often comprised of the researcher's questions about the data and ongoing analysis. Below is an example of one such memo.

What makes living in the home, versus not, possible? Well older adults want to stay in their homes but seem to think that staying indefinitely in some cases is not realistic. Why is this? What is making them think they need to leave? What makes leaving better than staying? Are outside forces controlling this feeling of needing to leave? Do older adults feel that they are in control of the decision to stay in their homes or leave? Is being in good health one of the criteria that makes staying at home possible? How does this weigh into the decision-making process of whether to make home modifications?

This questioning of the data helped to guide future data collection by making the researcher more attuned to what was important to past participants that should be added to the interview protocol for future participants.

The memos at this point in data analysis were also used to write code definitions. The researcher did this to capture what she meant by each code at the time coding was in progress. Defining the codes was helpful in the analytical thought process to draw distinctions between codes and to add transparency to the analysis (Friese, 2012). As the researcher progressed further into the coding process, she combined codes with similar meanings. Examples of some of the open codes and their definitions are listed in Table 1.

Table 1

Examples of Open Codes With Their Definitions

Code	Definition
Being attached to home	Having a positive emotional connection to the home, its contents, and context.
Considering a modification	Being open to a modification and thinking about it, but not in an active planning state.
Creating a change to make daily activities easier	The modification was made to improve the quality of life when doing an activity. The activity became more pleasing to do or did not require as much effort.
Figuring out	Making the decision to make a modification requires communication and coming to agreement with how and when to do it.
Not knowing how to plan	Not making a home modification because of not knowing what change to make; feeling as if one would need to be able to predict the future to do so.
Being concerned about finances	Expressing a variety of concerns about money: money for a modification, for staying in the home, or for moving to a retirement community.
Anticipating health decline	Believing that a change in health status for the worse is inevitable at some point in the future.

Axial Coding

As open coding continued and codes were raised to the status of categories, the researcher began the axial coding phase of data analysis, which involves relating categories to subcategories and defining the properties (characteristics) and dimensions (range of variance the property demonstrates) of the categories (Strauss & Corbin, 1998). Although grounded theory coding methods may appear linear as presented here, they are not. The process is an iterative one in which the researcher continues to perform open

coding with recently collected data and concurrently begins axial coding to develop categories and begin to build the grounded theory.

While engaged in axial coding, this researcher drew upon strategies developed by Corbin and Strauss (2008) for analyzing data for context, process, and theoretical integration. When doing axial coding, the researcher is thinking about relationships between the data. The tool Corbin and Strauss developed to help researchers consider those relationships is called the *paradigm*. Using the paradigm, this researcher asked questions such as why, where, how, and with what results to uncover relationships among categories (Strauss & Corbin, 1998). Basic components of the paradigm are conditions, interactions and emotions, and consequences. Conceptualizing data as conditions, the researcher answered questions, for example, about why a well older adult chose to make a home modification, where the modification was made, how the older adult came to the decision, and what happened as a result of the decision to make the modification. The interactions and emotions are the responses the participants have to situations or events.

Continuing with the above example, as a result of deciding to make a modification, some participants developed relationships with contractors that had, at times, led to feelings of frustration and anger because the work for the modification did not proceed as planned. The consequences are the outcomes of the interactions or emotional responses to events (Corbin & Strauss, 2008). Concluding the example, the consequences of the relationship with the contractor and emotional frustration and anger were delayed work and the participant completing some of the work for the modification on his own. When using the paradigm tool, “the analyst is not coding for conditions or consequences per se, but rather uses the tool to obtain an understanding of the

circumstances that surround events and therefore enrich the analysis” (Corbin & Strauss, 2008, p. 90).

Corbin and Strauss (2008) also emphasize the necessity of analyzing the data for process if the researcher’s goal is to generate theory from the data. They define *process* as a series of actions taken in response to a situation or problem to solve that problem or reach an outcome (Corbin & Strauss, 2008). Questions this researcher asked herself when analyzing the data for process included the following:

- What is going on here?
- What are the problems and situations defined by the participants?
- What are the conditions that gave rise to these problems and situations?
- How are the participants responding, and are the responses changing over time?
- What conditions connect one sequence of events to another? (Corbin & Strauss, 2008).

During axial coding, the researcher used memos to write her analytic thoughts about the components of the Corbin and Strauss’s (2008) paradigm and process as discussed above. Part of one memo written about possible conditions appears below.

There are conditions. These are a conceptual way of grouping answers to questions about why, where, how, and what happens. The reasons why well older adults implement modifications could be conditions. These reasons answer the question (in part) as to why a modification was made.

Creating a comfortable change— Two participants talked about making a modification that was comfortable. Participant 1 made modifications for her

husband with ALS, but they had her future living arrangements and needs in mind when they planned the modifications. They added a room on to the back of the home that is now a sunroom but served as his bedroom. She stated that it was a very comfortable space for him and for people to visit them. It did not have a medical feel to it, and therefore it was comfortable. The room also has copious amount of natural light, another element of the modification that adds to the comfortable feeling of the room.

Participant 9 (along with her husband, Participant 8) remodeled their kitchen rather than looking for a different home with a “better” kitchen. They installed an island; made wide walkways between the cabinets and island, which in part was planned to accommodate a wheelchair later if needed; and installed many lights to improve ability to read and cook in the kitchen. The participant that these changes improved the flow of the house and made the space more comfortable.

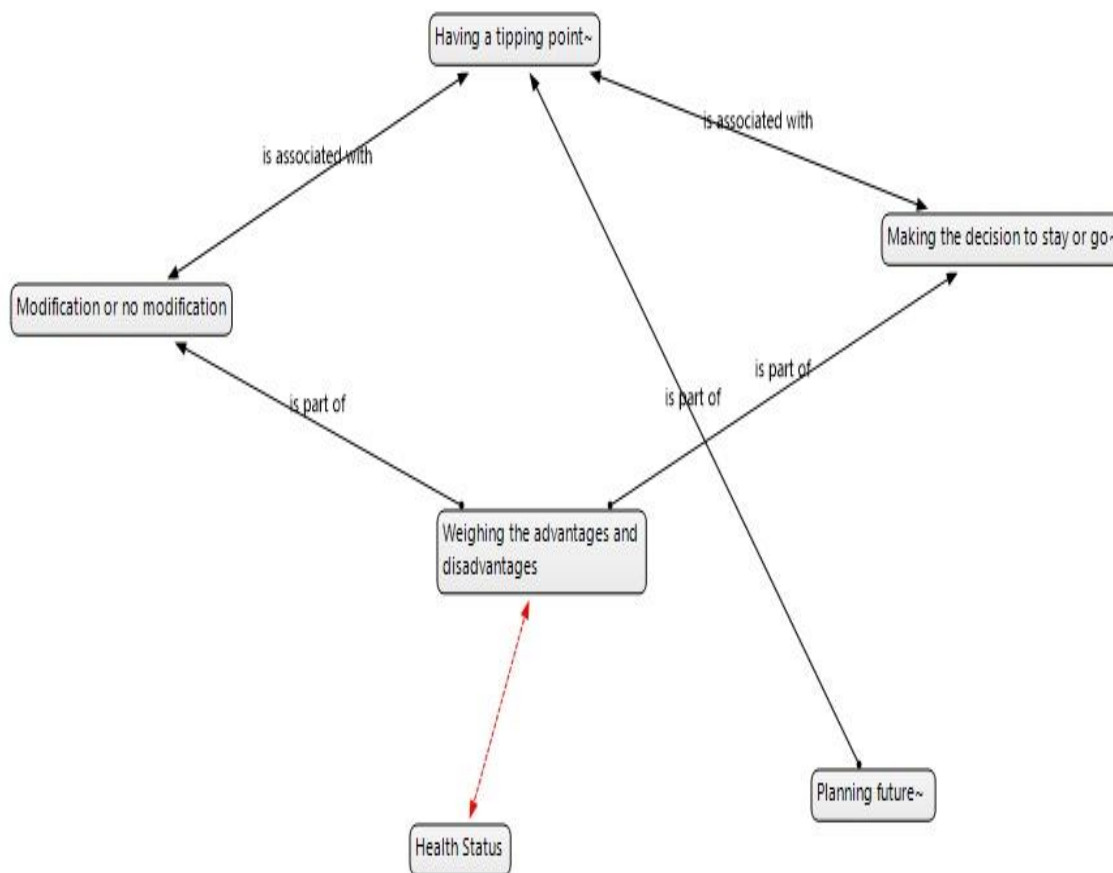
Creating an aesthetically pleasing change—Participant 1 discussed that she and her husband decided to construct a ramp to the back porch rather than install an elevator because they believed the ramp was more aesthetically appealing for the appearance of the home.

Participant 7 remodeled her bathroom, installing a comfort-height commode, grab bars, and walk-in shower. She stated she was not remodeling it because she was old, but she wanted it to be more user friendly for herself and for others and still wanted it to look nice.

Participants 12 and 13 installed a cathedral ceiling and a deck extension. They modified a room to add more windows and outside light, thinking in part that if they needed to move their bedroom to the first floor, they could use this room on the first floor and that it would be a “bright and cheery place.” They also gutted her bathroom and installed a walk-in shower with a built-in seat and a hand-held shower that she describes as “lovely.”

In addition to memo writing, the researcher used diagrams at this stage of data analysis to help make the connections between categories more clear and to begin to understand the process that was emerging from the data. These first diagrams were created using Atlas.ti qualitative data analysis software. Using this software, the researcher was able to describe the relationships between categories. Figure 5 is an example of a diagram the researcher developed during axial coding to visualize parts of the decision-making process of a well older adult about whether to make a home modification.

Figure 5. Example of Diagram Constructed During Axial Coding



Selective Coding

Once the researcher identified categories and determined their properties and dimensions through axial coding, she began the process of achieving theoretical integration through selective coding. The first step in selective coding is identifying a *core category*, a central phenomenon that has the greatest explanatory power and the greatest potential to link all other categories together (Corbin & Strauss, 2008). Strauss and Corbin (1998) assert that the core category may not evolve from the list of existing categories. That was the case in this study.

Although the categories explained much of the participants' stories, none of them completely captured these stories; hence, the researcher developed a distinct phrase under which all categories could be subsumed. After deciding on the core category (Planning the Future), the researcher continued the process of theoretical integration by relating the other categories and concepts derived from the data around the core category.

The researcher used memos during selective coding to write the story line, as suggested by Corbin and Strauss (2008), writing descriptive sentences to answer the question "What seems to be going on here?" (p. 107). The researcher composed the memo below to clarify her understanding of the main issue coming from the data.

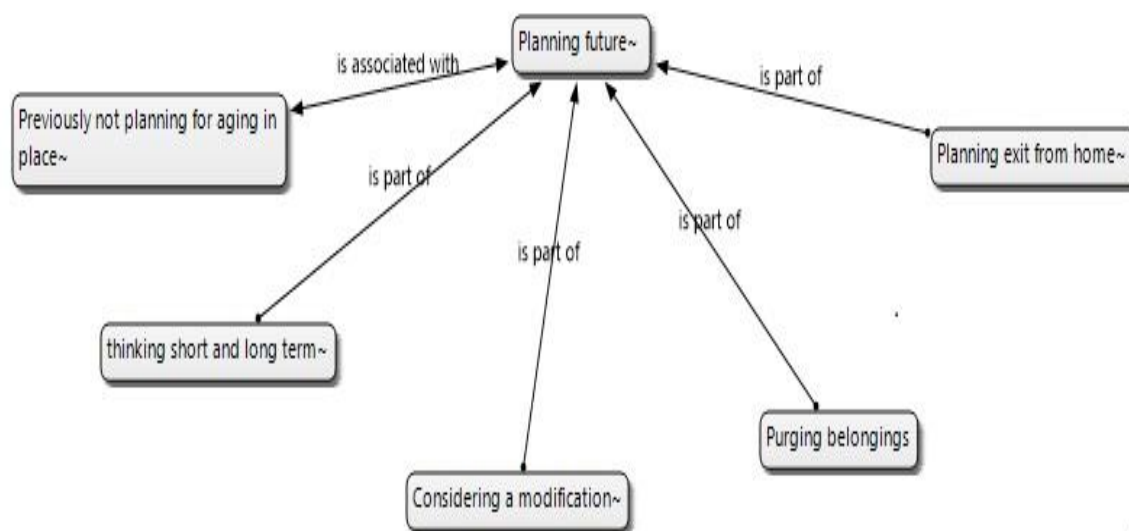
The participants were planning for their futures but in different ways. Some of this planning involved making home modifications; some did not. Both those who had made modifications and those who had not talked about purging belongings in preparation—preparation for leaving the home due to moving or preparation for when they die so others will not have to be burdened with deciding what to do with their belongings.

Some well older adults were planning for their futures by planning to leave their homes in the very near future (1–2 years at most). Others were planning for a future in their current home: some for 5–10 years, others for "as long as possible" or until they died. They were planning this future by making home modifications for a variety of reasons (e.g., make daily living easier, more efficient, safer). They recognized that there were certain changes they could make to their home to improve their ability to do their everyday activities now and in the future.

Others were thinking about their future somewhat and became more aware of possible changes they could or should make to their home by participating in the interview with this investigator. During the course of the interview, I did not suggest changes, but by talking about their homes and their future plans, many of the participants began to actively think about what changes they would consider making to their homes to make it possible for them to stay there as they age. These participants were open to making changes but had not previously considered what modifications they could implement.

Creating diagrams also contributed to theoretical integration during the selective coding process. The diagram in Figure 6 is one attempt to relate the core category to other categories and express the relationships between them.

Figure 6. Example of Diagram Constructed During Selective Coding



Additional Analysis

Throughout the process of developing codes and categories, the researcher incorporated observations made of the home environments and modifications recorded in field notes to provide additional context to the analysis. Furthermore, the researcher created a chart from the participants' demographic data (see Table 2 in Chapter 4) to gain a broader understanding of who these participants are as a group. She also used this data to inform the process of writing the story line used during theoretical integration.

Trustworthiness and Quality

The researcher incorporated several strategies suggested by qualitative research experts (Birks & Mills, 2011; Creswell, 2013) to build trustworthiness and quality into this grounded theory study. First, the researcher used multiple data sources, known as *triangulation of data*, to provide different types of evidence to build the grounded theory (Creswell, 2013). Second, the researcher maintained an audit trail throughout the research process to record all research activities, events, and decisions to enhance procedural precision and transparency (Birks & Mills, 2011).

Third, the researcher wrote memos to record insights related to the research project. The memos were working documents used to organize the researcher's analytical thoughts. Through writing memos the researcher was able to articulate and explore interpretations of the data, thus raising the data to a conceptual level (Birks & Mills, 2011).

Fourth, the researcher participated in a peer debriefing session with a member of her dissertation committee, which provided a means to gain feedback about her methods and interpretations. This session provided additional perspective to the research project

and infused a layer of quality through an external check of the research process (Creswell, 2013). Fifth, the researcher convened a focus group in which she presented the results of the data analysis to 5 of the researcher participants who responded to an invitation to attend the focus group. During this session, the researcher presented the categories, relationships between the categories, and the developing theory to the 5 participants to solicit their views of the findings and the researcher's interpretations (Creswell, 2013). Gathering the participants' views of the findings is an essential step to establishing quality and credibility in qualitative research (Creswell, 2013).

Assumptions and Limitations of Methods

The grounded theory method has assumptions based in pragmatism and symbolic interactionism. A main assumption is that reality, society, and the self are constructed through interaction and are therefore reliant on language and communication (Charmaz, 2006). Another closely related assumption is that interactions are dynamic and influence change in persons' meanings and actions. Also, people are assumed to think about their actions and interactions rather than make pre-determined, mechanical responses (Charmaz, 2006). The researcher was ever-cognizant of these central assumptions of the grounded theory method throughout development of the research study, data collection, and data analysis.

These assumptions lead to several inherent limitations of the method. A researcher using the grounded theory method seeks to understand a human-driven interaction or process and therefore often uses in-depth interviews with participants involved in that interaction or process. Unfortunately, study participants may not always answer fully or truthfully; hence, the understanding the researcher gains may be

incomplete or flawed. In addition, the researcher observes or interacts with participants in a natural setting to capture the participant's actions and thoughts in the most realistic manner. As a result, the same or different researcher cannot truly replicate a grounded theory study.

Summary

In this chapter, the researcher presented details about the grounded theory method, including why it is an appropriate method for this study and the strengths and weaknesses of the design. Data management, including ethical considerations, and procedures such as memo writing and maintaining an audit trail were explained. The researcher introduced general information about the participants; additional details will be provided in Chapter 4. The researcher thoroughly detailed the grounded theory data analysis procedures used, providing examples to facilitate the reader's understanding of the process. Issues of trustworthiness and quality of the research were discussed to ensure the reader that procedures were followed to maintain the credibility of the study. Finally, the researcher presented central assumptions and limitations of the grounded theory method to remind the reader of the lens through which the researcher conducted this grounded theory investigation in preparation for the presentation of the study results.

Chapter 4: Results

Introduction

The purpose of this grounded theory study was to develop a substantive theory of the factors that influence a well older adult's decision concerning whether to implement home modifications and the process used when making the decision. The researcher also sought to understand well older adults' views concerning the use of home modification as a strategy to prevent a decline in occupational performance.

Participants were 19 well older adults, including 5 couples. All participants were community-dwelling and independent in basic ADLs and IADLs. The primary form of data collection consisted of an in-depth interview conducted in the home of each participant. The researcher also collected data through using observation and a demographic questionnaire. All interviews took place between August 2012 and November 2012.

Results of the study are presented here. First, participant characteristics and more-detailed participant case overviews are presented to provide greater context to the study results. Next, the results of data analysis are presented following the basic procedures outlined by Corbin and Strauss (2008), including open, axial, and selective coding. Then an overview of the decision-making process and grounded theory are presented to offer the reader an overview of the study findings. Finally, an in-depth explanation is provided using the participants' words and the researcher's interpretations.

Participants

Demographic information about each participant is displayed in Table 2.

Table 2

Participant Demographic Information

Participant	Age, Years	Marital Status	Employment Status	Children	Education	Housing type; Ownership
Linda	65	Widow	Retired	No	College	Multi-level; mortgage
Connie	89	Widow	Retired	Yes	Graduate school	Multi-level; living with daughter
Thomas	69	Married	Retired	Yes	Graduate school	Multi-level; owns
Rebecca	69	Married	Retired	Yes	College	Multi-level; owns
Elizabeth	69	Never Married	Retired	No	Graduate school	Ranch; owns
Donna	74	Widow	Self-employed	Yes	Graduate school	Ranch; mortgage
Candice	65	Widow	Retired	Yes	Graduate school	Ranch; owns
Alice	69	Married	Part-time	Yes	College	Multi-level; owns
Carl	74	Married	Self-employed	Yes	Graduate school	Multi-level; owns
Barbara	79	Married	Retired	Yes	Graduate school	Condo; owns
Michael	77	Married	Retired	Yes	College	Condo; owns
Mark	72	Married	Part-time	Yes	College	Multi-level; mortgage
Rachel	72	Married	Retired	Yes	College	Multi-level; mortgage
Gerald	87	Widower	Retired	Yes	Graduate school	Ranch; owns
Jonathan	89	Widower	Retired	Yes	College	Multi-level; mortgage
Penny	70	Married	Retired	Yes	Graduate school	Ranch; owns
Donald	73	Married	Retired	Yes	Graduate school	Multi-level; owns
Karen	72	Married	Retired	Yes	Graduate school	Ranch; owns
Nora	74	Married	Retired	Yes	Graduate school	Ranch; owns

Note. All names are pseudonyms.

All participants lived in Baltimore County, Maryland, specifically in the following three areas: Catonsville, Towson, and Cockeysville. The researcher has provided the reader in Table 3 with applicable statistics from these geographic areas to give additional context and understanding about the participants. The items in the table related to race, education level, housing value, and household income are particularly valuable to understanding the sample of study participants.

Table 3

Demographic Information by Geographic Area

	Baltimore County	Catonsville	Towson	Cockeysville
Population	805,029	41,567	55,197	20,776
% of persons ages 65+	15.1	17.2	16.5	10.5
% By race				
White	64.8	75.2	80.6	61.9
Black	27.0	14.5	11.0	18.3
Hispanic	4.6	3.4	3.4	7.9
Asian	5.4	6.3	5.1	12.6
% Bachelor's degree or higher	35.2	43.1	61.0	45.4
% Homeownership	67.0	69.6	60.0	35.6
Median housing value	\$269,400	\$318,900	\$348,000	\$326,200
Median household income	\$65,411	\$71,391	\$73,415	\$60,261

Note. Population data are from the 2010 U.S. Census. Home ownership rate, median housing values, and median household income reflect 2007–2011 data. Percentage by race not equal to 100 due to rounding. Data are from U.S. Department of Commerce. (n.d.). *State and county quickfacts*. Retrieved from <http://quickfacts.census.gov/qfd/index.html#>

Although this researcher did not specifically ask participants to divulge their household income levels, the researcher deduced from the appearance of the homes, including size, upkeep, and neighborhood, that all of the participants were in the middle-income to upper-middle-income ranges. In addition, the median housing value in the three areas listed is higher than Baltimore County as a whole, and median household income is higher in two of the areas than in Baltimore County.

All study participants identified themselves as White on their demographic questionnaire. The lack of racial diversity in the study sample is partially explained by noting that the majority of people living in Cockeysville, Catonsville, and Towson are White. The researcher did not realize the magnitude of the difference between the number of White individuals compared with those of other races at the beginning of the study but rather obtained this information during the data analysis phase. This information is pertinent to understanding the sample of all White participants that the researcher obtained.

Similarly, all of the participants in the study were well educated. A large percentage of individuals who lived in the three areas had obtained a bachelor's degree or higher, a greater percentage than in Baltimore County as a whole. In fact, most of the participants held a master's or a doctorate degree. The high education level obtained by the participants explains in part why they volunteered to participate in the study. These participants valued knowledge and education, as is evident by their level of educational achievement and the fact that many of them continued to educate themselves by attending adult education classes. Having completed dissertations and theses themselves, many of

these participants explained that they volunteered, in part, to help a “poor doctoral student.”

Other reasons participants volunteered for the study included mining for information, having an intellectual curiosity, and celebrating the modifications they made in their homes. Each reason is briefly explained below.

Participants mining for information participated in the study to understand what other well older adults were deciding to do concerning staying in their homes and making modifications. Multiple participants asked the researcher to comment on what modifications other participants had made to their homes. In addition, although not part of the study, this researcher offered to recommend to participants modifications that she, as an occupational therapist, would make to the home. All participants asked the researcher to do so.

Many participants had an intellectual curiosity about the topic of the research and wanted to further understand what the researcher was actually studying. For example, Donna asked the researcher to explain the term *well older adult*. After she heard the explanation, Donna shared that she did not particularly like that term and preferred to refer to herself as *a healthy older adult* rather than well. Penny, a retired home care nurse who had experience providing services to older adults, had specific information she wanted to share with older adults who planned to stay in their homes as they age, such as “put a bathroom on the first floor; put a bedroom on the first floor; make it no-steps living. You could even take . . . a dining room and turn that into a bedroom.”

Finally, many participants displayed a sense of pride and accomplishment about the modifications they had made in their homes and were excited to share them with the

researcher. Donna pronounced that her modification of adding a room to her home to enclose her pool so that she could exercise daily to keep fit was “something that I had dreamed about,” and Mark and Rachel commented, “we’re very pleased with this. It’s a bright and cheery place, and that’s what we wanted, a lot of glass and light” about the addition to their home to accommodate one-floor living.

In this section, the researcher provided an introduction to the participants. In the next section, the researcher presents more-specific information about each participant to provide the reader with even greater context for understanding them and the study results.

Participant Cases: Overview of Daily Life and Occupations

Linda, a 65-year-old retired widow who lived in a two-story home in a well-established neighborhood, had lived there since 1992 and planned to stay for years to come. The home had three sets of steps with bilateral railings to enter the front door and a walkway with broken pavement, accessible from a side alley, to enter the back door. The home appeared well maintained, which was in keeping with the other homes in the neighborhood. Linda’s husband, a former engineer, had amyotrophic lateral sclerosis (ALS), which was the impetus for their decision to make extensive home modifications. The couple had no children together, although Linda had 4 stepchildren and grandchildren from a previous marriage. Linda was an active woman who participated in many occupations, including exercising, volunteering, socializing with friends and family, and traveling.

The most fragile participant, making her atypical, was Connie, an 89-year-old retired teacher who owned a home in New York but who had recently come to Maryland to be near a cancer specialist. She lived with her daughter and son-in-law in their two-

story home in a suburban neighborhood. Connie mainly lived on the first floor of the home, although she negotiated a full flight of stairs to the second floor to take a shower every other day. She managed at home independently during the day while her daughter and son-in-law worked. Because of the cancer, Connie lacked endurance and stayed in the home on most days, traveling outside of the home only with the assistance of her family. Connie discussed that she previously enjoyed attending shows at the performing arts center near her home in New York but was now unable to do that. She revealed that she was now writing a book and enjoyed reading, listening to classical music, watching select television programs, and freezing vegetables and fruits. She planned to sell her home in New York and live with her daughter permanently.

Thomas and Rebecca, both 69 years old, were a married couple who had lived in a large four-story home on a 35-acre estate for 22 years. There were three steps with no handrail to enter their expansive, well-maintained home. Thomas, a retired college professor, biked 14 miles daily, did yard work for typically 1 to 2 hours per day, and worked in his home office doing home finances and planning travel. A former antiques dealer, Rebecca had collected many pieces that adorned their home. Her typical daily occupations included reading, grocery shopping, cooking, cleaning the home, and working in the yard. In addition, she walked 2 to 3 miles to the post office to get the mail on days “he really pushes me.” Rebecca would like to stay in her home “as long as I have breath in my body.” Thomas, however, has “certain indicators” that will signal for him “when it’s time to go.” Both have made behavioral changes to their daily routines to accommodate age-related changes but have made no physical modifications to the home, although they expressed a willingness to consider future modifications if a need arises.

Single and 69 years old, Elizabeth lived alone in a ranch-style home with three steps to enter through the front door and back door. There was no handrail at the front entrance and a wobbly handrail at the back. Elizabeth stated that she did not plan to buy a ranch home 21 years ago, but did so that her mother, who was coming to live with her, would not have to negotiate a full flight of stairs. The clutter-free home had a fully finished basement that Elizabeth used frequently to entertain her many friends. Having retired over a year ago, this former clinical social worker had no difficulty filling her days with other occupations. She volunteered at a school 1 day per week, exercised 2 days per week, had lunch with friends, attended the theater, had dinner parties, and traveled. When she stayed home, she enjoyed reading. Elizabeth made several modifications to her home and hoped to stay there as she ages.

Donna was a 74-year-old widow who was working as a self-employed consultant in computer-related program management. She had lived in her ranch home for 47 years and planned to stay there indefinitely. The front entrance had two small steps with a platform in between, a finished basement, and an attic. She continued to access the basement using a set of stairs or the stair lift she had installed when she fractured her hip in 2003; she accessed the attic using the pull-down stairs she recently had installed. In addition to working part-time, she enjoyed swimming in her enclosed pool, volunteering, and traveling. She described herself as an independent, private person and revealed that she has to make a “concerted effort to try to invite somebody” to do things with her, as she is not naturally a social person.

Candice was a widow who lived alone in her ranch-style home but kept active by watching her 5 grandchildren 2 days per week, walking for exercise, volunteering, doing

crafts, and writing. She was a 65-year-old retired teacher who had lived in her home for 37 years. The winding concrete walkway to the home was overgrown with bushes and posed a potential safety hazard. The home had entrances with multiple steps at the front, back, and back porch. Although the kitchen was very open and the walkways in the home were generally clear, there was some clutter in the spare bedrooms. A rocking chair in Candice's bedroom placed directly in the walkway to her bathroom appeared to be a likely trip hazard, although Candice was not concerned about it. She planned to stay in her home as long as possible and explained that she "would hate to leave" and "that would be like the bitter end."

Another married couple, Alice age 69, and Carl age 74, had lived in their three-story home for 34 years. The home was located in a well-established neighborhood with large, well-maintained homes. There was a very steep driveway to Alice and Carl's home with multiple steps to enter the front door. A second entrance was located at the back of the home. This entrance was accessible only by walking through the grass from the front of the home and ascending one step to a patio. Alice worked part-time at a local university, while Carl was a part-time consultant who frequently worked from his home office. They participated in many of their occupations together, including exercising 3 times per week, working in their yard, attending church services, going out to dinner, and traveling. Alice asserted that the couple planned to stay in the home "as long as possible," while Carl offered, "my thinking is probably another 4 or 5 years at the most." They expressed a heightened awareness of age-related physical changes and implemented multiple modifications that were in part, "for resale, but a lot of it was in the anticipation of enjoying the facility more, and that has been true." Ultimately, they believed personal

physical decline would make it difficult for them to maintain the home and property and noted, “in 5 years I don’t think we’ll have the desire to do it, in addition to the energy to do it. You know there comes a time where it’s just... I don’t want to do that sort of thing anymore.”

Barbara, 79, and Michael, 77, parents of 4 children, moved from a single-family home to a condominium 7 years ago for many reasons. They moved from their “dream home,” the home in which they thought they would spend their retirement years, to be closer to family and friends, decrease their responsibility for home and property maintenance, and to acquire one-floor living due to Michael’s physical decline that included deteriorating cartilage in both knees and a heart attack. In addition, the condominium was conveniently located near shopping and restaurants. This active couple went to the gym 3 times per week, hosted dinner parties, volunteered for a variety of organizations, and traveled. Furthermore, Barbara attended an art class 1 day per week while Michael attended a portrait group. They planned to live in their condominium for many years and have made minor modifications to make certain daily tasks easier.

Mark and Rachel had lived in their one-step entry, four-story home for 38 years. Both 72 years old, Mark continued to work full-time but planned to retire within a year; Rachel retired 10 years ago after teaching for 38 years. Mark, an avid golfer, exercised 3 times per week and maintained the yard and landscaping at his home. Rachel attended meetings and had lunch with her “women’s groups”; she also enjoyed going to a local bookstore alone and reading for hours. Having chronic back problems, Rachel attended physical therapy 1 time per week to keep “walking and doing what I need to do.” Furthermore, she was responsible for the daily household chores but always made time to

talk with one or both of her children. The couple had made several modifications to their home to make self-care activities easier for Rachel and prepare for the possibility of first-floor living. Mark related that they plan to stay in their home “as long as we can ‘til they carry us out.”

Gerald, age 87, was also planning to stay in his modest, ranch-style home as long as he could. He was a widower who had lived in his home for over 40 years. Gerald lived alone in the home for a few months after the death of his wife when, unexpectedly, his daughter and her husband needed a place to stay temporarily; they still lived with him when this researcher met Gerald. Gerald reported, “that was probably 15 years ago”; nonetheless, “it’s worked out very well because she does all the cooking.” His daughter and son-in-law worked, leaving him alone during the day, but he kept busy “piddling around the house,” doing some outside work such as cleaning the windows, managing his finances, and returning correspondence. He usually went to the gym 3 times per week, driving his 1986 Pontiac, about which he proudly explained “I have had it since it was new.” Gerald installed a grab bar in his bathtub 4 years ago after he had open-heart surgery, and his wife had bilateral handrails to the finished basement installed. The railings were an aesthetic modification at the time; now Gerald used the railings regularly due to having pain in his knees. Gerald did not foresee making further home modifications, although he was open to additional modifications if needed.

Jonathan was a pleasant 89-year-old widower with 2 children who had lived in his home for 51 years. This tidy two-story home had five steps at the front entrance and included a basement where Jonathan had his washer and dryer. In addition to going to the gym 3 days per week for 2 hours on each of those days and managing his home, yard,

and finances independently, Jonathan was the commander, chaplain, and treasurer for a World War II Veteran's post. He was an historian for the China–Burma–India Theater and gave multiple speeches on that topic. Furthermore, this self-proclaimed “talk show addict” spent hours per day listening to radio programs; he watched television only if his favorite team was playing football. He had a “lady friend” with whom he talked on the telephone every evening and whom he accompanied to dinner 1 to 2 days per week.

Jonathan planned to stay in his home, stating, “I don't really want to leave. I have no intentions to leave unless something unreal happens that would force me to do that, but as long as I can continue to, [I will] do what I'm doing.” He noted the neighborhood is not as safe as it used to be, which prompted him to install a steel door in his basement for increased safety. He made other modifications to improve his comfort and ability with everyday activities, including replacing knob door handles with lever handles and installing a grab bar in his bathroom.

Penny lived in a large 2-story home in an upscale neighborhood with her husband. She was an active, retired 70-year-old with many occupations, including babysitting her 2 grandchildren 3 afternoons per week, swimming 4 days per week, attending adult education enrichment courses, and volunteering 2 days per week for two organizations. Penny and her husband had built their home 25 years ago “with one-floor living in mind.” Although the home had a master bedroom and bathroom on the first floor, Penny discovered that the bathroom was not accessible during the time when she was non-weight-bearing on her right leg after sustaining a fractured ankle as the result of falling off her bicycle. Penny was a retired nurse who had worked in home care in the past; therefore, she was aware of modifications and behavioral changes she could make to

manage her daily activities. She did not make any home modifications at that time; rather, she chose to make nonstructural changes to adapt to her temporary status.

Although the couple had not made any home modifications, Penny explained, “as long as were both physically and mentally able to handle everything, we will stay here.” She conceded that they would be willing to make modifications to the home if one of them became disabled but noted they would leave their home “I guess if one of us--either one of us—were permanently handicapped and if that--I guess if either one of us required 24-hour, live-in care.”

Donald was a 73-year-old retired psychologist who had lived in his home of 44 years with his wife and dog. The home was a well-maintained three-story row home that had six steps to enter with landings in between the second and fifth steps at the front of the home and three steps to enter at the back of the home. The couple used all three levels of their home daily, including negotiating a full flight of steps to the finished basement or the second level to access a bathroom. Donald was an avid gardener who maintained his personal yard, a vegetable garden, and a 135-yard “street garden” in front of his and other neighboring homes. In addition, he exercised daily at a local gym, enjoyed listening to the radio, and traveled with his wife. Donald expressed his desire to stay in his home, although he had considered other possibilities:

We don't have any plans to move. We hope we never have to move, but we realize that things could change, and we have looked into what other residential places are available: just once we visited Oak Crest; we have in the back of our mind that that could at some point in time be a move that we have to make.

Donald had not made any modifications to the home and did not anticipate making any modifications, believing that a modification such as a ramp may “destroy the basic, you know, appearance of the house.” He would consider making minor modifications to be able to stay in the home if he or his wife had a “health crisis.”

Karen, 72, and Nora, 74, were a lesbian couple who had lived in their ranch-style home for 24 years. This organized, clutter-free home included a fully finished basement, which the couple had arranged to accommodate a full-time live-in personal caregiver if needed in the future. The women were retired, but their days were busy with various occupations. Nora pointed out, “the typical day is filled; it’s never boring, we’re never bored. We’re never at a lack for something that we have to do.” Karen, who was enrolled in multiple adult education classes, also served on various committees. Nora also attended adult education classes, assisted in the organization of some of those classes, and was a volunteer board member. Although they lived “semi-independent” lives during the day, Karen and Nora came together in the evening to have dinner, work on their computers, and watch a television program. Their weekends often involved getting together with friends or traveling. The couple planned to stay in their home as they get older; Nora explained, “we love the neighborhood and feel very comfortable here, and there is always that fear, I’ll use the word *fear*, it sounds strong, of the unknown of moving to a home like a retirement community.” Hence, the couple had bilateral handrails installed on the front and back steps to their home to improve their ability and safety entering and exiting the home now and in the future. Nora and Karen made the decision to invest in that modification because Karen had knee surgery and could not negotiate the stairs without handrails. The couple admitted they had considered other

modifications such as installing a walk-in shower, grab bars, and a stair lift but had not yet acted on those considerations. Karen shared, “I always say a catastrophe would lead us toward something, but we’d like to think we could prevent the catastrophe.”

In summary, the participants’ life experiences, daily occupations, and home environment influenced their ideas about home modifications and hence their decision of whether a home modification would be useful to them. Also, their level of education, health status, and socioeconomic status influenced their decisions about whether or not to make the home modifications. Having provided the reader with this background information about the study participants, the researcher next presents the results of data analysis.

Introduction to Data Analysis Results

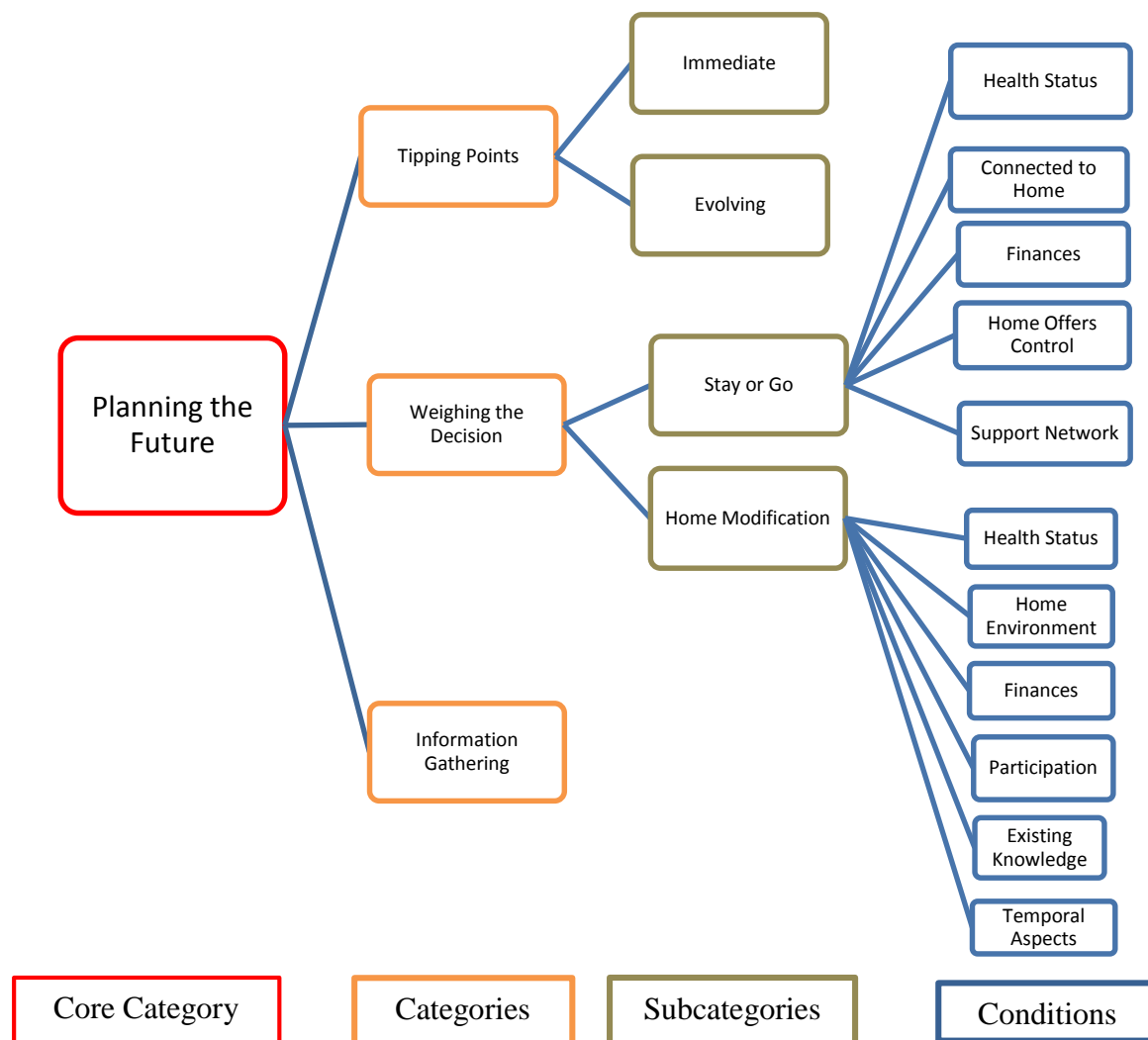
The researcher first presents the core category, categories, and subcategories followed by an explanation of the Decision-making Process Diagram. This presentation will provide the reader with a global understanding of the decision-making process and the elements included. The researcher then presents the Theory of Home Modification Decision-making: Well Older Adults, including a general explanation of the theory followed by an in-depth explanation of its various components.

Core Category and Main Results

Question 1, How well do older adults decide whether to make home modifications, was the main guiding question of this study; hence, most of the data analysis focused on answering this question. Figure 7 depicts the core category,

categories, subcategories, and conditions affecting the decisions that emerged from the grounded theory data analysis.

Figure 7. Core Category With Categories, Subcategories, and Conditions



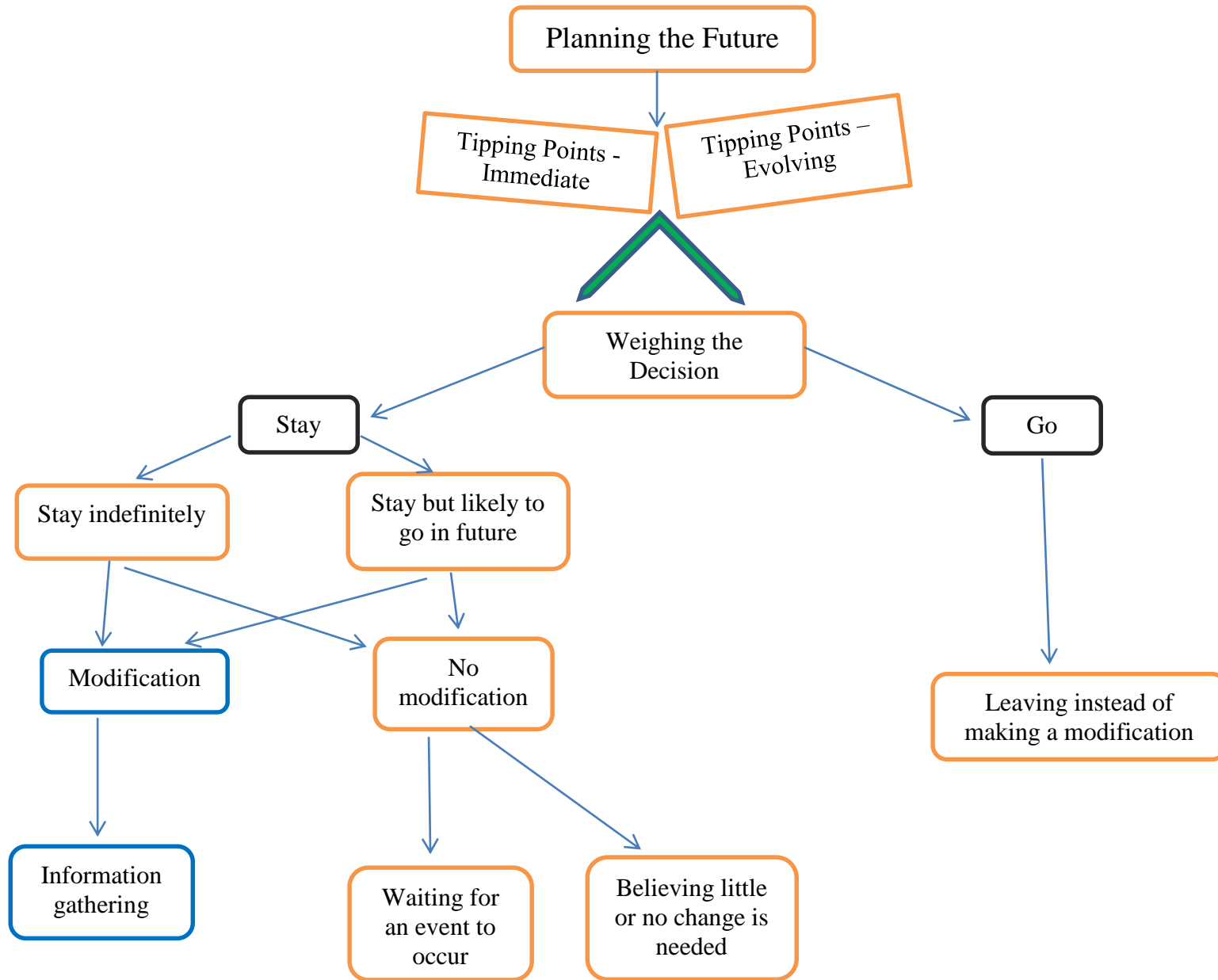
The core category is Planning the Future. Other main categories include Tipping Points, Weighing the Decision, and Information Gathering. The subcategories of Tipping Point are Immediate and Evolving. The subcategories of Weighing the Decision are Stay or Go and Home Modification. Each subcategory has conditions. Strauss and Corbin (1998) define *conditions* as “sets of events or happenings that create the situations, issues,

and problems pertaining to a phenomenon and, to a certain extent, explain why and how persons or groups respond in certain ways” (p. 130). The conditions of Stay or Go include Health Status, Connected to Home, Finances, Home Offers Control, and Support Network. The conditions of Home Modification include Health Status, Home Environment, Finances, Participation, Existing Knowledge, and Temporal Aspects. The details of each category, subcategory and condition will be explained later in this chapter. The researcher presents them here to give the reader an initial understanding of the main results of the data analysis.

Decision-Making Process

While the researcher was analyzing the data to make connections between these categories and subcategories, the well older adult process for deciding whether to make a home modification became clear. This process is depicted in Figure 8 and described below.

Figure 8. Decision-Making Process



As this researcher stated previously, the core category that emerged from the data analysis, to which all other categories and subcategories are linked, is Planning the Future. The well older adults who participated in this study had considered or were currently considering how to prepare for their futures. While planning for the future, the participants encountered or anticipated encountering changes, termed *tipping points*, that prompted them to make important decisions about their future lives. As depicted in Figure 8, some tipping points were immediate, requiring quick action from the participant, while others were evolving, developing slowly or having the potential to develop, contributing to future decision-making. In addition, tipping points were present in making the decision to remain in the home or go to a different setting and in the decision of whether to make a home modification.

The first decision made by the participants was whether to stay in the home or go to a different setting. Every participant had considered this decision, weighing the impact of the tipping points. This decision to stay or go was paramount to the decision of whether to make a home modification, although each decision involved distinct tipping points. For example, Connie experienced an immediate tipping point when she had to leave her home in New York to move closer to a cancer specialist in Baltimore. In contrast, Donald's tipping point for leaving his home was still evolving as he related, "you got to think in advance as much as possible and hold off as long as you can without being stubborn about it. You know there's a point where you gotta say [it] makes sense to go." Penny's tipping point that caused her to consider leaving her home was potentially evolving and was tied to physical and cognitive abilities: "I guess if one of

us—either one of us, were permanently handicapped and if that—I guess if either one of us required 24 hour, live-in care, it would be time to leave.”

Several participants anticipated an evolving tipping point of their home and property requiring too much work for them to maintain. This work involved inside maintenance (e.g., cleaning, basic upkeep) and outside maintenance (e.g., landscaping, mowing, snow removal). They assumed that as they continued to age, they would experience a decline in strength and endurance and be unable to care for their home.

The decision of whether to make a home modification was influenced by different tipping points—some immediate, some evolving. Donna fell from her bicycle, resulting in a fractured right hip. This was an immediate tipping point that prompted her to install a stair lift. Alice and Carl considered an evolving tipping point when they decided to modify their kitchen space: “part of it was for resale, but a lot of it was in the anticipation of enjoying the facility more.” A potentially evolving tipping point for Mark and Rachel was the anticipation of needing first-floor living arrangements. They had initially enclosed an area that was a deck to make a first-floor bedroom in anticipation of Mark’s father coming to live with them some day. That never occurred, but while they were in the process of having the space modified, they “had this plumbed so it could be a shower if we needed to make a shower down here.”

Whether the tipping points were immediate or evolving, each contributed to the participant weighing the decision to stay or go and the decision to make a home modification or not. As the reader can see in Figure 8, when weighing the decision to stay or go, the participants arrived at one of three possible decisions: (a) stay indefinitely, (b) stay but with the likelihood of leaving in the future, and (c) go.

Participants who planned to stay in their homes indefinitely had a strong desire to remain in their homes as they grew older “for as long as possible” and “until they carry me out.” Most participants who made this decision did not discuss the possibility of leaving the home; they had planned to stay in their homes until they die. As the reader can see in Table 4, most of these well older adults decided to make a modification to their home that would facilitate their ability to stay there. Modifications ranged from adding a room to accommodate first-floor living to replacing a bathtub with a walk-in shower to replacing round doorknobs with lever handles. Some participants were also considering further modification to the home if needed in the future.

Table 4

Time Planning to Be in the Home Compared With Modification Action

Home Modification Action	Leave Home in 5 Years or Less—Go	Leave Home in 5–10 Years	Stay in Home as Long as Possible
Made home modification	0	2	13
Considering home modification	0	1	2
Did not make home modification	2	1	1

Other participants made the decision to stay in their homes for now but planned to leave their home within the next 5 to 10 years. Carl stated,

My thinking is probably another 4 or 5 years at the most. We still have some work to do on the house to get it ready for sale, and so we’re focused on that.

We’ve put some additions onto the house and what not, but they’re not complete in terms of being ready for sale and what not, so that’s one of my jobs to finish that up.

This group of participants were anticipating having a physical decline in the future that would make maintaining the home too difficult. They also expressed a fear, for some an almost certainty, that some event would occur that would affect the health of themselves or their spouse. This event would force them to move from the home because one person could not manage the home alone or one person would not be able to care for the other in a disabled condition. Penny predicted,

I guess if one of us--either one of us were permanently handicapped and if that--I guess if either one of us required 24-hour, live-in care. That would be the time to make a change, and then we would probably go into a retirement home and with the handicapped spouse maybe in sheltered housing and the nonhandicapped spouse in independent living, and so forth.

Many participants had already planned that they would spend their final years in a setting that would have fewer physical demands on them such as a retirement community or condominium. As the reader can see in Table 4, some had made or had considered making a home modification even though they were not planning to stay in the home indefinitely. They designed the modifications to make their homes comfortable and efficient for them in the present but also to be aesthetically pleasing, as they were concerned with resale value. Some modifications made by this group of participants included installing new lighting in the kitchen to improve the ability to read recipes and see during food preparation and adding a bathroom on the first floor of the home to decrease the need to negotiate steps multiple times per day.

Participants who made the decision to stay in their home (either indefinitely or with a plan of leaving in the future) and who then planned to make a home modification

entered into a process of information-gathering and decision negotiation. The researcher will present this process in depth later in this chapter.

A few participants who made the decision to stay in their homes did not make a modification. There were two primary reasons for this: (a) they were waiting for an event to occur, or (b) they did not believe a modification was needed, as is depicted in Figure 8. Those who were waiting for an event to occur felt they could not “predict the future.” They believed they did not have enough information or insight to know what modification would be useful to them in the future and would consider a modification only if an event occurred, such as a disabling illness or injury, that made a modification necessary and specific. They saw no value in making a home modification at the current time.

Other participants indicated they did not need a modification in their home for two reasons. One, the layout of the home, a ranch style, was conducive to performing all ADLs on one level. In one case, although areas of the home on that one level may not have been ideal for aging-in-place (e.g., a bathtub with no grab bars or narrow bathroom doorways), because the participant did not have to negotiate stairs, she did not believe she needed to make any modifications to the home. Penny stated,

So we did build it with one-floor living in mind. We do have the master bedroom and actually an extra bedroom on the first floor. So, essentially just my husband and I here are now; we're just really on the first floor. The bathrooms are not handicapped accessible, and that was an issue when I was on a walker and--but I do have a hall bathroom that I was able to get in and out with the walker.

Second, if a participant was not having difficulty completing ADLs, she did not see the need for a modification. Elizabeth noted the following when she talked about the possibility of moving her washer and dryer from the basement to the first floor:

I could add a room off to the kitchen and put a washer and dryer in there. But the other part of me says, you know, as long as you can use the steps, use them. You know, if you don't use them, you know they say "use it or lose it." It's not bad to have to walk up and down.

Thomas and Rebecca, a married couple, planned to leave their home in fewer than 5 years; this is depicted in Figure 8 as a Go decision. Rebecca expressed a desire to stay in the home as long as they could. In contrast, Thomas, a realist, thinks they will leave their home in 2–3 years and has already started an active search for their next home. This couple lived in a large home on a large estate. Thomas expressed, "we want this, but without all the work." Both Rebecca and Thomas related that they did not think they would be able to continue to maintain the home and property in the long term. Although they were conflicted at times about staying, Rebecca conceded that they may consider a modification if it could keep them in the home, Thomas countered stating,

We've made no physical changes to the property and don't anticipate doing it. I certainly cannot imagine putting a ramp in because even though that would get us in and out of the house, the rest of the place would be deteriorating around us, it would be time to go once we reach that point; I don't anticipate any physical changes to the property itself.

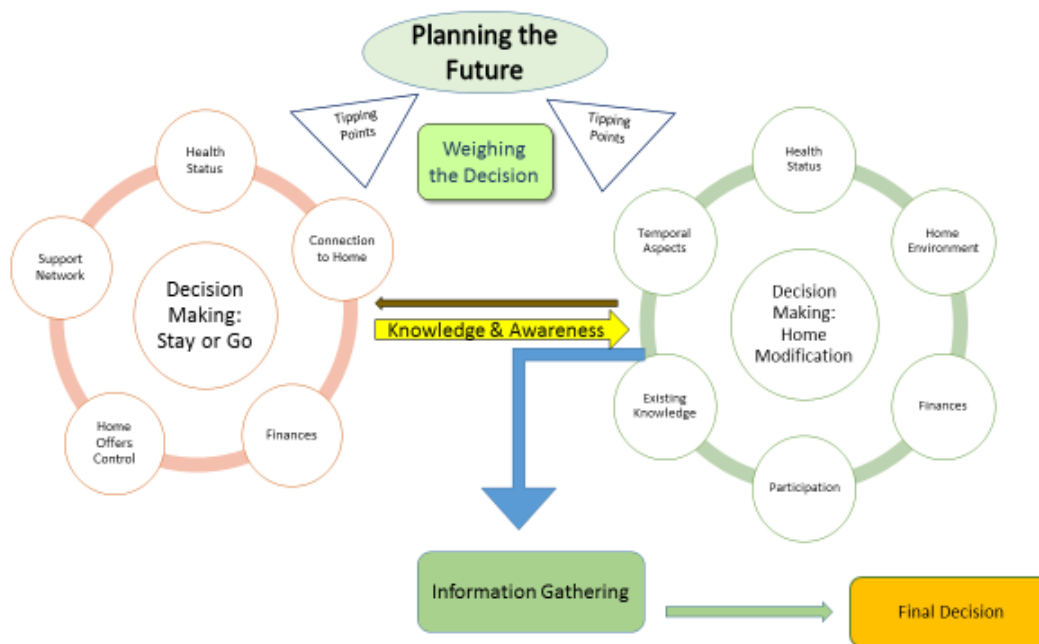
In effect, Thomas reached the decision that they will leave the home rather than make any modification that might allow them to stay there.

In this section, the researcher explained the basic decision-making process through which well older adults progress when deciding whether to make a home modification. The participants made the decision to stay in the home or go prior to deciding if they would make a home modification. These adults weighed their decisions based on immediate or evolving tipping points. In the next section, the researcher will delve deeper into the data analysis results to explain the Theory of Home Modification Decision-making: Well Older Adults (THMD: WOA).

The Theory of Home Modification Decision-Making: Well Older Adults

The THMD: WOA model is displayed in Figure 9. The reader is encouraged to refer to Figure 9 frequently while reading the description of the theory below.

Figure 9. Theory of Home Modification Decision-Making: Well Older Adults



The researcher will offer a general description of the THMD: WOA in the section below and will then present a detailed description of various elements of the theory later in this chapter.

Theory Description

Well older adults enter into the home modification decision-making process while planning for their futures. This planning involves actively taking responsibility for the next stages of their lives. Well older adults demonstrate this responsibility in multiple ways: (a) purging unneeded belongings, (b) obtaining assistance for home and outdoor maintenance, (c) making behavioral changes (e.g., cleaning 1 room per day rather than the entire house, giving up climbing on tall ladders), and (d) making decisions about their future living environment.

While planning for their futures, well older adults encounter tipping points that they must consider while weighing the advantages and disadvantages of their decisions. These current or possible future events would cause negative changes for the person or in his or her environment. As detailed above, the tipping points may be immediate or evolving. Prior to making a decision about whether to make a home modification, well older adults first consider whether they are going to stay in their homes or leave as they grow older. The following conditions influence this decision: (a) Health Status, (b) Connection to Home, (c) Finances, (d) Home Offers Control, and (e) Support Network. The researcher will explain each condition in detail later in this chapter.

As depicted in Figure 9 by the thick yellow arrow, once well older adults make the decision to stay in the home or go, they have increased knowledge to consider the decision of whether to make a home modification. That knowledge includes an awareness of whether they plan to stay in their homes indefinitely, for the next 5–10 years, or for 5 years or less. This awareness influences if well older adults make a modification, the type of modification they make, and the reason they make the modification. Several other conditions influence the home modification decision: (a) Health Status, (b) Home Environment, (c) Finances, (d) Participation, (e) Existing Knowledge, and (f) Temporal Aspects. The researcher will also explain these conditions in detail later in this chapter.

After deciding to make a home modification, well older adults engage in a process of information-gathering and decision negotiation. They seek information from different sources, such as (a) their own prior knowledge, (b) specialists, (c) family members, and (d) others who have a similar condition. Once information is gathered, well older adults

then begin the final stages of making the home modification decision that may involve making the decision by themselves or negotiating the decision with their spouse.

The final aspect of the theory is when some well older adults reconsider the decision to stay or go after considering the decision to implement a home modification. This is depicted by the brown, thin arrow in Figure 9. That group of adults who choose to stay in their homes for 5–10 years will need to revisit their decision to make the final determination to stay or go.

In this section, the researcher presented a global description of the THMD: WOA. In the following sections, the researcher will expand those elements of the theory that require further elucidation.

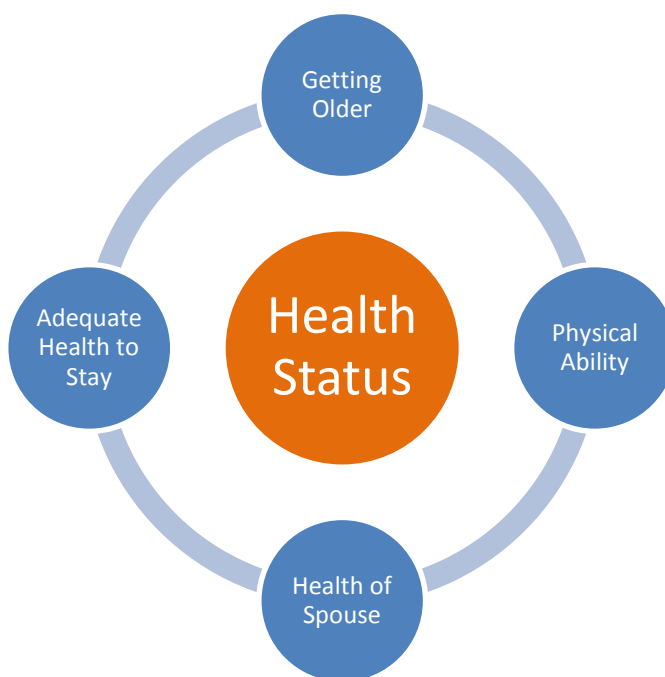
Decision-Making: Stay or go.

As the researcher explained above, making the decision whether to remain in the home is part of how well older adult participants in this study planned for their futures. This decision preceded any decision about making a home modification. The researcher will now explain the conditions that influenced the decision to stay or go.

Health status.

As depicted in Figure 10, the participants expressed several health-related reasons that influenced their decision to stay in their home or go.

Figure 10. Conditions Influencing the Decision to Stay or Go: Health Status



Many participants were concerned about how a change in their physical ability would affect their capacity to stay in their homes. They were predicting they would have a physical decline that could act as an indicator of when it was time for them to leave the home.

Alice: I couldn't do it by myself, and so it takes two people to take care of this place, and fortunately, two people by and large have been available to do [that], but I don't think in 5 years, I don't think we'll have the desire to do it, in addition to the energy to do it.

Thomas: Getting in and out of the cab [of my tractor], there's a couple of steps, and it's kind of a little wiggle and it's a jump to the ground, and when I can't do that anymore, it's time to go. I think everybody sort of knows when they get that threshold where it's just getting to be too hard.

Elizabeth: My mother had macular degeneration and that's ... you always worry ... I always worry about that, although the doctors tell me there's no sign of it yet. If my vision would fail, I would have a hard time cooking, you know, and that would be a problem.

Karen: It's sort of like, "okay we'll make this work," and you know—I don't know at what point it's going to be "no, this isn't going to work," you know, I can't do it. It'll be more of a psychological blow than a physical blow.

Nora: What are we going to be like in 10 years? Because then our bodies are old, and we're having a hard time keeping it together, and not being able to take care of each other or to do some of the basics is worrisome to me.

Several participants also described a general awareness of getting older and an understanding of what aging could mean for the future, including how it may affect their future living environment.

Rebecca: But I can tell you right now, when we look at a place, I will now look at things like stairways. See, I didn't before, but from the age I am now, 69, I will look. I say, you know, "Why move here and then in 2 years have to move again?"

Gerald: Of course, I got nothing to really be depressed about. I mean, you know you're getting older, but that has never really worried me. It sort of surprises me every once in a while when I realize how old I am and still living in this house.

Alice: Part of that [deciding to stay or go] actually has to do with the aging process. We don't have as much energy and stamina as we used to have, so we get worn out, but we wanted to stay here as long as possible.

The majority of the study participants were in very good health and very actively participating in activities in the home and in the community. Being in good health and believing one would continue to have good health had an influence on the decision to stay in the home. These individuals believed they had adequate health to stay.

Alice: We're in reasonable good health, so we saw no reason not to try it.

Karen: Yeah [we are in our] early 70s. We think despite all the limitations and all of the surgeries and all that, we think we're pretty spry. We think we're getting around reasonably well as we look around. Now for the age, I don't know if we're good, or average, or not good, but I feel we're doing okay for our age ... our ages, so we are going to stay.

Participants also considered the future health of a spouse when they considered whether they would stay in their homes as they grew older. Participants expressed concerns about not being able to maintain the home by themselves or not being able to care for a sick or disabled spouse alone. Alice and Carl had the following discussion:

Carl: Five years from now I would have to say that we'll be pretty close to selling this house, and where we go from there will be, probably a continuing care type of retirement community or an apartment or something—[assuming] our health doesn't significantly change other than it's a slow deterioration.

Alice: Yes, because I can't take care of this place by myself. I mean we just—not only did he have foot surgery in February, he also had part of his lung removed in June and of course by the time we got to June the grass was growing [chuckling].

I couldn't do it by myself, and so it takes two people to take care of this place.

Rebecca and Penny shared similar thoughts:

Rebecca: But there will come a time when we might have to leave; I think it will be based on health. The other thing it would be based on is as long as he's here. One person alone can't manage this house. So I guess if something—if one of us dies, the other one would have to get rid of it.

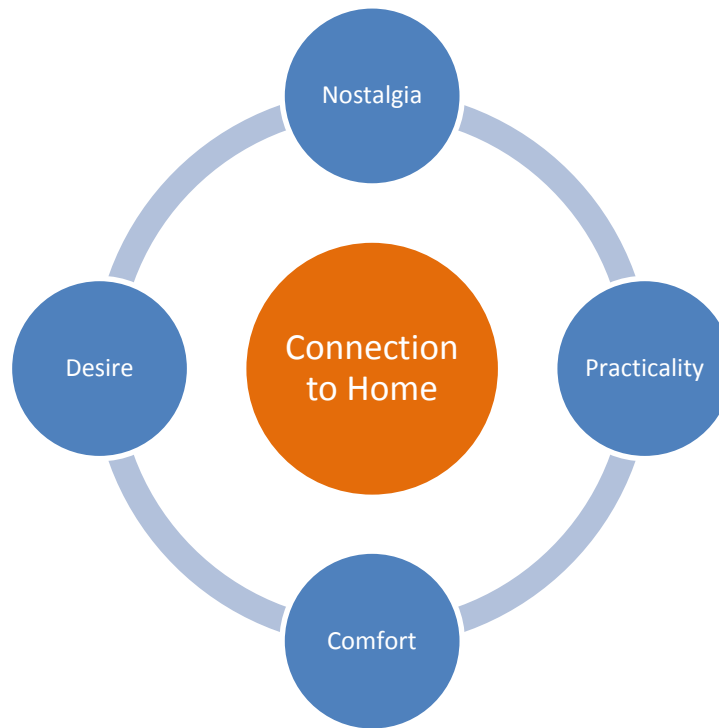
Penny: I guess if one of us, either one of us, were permanently handicapped, and I guess if either one of us required 24-hour, live-in care that would be the time to make a change. Then we would probably go into a retirement home and with the handicapped spouse maybe in sheltered housing and the nonhandicapped spouse in independent living, and so forth.

Connected to home.

Being connected to home was an influential condition for many of the participants when they decided whether to stay in their homes or go to a different setting. Figure 11 depicts the four aspects of being connected to home.

For many, this connectedness involved an emotional attachment, similar to that described by Tanner (2011). People develop relationships with their homes, whereby they attach significance to objects and spaces within the home (Tanner, 2011).

Figure 11. Conditions Influencing the Decision to Stay or Go: Connection to Home



Several participants expressed a type of connectedness to the home distinguished by a sentimental attachment to the home and the objects within it; they felt that the home was an extension of themselves. This was a nostalgic connection to the home.

Rebecca: I become very attached to things, and I was an antiques dealer. I sold 18th-century American furniture and all the pieces in this house and 40 years we've collected, and they mean something to me. It's going to be very hard for me to pare down. A lot of things have memory, right? I don't want to get rid of them.

Nora: Number one, we love our home. We spend many hours out there in the spring, summer, and fall reading. We love our home, and we love our neighborhood.

Many other participants expressed a strong emotional desire to stay in their homes. They told this researcher that they wanted to stay in their homes “as long as possible” and “as long as we can until they carry us out.” This emotional connectedness to the home was a strong desire to stay in the home and leave only if absolutely necessary. Participants often defined *absolutely necessary* as significant physical disability or death.

Elizabeth: I hope I am still here. [In 5 years], I’ll be 74, and my hope would be that I would still be here. I feel like there’s enough things out there that you probably ... I could probably make do. So, I hope I’m still here.

Candice: Oh, I would hate to leave. That would be like the bitter end. I would [stay] until I really couldn’t do it anymore.

Rebecca: As long as I have breath in my body, that’s me. As long as I can make the stairs. As long as I’m physically able. Even if I slow down, that’s not what I mean by physical. I mean a physical something that you can’t walk or something like that, that would make me leave, but that’s probably the only thing.

Jonathan: I don’t really want to leave. I have no intentions to leave unless something unreal happens that would force me to do that, but as long as I can continue to do what I’m doing, I will stay.

Penny: As long as we’re both physically and mentally able to handle everything, we will stay here. You know, I think probably if either one of us were disabled, if we could manage with just care during the day, we would stay. If one of us would die, we would probably have to sell it.

Although these participants expressed a passionate desire to remain in their homes, some of them were conflicted as to how to balance that desire to stay with the practicalities of making modifications to make staying in the home possible. In two of the couples, the pairs had different ideas about how long they would stay in the home. The members of both couples expressed a desire to stay in their homes, but the women expressed a stronger desire to stay in the home for a longer time, while the men expressed the thought that they would need to leave the home within the next 5 years. The men seemed to be expressing that leaving would be a practical decision, whereas the women were expressing a more-emotional response with their desire to stay in the homes.

Some participants conveyed a practical connection to the home and practical decision-making strategy, in contrast to a pure emotional-based strategy, that prompted them to want to stay in their homes. They had a plan of why it made sense for them to remain in their homes.

Linda: So his choice was to stay at home if, in fact, I wanted to live here after he died. So we decided since we have two stories and he couldn't walk upstairs, we needed to put an addition on. I mean we had decided we were going to stay here, and it was just a matter of figuring out how we were going to do the new addition.

Elizabeth: You know my hope would be that I would certainly be able to be here. I'm not far from the senior center, not that I go to it, but there's senior ride and stuff like that. Baltimore County has services, so my thought would be if things happen I could always get senior ride, I could get cabs. If I can't get out food shopping, Giant has Pea Pod or whatever it's called.

Thomas: Well, this is the old age-in-place thing, and I think that's what we want to do, age in place. So it just makes sense to stay where you're comfortable, as long as you can.

For Thomas, being comfortable at home made sense; it was practical. Many participants agreed with Thomas, although they conveyed a deeper meaning of what being comfortable in the home meant to them and of how it factored into their decision to stay. Comfort meant convenience and familiarity.

Donna: I like being here; it's convenient, not to stores or anything, because you have to drive. I'm close enough that I still go and do [activities] in the city, theater, art museums, concerts, lectures, blah, blah, blah, and I hope to continue doing that kind of stuff.

Alice: It's comfortable to be here, and I wasn't willing to go out and look for any other place that would have been comfortable. I didn't really want to move; we had too much stuff unfortunately to really be willing to move very frequently.

Gerald: I would certainly try to stay here, but I had never thought about going any place else, but it would be much more difficult I know. The food, eating would be difficult.

Nora: As we start looking at our friends who have moved to retirement homes, I have work benches and saws and screws and, you know, all that stuff that if we need to fix something, I know exactly where something is that I can use. I can't imagine not having that, you know, that would be in some retirement community ... and I'm without my stuff.

Finances.

Finances also factored into the participants' decision to stay or go. These concerns focused on financial resources, the cost-effectiveness of staying in the home, and the need for assistance to stay in the home, as depicted in Figure 12.

Figure 12. Conditions Influencing the Decision to Stay or Go: Finances



Several participants mentioned concern about their financial resources in general and about managing those resources. Below are two exemplars:

Barbara: So our grocery bill is probably one-third, would be one-third more if we were eating meat. I don't know how a family of four does it these days, I swear. You know it—the cost of gasoline, we have to bring the lettuce from California. It's just very expensive.

Donald: You know, like, how long are you going to hold off before we tell them we're interested. Put down a deposit [in a retirement community]. That's one aspect of it; the other is to let it go too long and then you're trapped [at home].

For some participants, making the decision to stay or go meant considering cost-effectiveness. They weighed the cost of maintaining a home against the purchase of a new home or moving to a different setting:

Barbara: So like a black hole for money. You know, oh we have to [get] a new roof, oh we have to have a new furnace, oh we have to have ... so when we were getting ready to leave there, I said I want a new house where for 10 years we don't have to replace anything. So we didn't, but we moved back to the Baltimore area in 2001.

Donald: Well, I'd tell them [an older adult contemplating aging-in-place], "You'd be surprised how much it cost to go from your house to some other place, and you better develop some kind of scheme in your mind how to save the money or set aside the money for such a plan if you need it in a hurry."

Other participants were concerned about how much money they would need to spend to hire someone to assist them with various tasks if they chose to remain in their homes as they aged. Many participants had already hired or were considering hiring someone to assist them with household tasks, lawn maintenance, and snow removal. This was part of their plan for success to stay in their homes as they age. Some participants were also considering hiring a live-in caregiver in the future.

Donna: So one of the things I would say to people if they decide to stay is to "Line up, just as you have your doctor and your lawyer and your financial person,

you need your grass cutters, you need your plumbers that you can call, you need, in my case, full service.” In other words, “Get the support services in place before you need them.” I also had it [the basement] set up so that I can pay for a caregiver, if I need one.

Elizabeth: I’ve often thought, I guess I originally thought I would be in a condominium by this age, but then I feel like the chores I pay people to do is like a condo fee, you know? You know I pay somebody to shovel the snow. I pay somebody to cut the lawn. I could pay somebody to do the landscaping.

Alice: You know, finding help may be more important to us down the road in a couple of years. Finding handy men that know what they’re doing—that’s hard. It just helps to have people who can help do some little things to help you stay in your own home. Now so far we’re okay, you know, he’s mowing the grass so he’ll be able to do things, but, you know, there may come a time

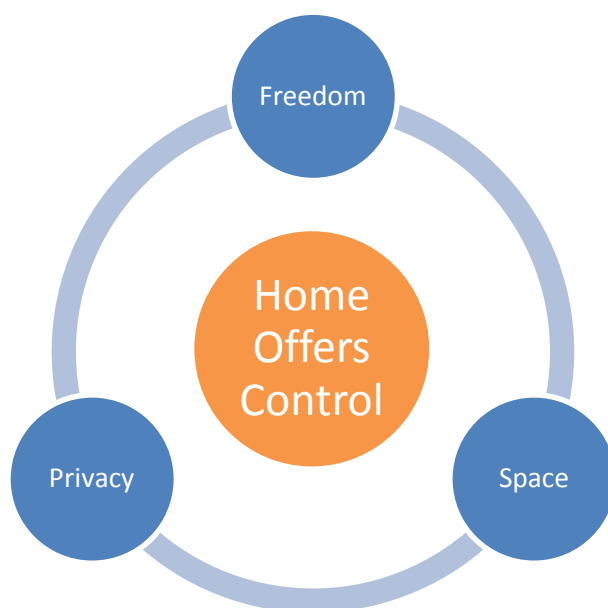
Rebecca: If I can’t clean as well as I used to, you can hire somebody to clean. If we can’t do all of the yard work, we’ll hire somebody to do it, which of course is unrealistic, because what people would charge to do what we do would be astronomical.

Karen: And we tease; I said, “Well I got to get somebody that can help with the garden, and they also have to know nursing skills. Also, be able to weed!” You know, in truth we could, we could live on this level and somebody else on the lower level who would to help out. We’re very fortunate that we have the resources to find other ways to get things done.

Home offers control.

The fourth condition that influenced the well older adults' decision to stay or go is having control. For the study participants, *control* was conceptualized as freedom, privacy, and space.

Figure 13. Conditions Influencing the Decision to Stay or Go: Home Offers Control



This group of well older adults valued their privacy and were concerned that it would be lost if they moved from their home to another setting. For them, privacy was being able to do what they wanted without having to answer to anyone.

Thomas: I like the privacy out here. I like to walk out in my yard and have nobody see me. I can do whatever I want.

Elizabeth: I don't like the idea of living in an apartment with a whole lot of people. I had a friend who moved to Charlestown, she stayed 6 months, and she found it intrusive. Now she was 74 when she went in, so I think she was too young, but she said if she didn't show up for dinner, people wanted to know where she was. I don't want people trying to figure out what I'm doing all the

time. You know, I don't have a lot of friends, but I also like my privacy, so I don't think I'm the kind to take too easily to go into a place like Charlestown.

Participants also enjoyed having their own space, communicating that *space* was the ability to gain distance from other people, if desired. Having space in their own homes was one way these older adults could control their social interactions with others.

Thomas: Because it's so big, we can be doing projects and go long periods of time without seeing each other, but we know basically where everybody is so we're not on top of each other. We have our own space; I like that. The grandkids come over, there's plenty of room.

Donna: I don't do well with people as in living in proximity. I like it here in my own space, and I go out for my interactions. I have my own personal space.

In addition to privacy and space, participants gained a sense of control through the freedom being in their own homes provided. For some it was freedom to plant a garden, mow the grass, and have their own schedule. For others, it was a sense of no boundaries and peace.

Donald: My first reaction was I looked around [the senior living community], came in through gates, and sort of explain yourself to the guard there, and I noticed that, you know, the whole place is surrounded by a huge fence. I asked my wife, I said, "Do you think that fence is electrified? Am I going to have trouble getting out of here if I want to escape?" I had the feeling that I was kind of trapped in a way. I didn't feel like there was this much freedom to the place as I have here. I walk in; I walk out. I go to the store on a moment's notice. I go out in the front street right there, I do whatever I feel like doing, and I didn't see any,

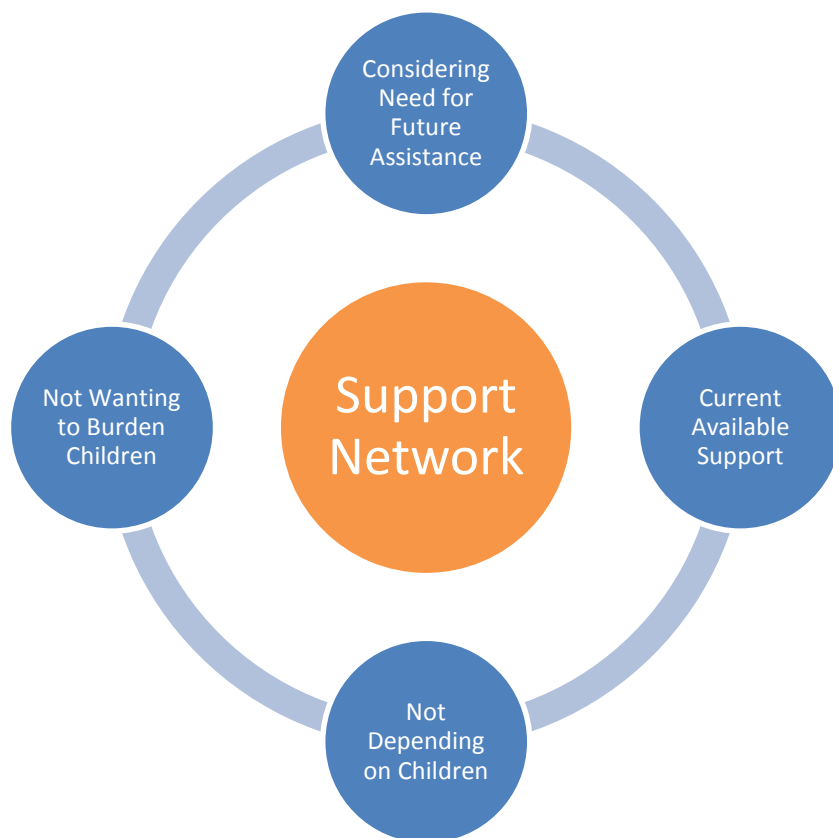
I mean, despite the fact that they have a million things to do, club this, club that, you know, you name it, if you can play it, somebody will do it with you. I still didn't feel I had the freedom. The feeling isn't a natural kind of feeling. I felt penned in and confined—imprisoned.

Gerald: I actually know many people over there [at the senior living community]. I see one lady over there quite a bit; she and I went to school together. It was just a coincidence my wife and I ran into her and her husband some years ago, and then her husband died, and she has a son and grandchildren. She's over there, got a very nice place, costing a fortune, a fortune over there, and she was telling me about people being depressed, and I noticed the last 6 months or so, she's getting depressed, and they know they're there to die to be honest with you. I have never felt like I was here to die, you know, and it's a different feeling.

Support network.

The final condition that influenced the stay or go decision-making process was having a support network. Figure 14 depicts the four properties of this condition.

Figure 14. Conditions Influencing the Decision to Stay or Go: Support Network



When the researcher asked participants to consider where they saw themselves in 5 years, most participants began discussing their support networks. Whether participants thought they would be living in their home or moving to a different setting, they all recognized the value of a support network to make staying in the home possible or at least easier.

As the participants contemplated where they would be in 5 years, they discussed their current support. Some thought they had adequate support services in place to help them remain in their homes now and in the future, whereas others lamented their lack of support.

Thomas: It's not as if we have neighbors or anything like that. So what was an advantage at one point can become a disadvantage. So we have no support

network. In that sense, we're vulnerable, and our arrangement here, even though we're presently very comfortable, is fragile. So there's no support network for us.

Elizabeth: They will always be here for me, and I have wonderful neighbors. I mean I'm very lucky. Across the street, there's an Indian family, and it's a husband and wife, and they watch their grandchildren all the time, but in my mind, that woman is the Neighborhood Watch. She doesn't miss a trick.

Penny: We do have someone cut the lawn, and recently I've sort of given up my shovel, and I have a lawn maintenance system now, about 3 times a year, I have a fellow that comes in with his sons, and he does the mulching and the weeding and trimming. I don't do that anymore, but I just stopped doing that. I have a housekeeper come a couple times a month, and I do the light cleaning, and she does the heavy cleaning.

In a logical flow of thought, participants next considered what type of assistance they might need in the future if they decided to stay in their home as they aged. They expressed concerns about what type of support they would need that varied from home maintenance needs to personal care needs.

Carl: My mother always used to say, she said, "One of the things you have to do is cultivate a very good relationship with people 20 years younger than you are," and she was good at that. I don't know that some of these people would have taken care of her so much, other than, you know, the superficial level, but so we've been trying to cultivate people to help out.

Elizabeth: I could pay somebody to do the landscaping, and I will if I have to, but I like to do it now, such the little bit that gets done.

Jonathan: I've thought about maybe getting someone to do some other things that I, well, that I can't do, like I don't like to paint, you know, and I want to get that door and my back door painted, but that's just maintenance.

Donald: I'm going to have to decide to have somebody mow the lawn for me, because it's just too much.

Donna: I had it [the basement] set up so that I can have a caregiver if I need it.

Discussing current and future support networks led many participants to reveal their thoughts about the help they receive or may receive from their children. Although some participants acknowledged that they received assistance from children for meals or grocery shopping at times, many divulged that they were not depending on their children for assistance or that they did not want to burden their children with their current or future needs.

Carl: I take care of her as long I can take care of her, but if something happens to me while I'm taking care of her, there's no back-up. There's no back-up plan. Initially we thought, well, our back-up plan was our son; well, reality has set in, and that's not true, and so we've been thinking about, well, who's our back-up in the event that both of us become not able to take care of ourselves. Who's going to make those decisions, and we don't have an answer to that yet.

Mark. Although we're not counting on them, because they're both working full-time and one's in Annapolis, are very busy with volunteer things, and an hour away, too. They chose to be an hour away so that we wouldn't be in their soup, so to speak.

Jonathan: My daughter lives over in Parkville, and she's still working, she works for BG&E, and her passion is she trains dogs. She has two; she has a Corgi and she had a Dalmatian, and they're always in competition, you know, agility and obedience training. She trains the dogs, and that's full-time. She's always out on competition here and there, and so she doesn't have time to come over.

Rebecca: If we asked them, they would do it. They're nice kids, they would, you know, one would do it probably easier than the other, because one has kids and the other doesn't; so but they would do it, but we don't want to impose. Thomas doesn't want to be indebted to anybody, and I feel the same way. You don't want to impose on them.

Donald: Our daughter who's close by, she and her husband both work and have 2 kids. They're doing a marvelous job keeping active and doing things: swim teams, lacrosse teams, and soccer teams, and stuff like that. That's all vital to kids these days otherwise, they sit around the house twiddling their thumbs and that would be that—so much for childhood. So we don't want to be burdening in that sense.

Summary.

In this section, the researcher explained the conditions that influenced the Weighing the Decision: Stay or Go element of the THMD: WOA. These conditions included (a) Health Status, (b) Connected to Home, (c) Finances, (d) Home Offers Control, and (e) Support Network. Each condition included properties that specifically affected the stay-or-go decision. As depicted in Figure 8, once the participants made the decision whether to stay or go, they were then equipped with greater knowledge about

where they planned to spend their future years and with a heightened awareness about how they might achieve that plan. This led the participants to consider the decision of whether to make a home modification. The following section will further explain the six conditions that influenced the home modification decision-making process.

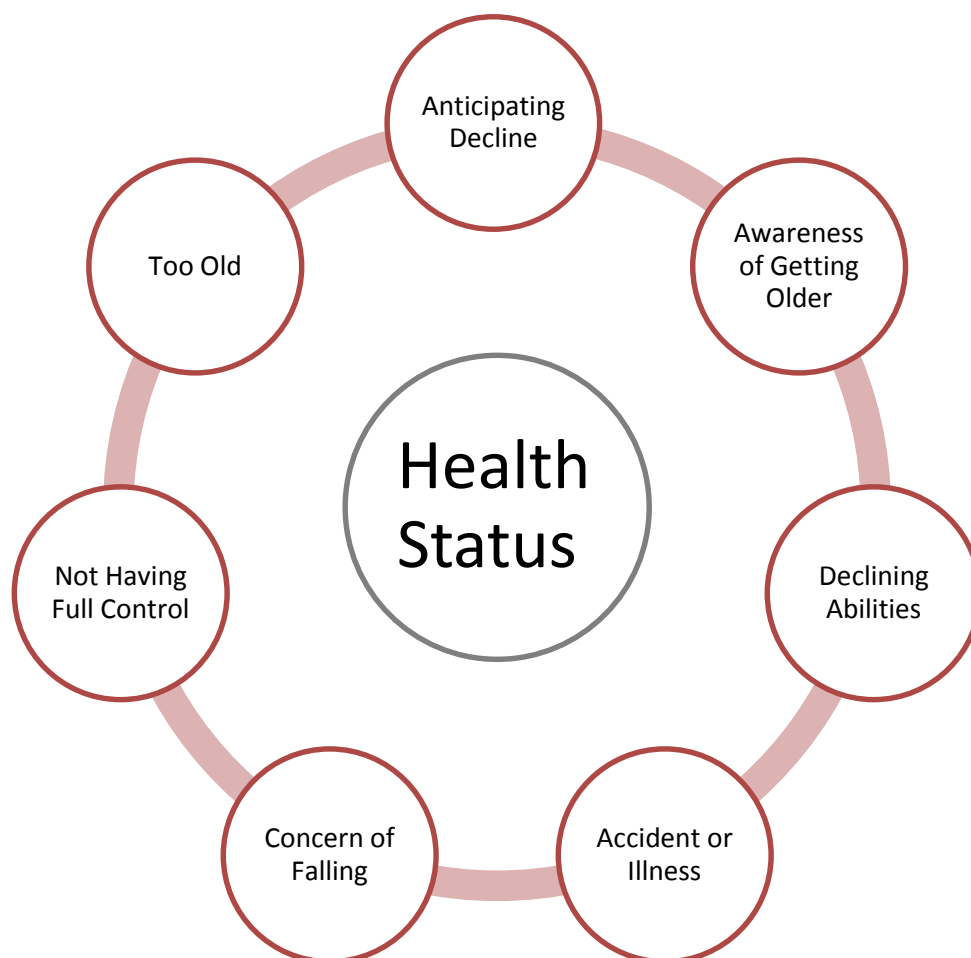
Decision-Making: Home modification.

The six conditions that influenced the home modification decision-making process of the well older adult participants in this study included (a) Health Status, (b) Home Environment, (c) Finances, (d) Participation, (e) Existing Knowledge, and (f) Temporal Aspects. Although Health Status and Finances were also conditions that affected the stay-or-go decision, the properties of those two conditions are unique to each decision.

Health status.

Participants expressed various concerns about their health that were significant in their decision of whether to make a home modification. The properties of this condition are illustrated in Figure 15.

Figure 15. Conditions Influencing the Decision Whether to Make a Home Modification: Health Status



This condition has the most properties, hence the most variation, of all the conditions that influenced the home modification decision. The properties range from more-tangible concerns such as current or anticipated declining abilities to less-tangible concerns such as not having full control over the future and believing one is too old to bother with making a home modification.

Many of the participants anticipated that their health would decline in the coming years. For some, such as Thomas, this health decline would act as a signal that it was time

to move from the current home. For others, the anticipation of a health decline was an impetus to consider making a home modification.

Elizabeth: And so I see that kind of [visual] limitation come in. My mother had macular degeneration, and that's, you always worry. I always worry about that, although the doctors tell me there's no sign of it yet. So, you know, you worry about that kind of deterioration.

Alice: And also [we did the modification] with the understanding that we were aging. For instance, the room right behind you, which he is using as his office right now, has adjacent to it a full bathroom so that if one or both of us can't climb the steps anymore to get up to the second floor where the bedrooms are, we'll have a bedroom down here. And the bathroom was designed so that if one of us is in a walker, it's a no-lip shower so that you can walk into that with appropriate grab bars and that sort of thing.

Rebecca: One thing is I never, you never, think you're going to get old. I have a lot of friends who fear old age. I don't fear it, I know it's gonna come; there's absolutely nothing I can do, and I realize that someday I'm going to be limited.

Gerald: The day's going to come when I can't walk around like I am now, and I know that. My knees are what bother me now, they just hurt, and I've had shots, they keep giving me more shots. I've seen people recuperate from knee [replacement], and that's a long situation.

Karen: I'm 74; in 5 years, I'll be 79. I would imagine I would be less mobile, I hope my mind is still active and alert and am able to function. So 5 years down the road, I don't see myself as able to do as much [as] I'm trying to do now. I will

stop my board work, I would imagine because of transportation, trying to get there. When will I stop driving? That I think about.

In addition to anticipating a health decline, a few participants discussed actual health declines. For Linda, her husband's ALS diagnosis and resultant decline prompted home modifications. Rachel modified her bathroom due to her decline, Jonathan changed his doorknobs, and Nora was considering a modification to adapt to her decline.

Linda: [He was] having difficulty walking to bed, so at some point we knew we couldn't get upstairs. He was progressing, and, you know, we put handrails upstairs earlier in the bathtub, and we put handrails to the basement so he could hold on while he was going down.

Rachel: I go to physical therapy for me once a week. It's been my back, really; I have a back problem, and I've always had it. Pilates on the reformer is what it is. It has been the biggest help to me and keeps me going, keeps me walking and doing what I need to do.

Jonathan: I realized I had to come up with a better idea of opening that door. I usually go to Home Depot, I'm kind of a nut on hardware and stuff like that, and I happened to see them there, and I thought that's the time, now's the time to make that change because it was getting more difficult for me [to open the door], and it's easier on my hands.

Nora: I couldn't like put any weight on my shoulder to get up [from the bathtub], and you know I don't know what [made] me think I could get down there and take a Jacuzzi and feel good about it and then get out again with my shoulder just recently operated on. So that became a real challenge.

Besides concerns about actual and anticipated declines, some participants also had a general awareness that they were getting older. For some, participating in this study increased that awareness. This awareness created a realization that they may incur bodily changes because of growing older, prompting some participants to consider a behavioral change or a home modification.

Elizabeth: I think certainly, probably, I have made more changes than I'm aware. I mean, like as I talk to you, I realize that I do worry about slipping, and I worry about tripping, and I make sure I have enough lights in the house, and I make sure the house is bright, and I make sure I know where the flashlights are. I mean, you ask me the questions, and I know I have it, but I just wasn't as keenly aware of how in tune to really getting older that I am.

Donna: I think one of the areas where my house maybe is not quite ready should I have to be wheelchair bound, I'm not sure that all the doorways and hallways and all are appropriately sized. It was not built [with] that idea in mind, so I'm not sure whether that's something that ... I know that they make pretty skinny chairs nowadays.

Alice: And part of that [difficulty finishing the home modification] actually has to do with the aging process; we don't have as much energy and stamina as we used to have, so we get worn out. You know I wanted a lot of light [in the remodeled kitchen]; your eyes get worse when you get older, just little things like that. We added a lot of lights to light up the interior.

Gerald: Of course, I got nothing to really to be depressed about. I mean, you know, you're getting older, but that has never really worried me. It sort of surprises me every once in a while when I realize how old I am—that's true.

Karen: One thing that worries me is we are getting older, and neither of us are strong enough to be able to lift the other one if we fall. But communication is the key, and your being here certainly prompts us to have this conversation, whereas we might not have pulled it out of drawer until another year or 2 or 3, right?

Whereas some of the health concerns described by participants did not require an immediate response, other participants had illnesses or accidents that did. A home modification was the typical result.

Linda: My husband was diagnosed with ALS, or Lou Gehrig's disease. So his choice was to stay at home if, in fact, I wanted to live here after he died. So we decided, since we have two stories and he couldn't walk upstairs, we needed to put an addition on. So he thought through the whole addition, and that's what he did, but as part of doing that, part of it was thinking about that I would be here by myself when I'm older and need more help. So he did some things that would help me, like in the kitchen eventually, too. So we were thinking long term as well as shorter term. If he was going to stay here, we had to do something.

Donna: When I told my daughter about this [study], she said make sure you say it was the result of the accident that caused me to make some of the other changes in order to accommodate living on one floor. I was laid up with a walker, not to use my right leg for 8 weeks. So those [modifications] are all directly as a result

of the hip accident and finding out what it is that was keeping me from being self-sustaining on one floor.

Barbara: When [Michael] had his heart surgery, which was a year ago in January, he could not, of course, you can't use your arms. So I bought a stool for the shower, and I went out and bought a showerhead that had the detachable one.

Gerald: After I had a heart attack, I had open-heart surgery about 4 years ago, and we put up a, as you say, a grab bar on the bathtub.

Falling is the fifth property of the Health Status condition that influenced the well older adult participants in this study to decide whether to make a home modification. A few participants have fallen; many expressed concerns about falling. This concern stimulated some individuals to make a home modification, while others made behavioral changes.

Elizabeth: Yeah, well, it [replacing her bathtub with a walk-in shower] just seemed more practical, you know, and I certainly think about slipping. You're always—I worried about that. I'm not real steady on my feet anymore, and yeah it's just, you could easily fall; I could easily fall. I can honestly say it's very nice to be able to just walk into the tub, into the bath shower, into the shower, and not worry about slipping anymore.

Donna: Well, I sort of try to take preventive measures. I don't have one of those, you know, button things that you [push] or something like that, which I don't know, in the future I might consider, but right now, I'm not. But what I do is I take my phone and sit it on the toilet when I take a shower.

Candice: Well, I think if I had more, if it is was a two story, I would think about it [falling]. I mean, and I do—I usually keep my cell phone somewhere around me when I'm tearing around and running and down the basement stairs to do laundry. I mean, eventually I could say, you know, having stairs [to the laundry], I might put it up here.

Alice: I don't worry so much about falling on the front steps, and I don't really worry about those steps so much because I hold on. But I do at work, I hold on; I do at church, I hold on. Yeah, I don't want a broken hip. I have fallen in the bathtub a long time ago, and that's when I said we've gotta have grab bars.

Karen: The bathtub is the main issue, and as balance becomes more of a challenge, the ability to feel safe getting into and out of the bathtub is more. I somehow am clinging to the notion that if I fall, I'll get up, and, you know, I will not break a bone.

Penny: Here in my own situation, I'm very cognizant of falls myself. I haven't made any modifications to the house yet, though, for fall prevention, except when I was on a walker—taking up the rugs. What I do, I'm very cognizant of this when I'm babysitting my 4-year-old and 2 and 1/2-year-old grandchildren; I'm very cognizant of the fact that I could easily fall over one of them.

Two participants declared that they did not anticipate making any home modifications because they could not control what health changes they might encounter in the future and therefore could not anticipate which modification would be useful.

Thomas: Yeah, so, you know, you're just not in control of this at all. It really is a crap game. It's a gamble, and you have no control or very little control over

what happens, and it's hard to anticipate every possibility. You can build some models in your head that would [be] if this than that, but it never unfolds that way.

Elizabeth: You never know what's going to happen. You never know about anything, you know, and so, I mean, I have to keep that in mind.

Another participant, Donald, decided that he and his wife were too old to make a modification to their home. If one of them became ill or disabled, they would leave the home rather than make a modification:

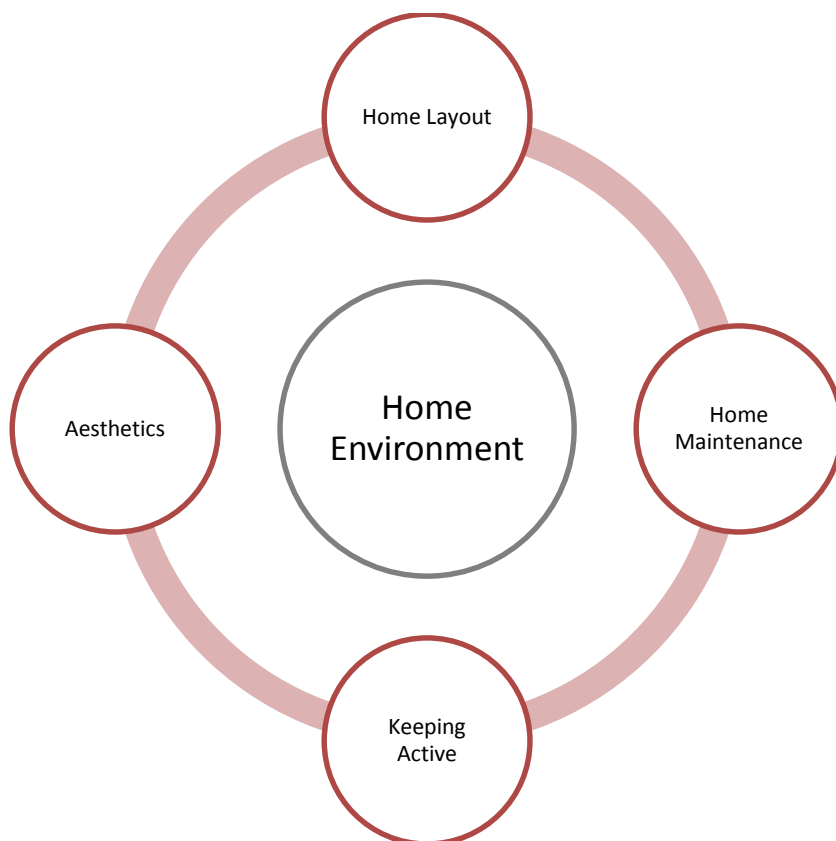
Donald: Well, if it were the case, and one of us were 45 years old, that would be different. You'd think, well, you know, we don't want to leave here at this age, 45. I don't know that I would want to go that route [make a modification] at this age in our life.

The participants in this study had a variety of concerns related to health status that they considered when deciding whether to make a home modification. Five other conditions, as depicted in Figure 9, also influenced that decision. The home environment is discussed next.

Home environment.

Considerations about the home environment included (a) home layout, (b) home maintenance, (c) keeping active, and (d) aesthetics. The four properties of this condition are displayed in Figure 16.

Figure 16. Conditions Influencing the Decision Whether to Make a Home Modification: Home Environment



Some participants lived in a ranch-style home. Many had finished basements they used frequently but asserted they could live on one floor if they needed to do so. For this reason, they did not think they would need to make many, if any, modifications.

Candice: No, since it's a rancher, there's probably very little I would have to do.

Maybe some changes in the bathrooms, but it's a very convenient space.

Gerald: Well, I've got a full bath right there, and I've got a half a bath in there.

You know, I don't need to go downstairs at all, and there's no attic. I mean, there's a crawl space up there, but that's all. So I don't need to go downstairs.

Jonathan: My laundry, like I said, is downstairs, and I don't have any trouble going down the steps or going up the steps. I have railings, but I can walk up the steps and down them without a railing, you know.

Although Elizabeth has considered moving her washer and dryer from the basement to the first floor, she viewed using the flight of stairs in her home as a way to keep active. She may consider a change in the future:

Just going downstairs, carrying the laundry downstairs, bringing them upstairs—that would be the only thing I might change. But the other part of me says, “You know, as long as you can use the steps, use them. You know, if you don't use them, you know they say ‘use it or lose it.’” It's not bad to have to walk up and down.

Elizabeth did, however, make a modification when her bathtub was leaking, and she needed to make a change due to that home maintenance issue. Although she could have installed another bathtub, she chose to install a walk-in shower:

What I did have to, I put a walk-in shower in my bathroom. I had to do something with it, it was leaking into the floor, and I couldn't get the plumber to fix it, so I decided to just redo the bathroom, and I removed the tub and put a walk-in shower. Nothing fancy at all, just a big shower that's the size of the tub. It doesn't have a bench or any of that kind of stuff in it. It seemed like the sensible thing to do.

Within the Home Environment condition, consideration for how a home modification would affect the aesthetics of the home was of the greatest importance to the participants. Many described thinking about aesthetics when they installed or considered

installing their modification. For these participants, aesthetics encompassed the appearance of the modification as well as the sense of comfort it provided. One participant believed he would not install a modification, as it would detract from the appearance of the home.

Linda: To get in and out we could have done a, you know, an elevator from the back, but he really didn't want that; he didn't want things to look bad. It was a very good space. It was good space. People could come and visit; it didn't look medical, it was very comfortable. So, I think that was good.

Candice: I am getting a new main bathroom, not because I'm old, just because I'm getting a new bathroom. I thought, well, [it] behooves me to make the new bathroom a little bit more accessible. Not obviously so. Just a little bit taller toilet and the grab bars and whatever, and the shower that you can just walk into. I mean, I still want it to just look like a bathroom. I think I might [have grab bars installed]. I'm just going to see, 'cuz I know what my father put in their house before they moved out, and they [the grab bars] weren't totally obnoxious.

Alice: I am sensitive to my physical surroundings probably more than a lot of people and sounds petty, but the traffic flow of the house before we remodeled it was just horrible, and it drove me batty. It works in a way that I find very comfortable and very pleasant to be in. I can actually move around the kitchen now, we can see the garden, which is important to us and not to other people maybe, but it is to us, and it just, it's comfortable to be here.

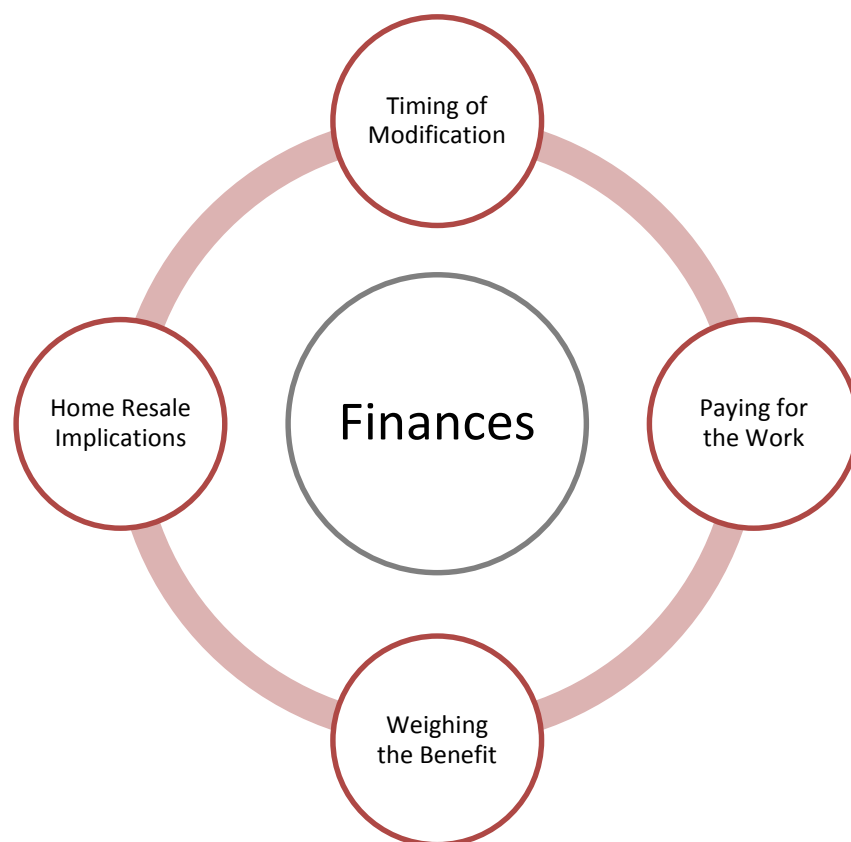
Rachel: We redid the master bedroom, and we made a new bathroom for me and took it all out and literally started from scratch: a walk-in shower with [a bench] so I can sit also, it's built in—it's lovely, hand-held, it's lovely.

Donald: I don't see how that can be modified. You can put ramps in and out the back door or front door, I guess. I don't know that I would want to go that route at this age in our life. A ramp would be a little trouble out back, too. We have a porch out back, which is very nice, but a ramp would sort of, like, ruin that.

Finances.

The third condition that influenced home modification decision-making was Finances. As the reader can see in Figure 17, the participants pondered the timing of the modification, paying for the work, home resale implications, and the benefit of the modification.

Figure 17. Conditions Influencing the Decision Whether to Make a Home Modification: Finances



Having the money to pay for a modification affected the timing of when participants actually began or finished the modification.

Alice: And we stopped for this, that, and the other reason, and then we'd pick up and go on again. If I'd won, if we'd won the lottery, we would have done it 20 years ago, but we didn't so, you know, we just keep on keeping on.

Barbara: We had talked about down the road having it done [replacing heavy bifold doors with sliding doors] in the bedroom, and we may do that, I don't know, someday. Financially we're not in a position to be doing a lot.

Linda and her husband considered tax implications when they considered the timing of their modifications:

The only thing that we did do is we did this in one year at the same time. This was more of a tax thing; we also bought a handicap van in the same year, so our expenses were all in one year that could be written off for a medical expense. So that was a good thing we had done. I mean you can't write it all off, but, you know, you can write some of it off.

Most of the participants who made the decision to implement a home modification had the work completed by a contractor or handyman. Being concerned about paying for the modification, Carl decided to complete some of the work by himself to save money, although it was not easy:

When we put the addition on, the builder took everything to just before painting, and so I'm the painter. What I didn't realize, or it didn't occur to me, and thinking that I've done this many times before, but it just didn't sink in, was that when the builder says that's the painter's job, there's a lot of work that has to be done before you put the paint on. Yeah, he taped it and all that kind of stuff, but there's still a lot of work that has to be done.

Alice had a warning for other well older adults who may be considering a modification:

I would say be real honest and objective about what it is you are trying to accomplish, because it's costly. Just be real aware of finances because it's not cheap.

When participants weighed the benefit of the modification, they were generally weighing the financial cost of the modification against the usefulness of the modification.

Nora and Karen had the following exchange:

Nora: I think we probably could get one of those chairs that glides up and down. It would be expensive.

Karen: Yeah, it would be a tremendous expense, Nora, is what I'm saying, and if it weren't going to be that useful or functional for us because we have someone [caregiver] living down there, then maybe that wouldn't be the right thing to do. You would have to consider that expense. Is that an expense we want to undergo if down the road we may have or want someone living down there?

In one instance, a couple, Alice and Carl, considered that a modification would save them money, although Carl weighed the benefit against a negative outcome of their kitchen modification:

Alice: We made our kitchen—before the remodeling, it was miniscule, so I wanted it larger. I also wanted the space between the cabinets and the island, I wanted them wide enough so that you could get through without hitting either side. We put in fans, ceiling fans, to help save a little money on air conditioning.

Carl: Well, there's a negative [to completing the modification]. We've tied up money in this [so] that we can't use [it], of course, for some other things we'd like to do.

Participants often considered home resale value when they planned their home modifications. Even those participants who planned to remain in their homes for many years contemplated if a modification would have a positive impact on home resale.

Carl: The other part of it was, I guess, sinking money into something that you can't get any money out of until you sell it. That was another resistance area there and what impact would that have on retirement in terms of by sinking money into

this, you wouldn't have the cash or whatever to do other things in life and it has. It has, there's no question about it. In homes, when it's sunk in here and you're subject to the winds of the real estate market, it does put some limitations on it.

Candice: I am getting a new main bathroom, not because I'm old, just because I'm getting a new bathroom. So that way, you know, I should probably look at, not so much for me, but when I also, when I sell this or I die or whatever and the population is getting older, so I thought [it] well behooves me to make the new bathroom a little bit more accessible. If somebody's buying this, they might think "Ah this is pretty good, it's all one floor, you know, you can walk outside, there's only one step." So they might think about that, so I was thinking about resale, but most people probably don't think that way.

Mark and Rachel had the following exchange about replacing the doorknobs in their home with lever handles:

Mark: But that's so right to our house, and we may want to hold onto that knob.

Rachel: Well, if they didn't work, we wouldn't replace it voluntarily unless we really had to.

Mark: Right, you really wouldn't because that's part of the selling of this house, too. You know what I mean?

Rachel: I polished; when we painted this room, I polished all the doorknobs and the brass as best I could.

Mark: We put all the chair railings up and, you know, all that kind of stuff, too, because that goes with the vintage of the house.

Alice and Carl also considered home resale value when they completed their kitchen renovation:

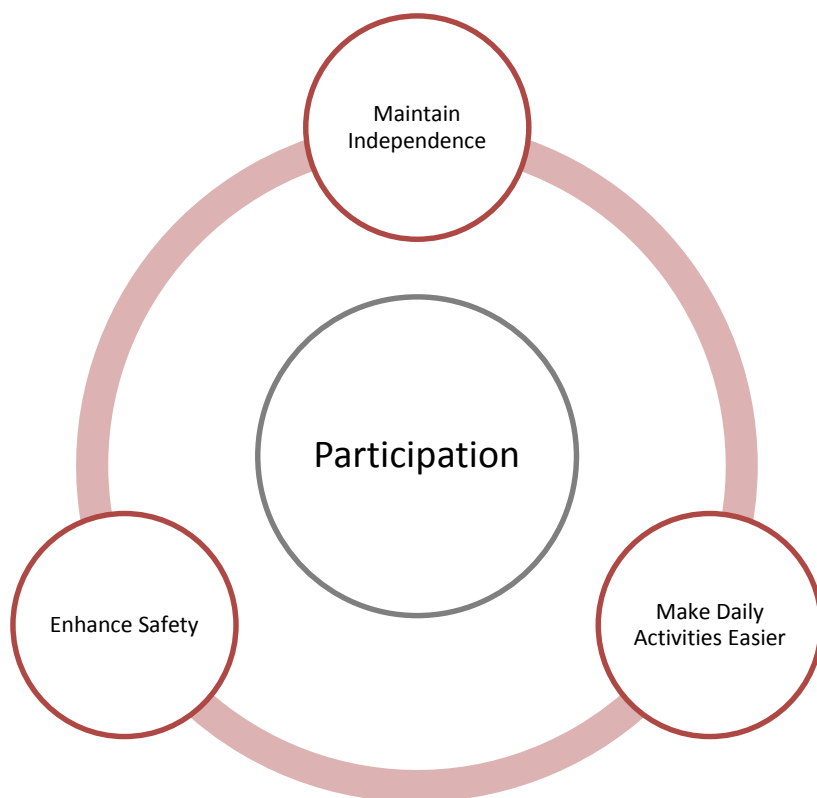
Alice: I wanted two sinks, for instance, because that is kind of in vogue that two people can cook together if you've got enough space.

Carl: Well no part of it was for resale, but a lot of it was in the anticipation of enjoying the facility more, and that has been true.

Participation.

From an occupational therapy perspective, *participation* is defined as “taking part in the occupations of everyday life” (Law, Dunn, & Baum, 2005, p. 107). When participants contemplated making a home modification, many did so to affect the way they participated in daily home-based occupations. They implemented home modifications to help them maintain their current level of independence with an activity, enhance their safety while doing an activity, or make an activity easier, as depicted in Figure 18.

Figure 18. Conditions Influencing the Decision Whether to Make a Home Modification: Participation



These three properties of the Participation condition overlapped somewhat when participants were explaining why they decided to make a modification. For some, the modification provided a way to continue participating in a daily activity, but it also provided enhanced safety while the participant was engaged in the activity. One example is the stair lift modification that Donna made. She initially installed the stair lift after she became non-weight-bearing on her right leg after an accident so that she could continue to go downstairs to her pool and laundry area. After her leg healed, she used the stair lift to make a daily activity easier:

When I was here for the 8 weeks [non-weight-bearing], I found out what it is that I needed to do in order to live on one floor. It's basically a rancher, but it's got a basement, so there were a couple of things that made it such that it would have

been difficult for me to stay here for a long period of time, so to that end I did a couple of things. I have a stairway from the pool room up, so I ended up putting in—my daughter refers to it as a “Gremlin chair”—on the stairway that goes from the kitchen to the basement. I like the fact that I’ve got essentially two stairwells; two stairways that get up here, you know, from the basement, either from the pool room regular stairs or the stairway thing, Gremlin. I never use the thing to actually ride, but what I do use it for is to pile on groceries. Dumb waiter. I mean I use it for that kind of stuff.

In addition, Donna installed a laundry space on her first floor while she was incapacitated so that she could continue to do her own laundry. Now, she uses both of her laundry areas to make doing her laundry easier:

Also after that I ended up having installed a small stacking [washer and dryer] in my closet in the bedroom so that just small kinds of things, I could do laundry. So now I consider that I have my little mini-Laundromat at home, and I sort my clothes and things go in the one upstairs and then the towels and the big stuff and all, I take downstairs, and I’ll have both of them going at the same time.

Jonathan wanted to continue to take showers independently but knew he needed to improve his safety with showering. He decided to install a grab bar, which gave him the added safety he needed, and so he continued to shower independently:

The bathroom—I’ve got a safety bar in there, which I use. I do use that regularly when I’m taking a shower, I always make sure my hand is on that bar whenever I turn or whatever.

Mark and Rachel remodeled their main bathroom and decided to implement modifications that made showering and using the commode safer and easier:

Rachel: So it is a walk-in shower, built in walk-in shower with a built-in seat that is made out of the tile and a hand-held [shower]. We've got one [grab bar] attached to the wall, but then we have the hand-held, too. So that if I have to sit and shower seated, it's there. That's what we did. We brought in a toilet, a higher toilet, and all that stuff; we did all of that. So everything is reachable. I'm really short, so I have to have things that I can really reach.

Although the modifications described above served dual purposes, several participants made modifications that clearly made performing daily activities easier.

Jonathan: All my doors in here have the [lever] handles on them rather than knobs because I have, I began to have trouble trying to turn the knobs. I've got arthritis in my fingers and so I had all that, I had every one of them done that way. Now's the time to make that change because it was getting more difficulty for me, and it's easier on my hands.

Barbara: We redid the den last year. We have these horrible, I think they're horrible, doors. This place was built in 1970, and if you look at some of the things, you realize that. One of them is the doors. They're bi-fold [doors], and these are high ceilings and so in our bedroom they are mirrored. There were three great big, mirrored doors that weigh about a hundred pounds each. So we had bi-fold [doors] in the den, and we had a guy come in, and he took those out, and he put in a sliding [door], which barely requires any effort.

Many more participants made a home modification solely for increased safety. Increasing safety had different meanings for different participants, ranging from preventing falls in the bathroom to preventing burglars from entering the home.

Elizabeth: Yeah, well, it just seemed more practical [to install a walk-in shower]. I certainly think about slipping. You're always, I'm worried about that. I'm not real steady on my feet anymore, and yeah, it's just, you could easily fall, I could easily fall.

Gerald: And the railing was just one railing; it went down one side. After we moved in, my wife was always one for doing things around the house and stuff, and low and behold she went out on Pulaski Highway to an iron monger and got this railings put in. The [old] railing was sort of wobbly, but with that [new railing], I mean you can put your hand on that and, boy, no problem at all.

Jonathan: I haven't done a whole lot, but I have put a steel door down in the basement. I had a regular door down there before, so I did put that down as an item of protection. The current crime situation. I had a regular wooden door there, and, you know, I do look at the police reports that are in the paper, you know, and I see something [happen] here or down the street, and I thought, well, that door is not very good security, and that's when I had that put in. Yeah, because of security, yeah, and that's only been the last 5 years, 5 or 6 years.

Karen: Well we've got steps, you know, on the deck; we asked our handyman to put in a railing, put in actually front and back. The personal confidence that an older person could gain, self-confidence, ability to do, to get there, to make it happen comes with some of these structural changes. We may never have fallen

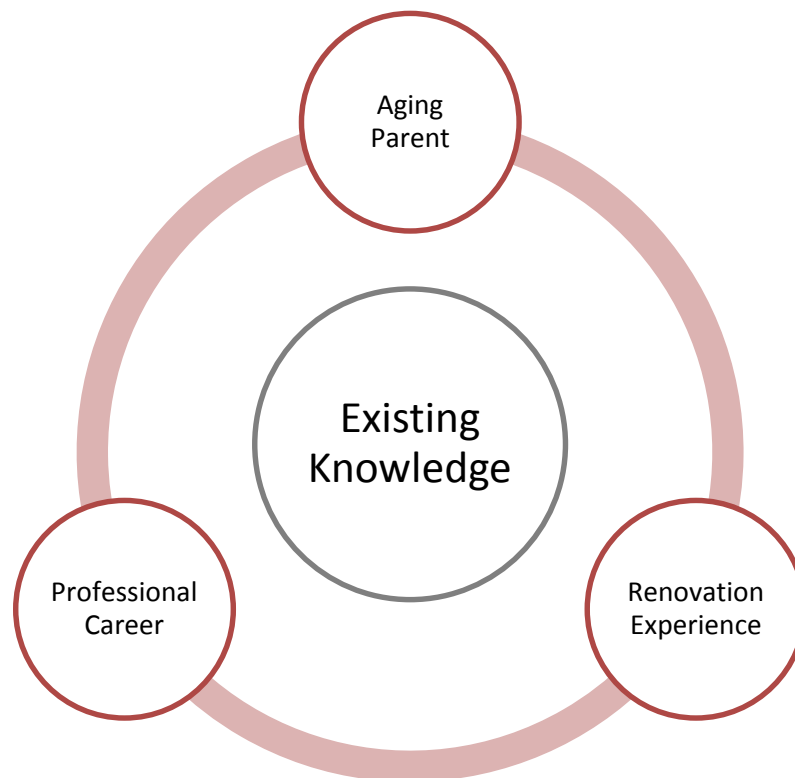
without that rail, but the fact that you have that rail psychologically provides such a level of safety and comfort that it improves the life.

The Participation condition included personal reasons why the participants decided to make modifications that helped them take part in their daily occupations. The next condition that influenced home modification decision-making, Existing Knowledge, includes how participants' familiarity with home modifications affected whether they made a home modification.

Existing knowledge.

The Existing Knowledge condition and its properties are displayed in Figure 19.

Figure 19. Conditions Influencing the Decision Whether to Make a Home Modification: Existing Knowledge



This sample of well older adults was highly educated and had accumulated a lifetime of experiences. Many of them had knowledge of renovations or home modifications from previous or recent life experiences. This existing knowledge gave the participants a level of understanding and familiarity deciding whether to implement a modification in their own homes.

Several participants had assisted or were currently assisting their elderly parents with decisions about living arrangements in their late years and the need for home modifications.

Thomas: My father's in that situation right now. He's 96, in his own home; one he built with his own hands, and he doesn't want to leave. But he can't stay, and I'm just not sure whether to let him stay and have the fall that seems to be inevitable, put him in assisted living where he'll be miserable, put him in a nursing home where they would have to sedate him because he would try to assert his independence. So, there are no good alternatives. Now, he's made some changes, just putting grab bars, because there's steps. I just put a bunch of grab bars in.

Candice: They live with my brother and sister-in-law, who created a wonderful in-law apartment. It's totally made for people that are 80 or 90. He did a marvelous job. The bathroom is totally equipped and wide enough; you know the shower is one of the walk-in [and] has a seat in it.

Alice: Well, and the other thing was that we had observed the downsizing of both sets of parents for various necessary reasons; mine primarily health, and we could see what was working and what wasn't working. For instance, my parents moved

to a smaller, a somewhat smaller place, but it was important to have the laundry room on the main level.

Elizabeth: When my mother [lived with me], I did have a grab bar in my former bathroom, because my mother fell and broke her hip, and I'm trying to remember why she had to use, I don't remember why she had to use, my bathroom rather than hers. Oh, I think my bath, it was a lower step to get in and out, and so I had a guy come and put a couple of grab bars in it for her when she did that.

Some participants were familiar with home modifications and renovations as a result of direct personal involvement in past renovations or indirectly as a result of a parent or spouse being involved with renovations.

Linda: I don't really know that much, but my father was a contractor, so when I wanted something, all I had to do was ask him, and he built it. And my husband had done a lot of additions and work, and he was very, he knew a lot of stuff, so he sort of had ideas about what he wanted.

Carl: My knowledge is I've always been fairly handy with tools and things like that. Even as a teenager, I helped build a house, well actually a community center, and went up, and so that didn't bother me, I mean I could have done this building myself if I had the time and the energy.

Other participants were exposed to modifications or renovations in their professional careers.

Donna: Well, in a way, yes, because for a while I had been in the investment real estate stuff, so I have been involved in other kinds of renovations and various properties. So it was not a foreign thing to me.

Alice: I had worked in the interior design firm ... a lot of our clients, it was a high end, well still is, I just don't work for them anymore. I could check out how they [contractors] were to work with and some of the designers, because there was an overlap there, and so we thought we had some inside knowledge as to who to use and who to avoid. We avoided the ones that didn't get good marks from the interior design people, and the one person we really wanted was not available.

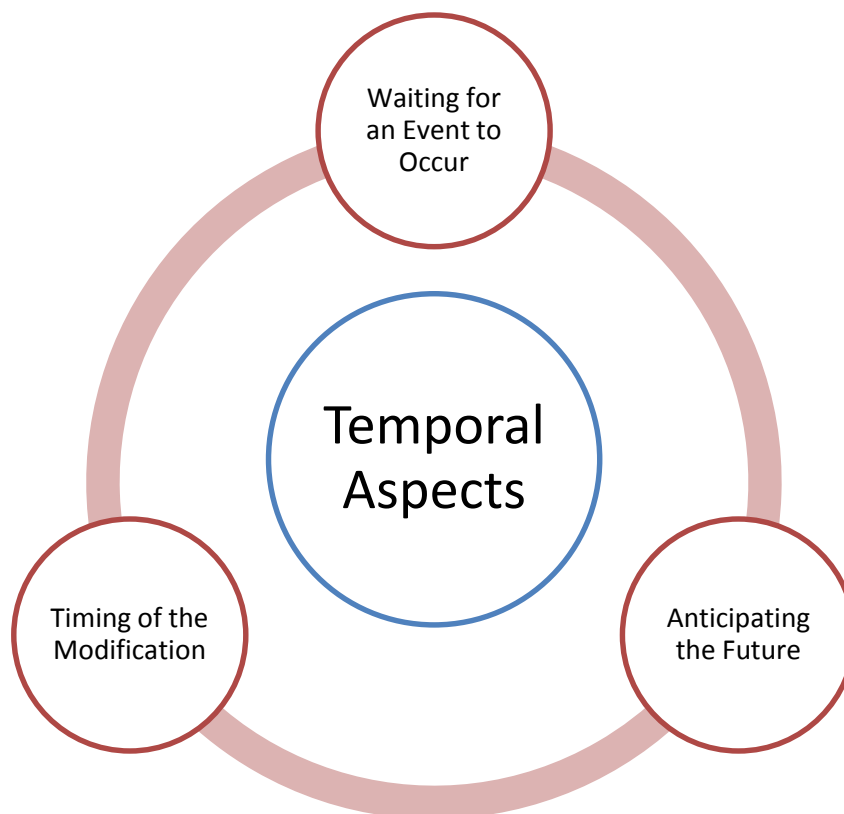
Penny: Well, being a homecare nurse, we built the house 25 years ago. So we did build it with one-floor living in mind.

The fund of existing knowledge gained through experience with an aging parent, direct or indirect renovation experience, or a professional career gave participants an awareness and understanding of home modifications. Equipped with this understanding, participants had an initial comfort level to begin exploring if a home modification was right for them.

Temporal aspects.

The final condition that influenced the participants' home modification decision involved time-based properties, as depicted in Figure 20.

Figure 20. Conditions Influencing the Decision Whether to Make a Home Modification: Temporal Aspects



Many participants were waiting for an event to occur, such as a disabling injury or illness, before they would act upon making a home modification. The attitude was “if I had to, I might consider it then.” Some possible modifications were changes the participants could have benefitted from now to make their everyday activities easier, and in some cases, less painful. Instead, they were choosing to postpone the modification until they absolutely could not manage without it.

Elizabeth: The only thing I have down there [in the basement] that I have to use is the washer and dryer. The truth [is], I thought about, and I may do it, I might not, I might just have somebody do the laundry. I could add a room off of the kitchen and put a washer and dryer in there, and many people have done that, but

they just added a bathroom. I have two full baths on this floor, and I'm one person, so I don't need two full baths on this floor. So I don't need an extra bathroom, you know, that would just be another thing to clean. So it would be easy enough to put a washer and dryer in there if I had to.

Michael: So I could go out and purchase a bar and pay somebody 20 bucks to put it in, you know, or one of the maintenance people, and that's about it. That would be only if I felt the need for it.... Maybe I better put a bar in there; it's just not going to be a major obstacle at this point.

Karen and Nora, who both have significant arthritis, had the following exchange:

Karen: We just had friends who've raised the seat on the john and installed that, had the little handrail beside it, but we don't--neither of us feel a need for that yet. The bathtub is the main issue, and as balance becomes more of a challenge, the ability to feel safe getting into and out of the bathtub is more. . .

Nora: And, of course, that's silly, just get a walk-in shower.

Karen: Yeah, and I've thought of a bathtub for us, but just haven't—

Although Nora was once trapped in the bathtub and was unable to get out for almost 1 hour, the couple was still not motivated to install a walk-in shower or to even grab bars beside the bathtub.

Candice could have made two changes to make her daily activities easier, but she did not believe these changes were needed:

I mean, I would have to seriously not be able to go up and down steps [to move the laundry to the first floor], which I absolutely can; I mean, I walk 2 miles a day. You know, but I would have to not be able to get there. And I think that I

don't have that much laundry.... The other thing is out there. My boys are saying, "Momma, why don't you let us install an automatic [garage] door." No, I don't need it right now, thank you very much. They'll install one for me, but, like right now, I can just open it.

Some participants had difficulty anticipating what their future lives would be like. For some, this lack of specific knowledge about the future deterred them from making a home modification. Others had made or had considered making a modification based on a general idea of what they thought would be useful to them in the future.

Thomas: I personally don't focus on it, because you don't know what's going to happen, and there could be 40 different scenarios, and I'm not going to worry about them until they happen. I mean, you think ahead, you know you're going to face it, but planning it, you can't do it, because you don't know which one.

Barbara: Well, Frank and I said, you know, we took vows richer or poorer, sickness and in health, we've certainly been through the sickness... . I don't know what the future holds.

Gerald: Well, I hope I'm here until I die in this house, but I don't think much about it; you know, as you get older, you don't know what the outcome's going to be.

Karen: I don't feel we're there. I think we're close to being there. I don't see any particular area of the house that appears to me posing a problem 5 years from now.... Five years is a blur.

Nora: Yeah, whatever is going to be thrown at us here hasn't entered our heads yet, I don't think.

Mark and Rachel had the following discussion about their future plans for a modification:

Rachel: You know you can't do much with this little kitchen, because it's little.

Mark: Now, if you were to ask what we want to do next ... we probably should remodel the kitchen.

Rachel: We will. That will be our next biggest project; modernize the kitchen a bit.

Incorporating a modification into a busy daily schedule was a concern for a few of the participants; it was a timing issue. Carl resisted a home modification because it was an inconvenience in his life:

Well, the resistance, I would have to say, probably was I knew it was going to take a lot of my time, and it did. I just knew it going in more so than she knew [that] it was going to take time. I think because she was away during the day. I was here all the time. I watched it all: I had to. I was inconvenienced at some level.

Carl also commented that the decision to make a modification was based on having the time for it. They had been the executors of the wills of several relatives who had died and, as a result, had responsibilities that took time away from their normal routines. They had time to consider proceeding with a modification only after that period in their lives:

Well, nobody was dying in our family, so we didn't have to worry about that.

Where prior to that, people were dying, family members were dying, and so we had to deal with estates and settlements and all that kind of stuff. We're still dealing with estates in terms of, not legally, but in terms of all the stuff.

Penny admitted that she would like to have had a handicap-accessible bathroom when she and her husband built their ranch-style home several years ago. The bathroom was not part of the original designs for the home; however, so the couple did not want to invest the time to make that change:

So it would have been nice to have a handicapped-access bathroom, but honestly when we built the house, although it was many years ago, we were really not going to tear everything apart ... with the planning and put in handicapped bathroom access. So we didn't.

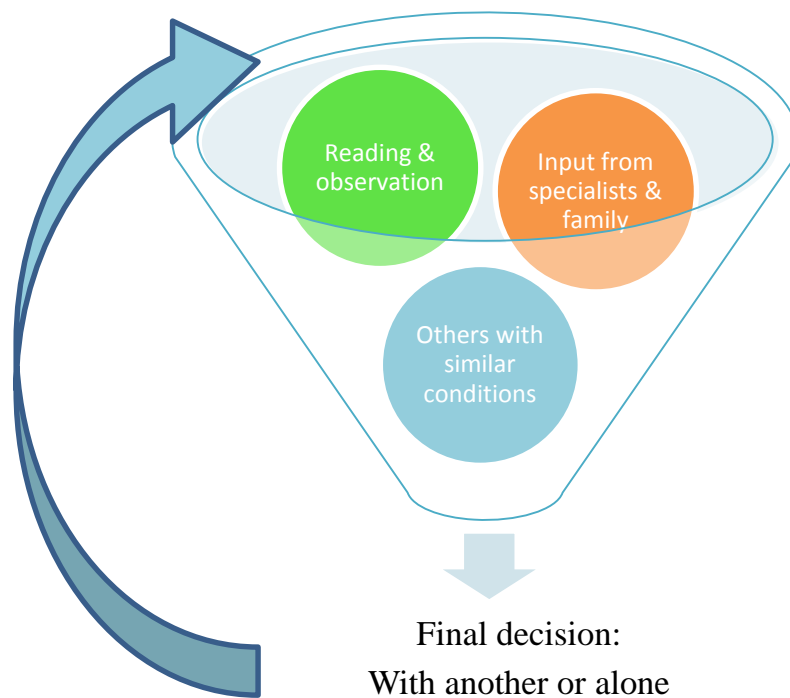
Summary.

In this section, the researcher explained the Weighing the Decision: Home Modification element of the THMD: WOA. When engaged in the decision of whether to make a home modification, the well older adult participants in this study considered multiple, interacting factors (referred to in the grounded theory approach as *conditions*) that influenced the decision-making process. Some participants were influenced by all of the conditions; others were most heavily influenced by some of the conditions, which included (a) Health Status, (b) Home Environment, (c) Finances, (d) Participation, (e) Existing Knowledge, and (f) Temporal Aspects. Many participants made this decision in a systematic manner, considering the factors involved and how a modification would change the quality of their lives now and in the future. After the participants decided to make a home modification, they continued their systematic approach by gathering more information to proceed with the implementation of the modification.

Information Gathering and Decision Negotiation.

The participants gathered information from four different sources. Three were specific groups: (a) specialists, (b) family, and (c) those with similar conditions. Participants also used literature and observation to build upon their existing knowledge level. Figure 21 depicts the sources from which participants gathered information and the final decision being reached.

Figure 21. Home Modification Decision: Information Gathering



Many participants gathered information from individuals they considered specialists in home modifications, including contractors, architects, and health-based organizations:

Linda: We have friends that are contractors, so we talked to them. So it was a lot of information gathering... and the ALS Association. So, they have lots of resources, and they tell you who to go to.... [Also] one of these assisted-living places had an open house, so we checked that out.

Elizabeth: I had two companies come out and give me an estimate, and I went with Welsh because they're an established name. That was my thought. I just wanted it done right, and I didn't want to have to fool with it.

Alice: So the addition is the result of discussions with, actually, with a real estate agent who's a friend and with just between each other and then also with the architect, you know, this is what we're trying to do. We actually had pretty much designed it ourselves but let the architect fine tune it and that sort of thing.

Rachel: Get a good contractor that you trust.... We were thrilled. The people that did this were just beautiful. I was working still, so I'd be gone all day. Now that's another thing—to leave your house open to anybody that's in here and so on, but this person came recommended because he had worked on another teacher's home in Catonsville, and she was, it's an old home, an older home, a beautiful older home, you know, and he was fantastic with it all. So we interviewed them, and they took us to two other people's homes ... that they had worked on and everybody had wonderful recommendations about these young men that were in this business. So we were thrilled. Mark was here because he knows a lot about building, and he's an exact person, so he wanted to make sure things were going well, but they worked.

Linda's situation was unlike the other participants' situations. Although she and her husband designed the modifications in her home to be beneficial to her, his ALS diagnosis was the driving cause for the modifications. Hence, they consulted others with a similar disease process to gain more information about useful home modifications:

We went and visited lots of people that had muscular dystrophy issues. We went to their houses; we went to see what they had done. We talked to them like what worked and what didn't work for them. It wasn't just for his disease. We went any place anybody that did an addition or modifications to their bathroom; we went and visited them to see what they had.

A few of the participants chose to gain information about home modifications through reading and observation:

Candice: And I mean I read excessively and just reviewing stuff, and, like, if I'm in Home Depot getting gardening stuff, I might say, "Oh, I like that faucet, or you know, let me think here a minute." So I do—I'm—I was a researcher and planner for a very long time, so it just comes natural.

Carl: One of the advantages we had is we've observed older people, because we had to deal with older people in our family or other organizations, whether it be church or whatever.

Karen: For me I don't think it was an intentional research undertaking at all; it was just being aware of your environment and what certain friends have done to implement or embellish upon their ability as they grow older and observation, awareness.

Nora: Plus being as senior citizens, we get a lot of mailings from, you know, the scooter people and others.... Yeah, but, and now we're just sort of very aware and, as she said, when we go to, we do go to a lot of the retirement communities and we see what our friends have done or we see what the building has done, you know, that makes their life easier.

When the participants were comfortable that they had enough information about the home modification they planned to make, they made the final decision. Coming to the final decision sometimes required the participants to seek further information from other sources, as depicted by the arrow in Figure 21. Participants made the final decision with another, typically a spouse, or alone. The participants who made the home modification decision with another stressed the importance of communication. Karen stated, "Well as you see in living color right before you, we communicate freely, and we disagree, and we agree to disagree on a bunch of stuff; we don't have a problem with communication."

Several participants noted that they made the decision by themselves. Concerning her bathroom modification Elizabeth explained, "I'm pretty independent. I decided and just did it." Similarly, Donna stated, "You know, being by myself, I was the main one. I've always been kind of an independent person, so it wasn't that big of a deal to decide to do it." Exhibit 1 lists the home modifications made by the study participants. A number in parentheses beside the modification indicates that more than one participant (or participant couple) made that type of modification.

Exhibit 1. Participant Modifications

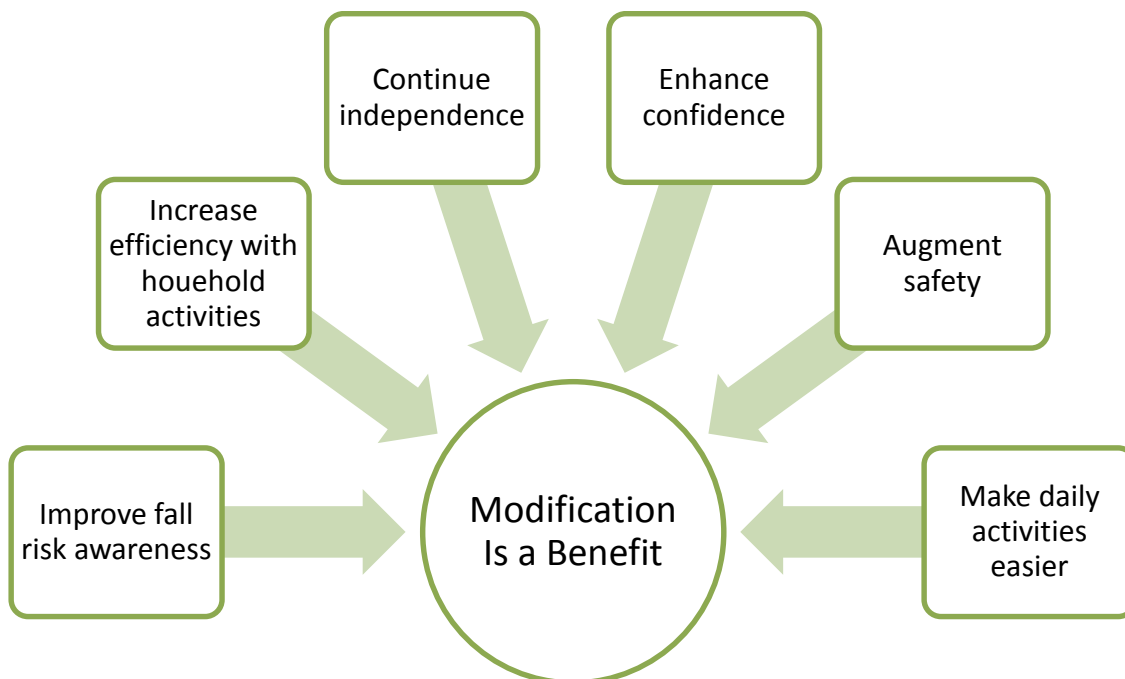
<p>Bathroom</p> <ul style="list-style-type: none"> • Replaced bathtub with walk-in shower • Installed grab bar beside bathtub (6) • Installed hand-held shower (2) • Installed comfort-height commode (2) • Added powder room on first floor • Installed walk-in shower with built-in seat • Installed telephone in bathroom for added safety in case of a fall
<p>Kitchen</p> <ul style="list-style-type: none"> • Renovated kitchen to increase overall size and improve space/accessibility around the island • Installed double sinks for ease of use (also with consideration for resale value) • Added ceiling fans to decrease air conditioning costs • Installed under-the-counter microwave that is accessible from wheelchair • Renovated kitchen sink to be wheelchair accessible as needed (removal of cabinet)
<p>Whole-Room Renovation</p> <ul style="list-style-type: none"> • Renovated first-floor room to be used as a bedroom for first floor-living arrangements as needed (2)
<p>Doors</p> <ul style="list-style-type: none"> • Replaced bi-fold closet doors with sliding doors • Replaced standard basement door with steel door • Replaced knob door handles with lever door handles
<p>Stairs</p> <ul style="list-style-type: none"> • Installed bilateral handrails for stairs to basement (2) • Installed railings to front and back exterior stairs • Installed stair lift
<p>Lighting</p> <ul style="list-style-type: none"> • Added lighting in kitchen to improve ease of reading and meal preparation • Added sky light in room to improve overall lighting and aesthetics • Installed environmental control unit for ease of use of room electronics, including lighting
<p>Exterior</p> <ul style="list-style-type: none"> • Added sidewalk for wheelchair accessibility • Installed ramp • Raised porch to permit zero egress entry into home

Secondary Results: Question 2

In addition to the main research question, the researcher was also interested in understanding the health value that well older adults assigned to home modifications. Research Question 2 was, What are well older adults' views of using home modifications to promote health and to prevent a decline in occupational performance?

All participants agreed that home modifications are beneficial to older adults. Many described their own favorable experiences with their home modification, while others concluded that home modifications were beneficial to the older adult population in general. Figure 22 depicts the benefits of home modifications described by the participants.

Figure 22. Viewing Home Modification as a Benefit



Linda commented on her own experience with the modifications in her home and extolled the benefits of accessible homes for everyone:

You know, there was no real negative. It was just, this is helpful: this'll help, so we'll do it.... What I'm saying now is everybody should have it in their house now. Homes should be built with wide doorways and bars so that you don't have to worry about it.

For Elizabeth, the relief of not being concerned about falling in the bathtub was a benefit: "I think I can honestly say it's very nice to be able to just walk into the shower and not worry about slipping anymore." Karen, who added bilateral handrails to the steps in the front and back of her home, reported multiple benefits of home modification:

The personal confidence that an older person could gain, self-confidence, ability to do, to get there, to make it happen comes with some of these structural changes. [I] may never have fallen without that rail, but the fact that you have that rail psychologically provides such a level of safety and comfort that it improves the life. You just don't want to go through life tentatively, like maybe I shouldn't take those steps or maybe I'll just not do that because I might fall. You don't want to live your life like that.

One couple, Alice and Carl, thought their modification was beneficial to them but also related that they experienced a significant degree of stress during the home modification process. They had disagreements with the contractor and subcontractors who were doing the work that led to worry and frustration. They also had a close family member die during the modification process; this added to their stress level.

Summary of Results

The main purpose of this study was to understand how well older adults decide whether to make a home modification, including the factors that influence that decision. This researcher found that, in preparing for their future, the well older adult participants in this study encountered tipping point that acted as stimulants for making two important decisions. Participants first decided whether they were going to remain in their homes as they grew older (and if so, for how long) or if they were going to leave their homes for a different environment: the stay-or-go decision. Following that decision, participants then considered the decision of whether to make a home modification.

Six factors influenced whether participants made a home modification and the type they made: (a) health status, (b) home environment, (c) finances, (d) participation, (e) existing knowledge, and (f) temporal aspects. Once participants decided to make a home modification, they engaged in a process of gathering information from a variety of sources geared toward the modification they desired. After accumulating information, the participants could then make a decision about implementation of the modification.

In addition, the researcher was interested in exploring well older adults' views of using home modifications to promote health and to prevent a decline in occupational performance. Overall, the participants remarked that home modifications were beneficial to them as well as to well older adults who planned to remain in their homes as they age.

The present chapter presented the components of the emergent theory as well as the proposed relationships between the components. In the next chapter, the researcher will discuss the results related to the problem statement, literature, and the PEO model. The researcher will also address implications for practice and further research.

Chapter 5: Discussion

Introduction

The researcher's primary aim of this qualitative study was to generate a grounded theory to explain the decision-making process that well older adults use to decide whether they should make a home modification. A secondary aim was to understand well older adults' views of using home modifications to promote health and to prevent a decline in occupational performance. The need to explore this topic arose from a lack of research literature in occupational therapy that deals with well older adults and home modification.

A review of pertinent literature was conducted to determine the extent of current knowledge about the topic and to increase the researcher's theoretical sensitivity in the area of study (Birks & Mills, 2011). Early grounded theorists, Glaser in particular, warned against conducting a review of the literature in the area of research or related areas as this would contaminate the data analysis process (Birks & Mills, 2011). Contemporary grounded theorists acknowledge that conducting a non-exhaustive literature review can be an orienting process for the researcher as to current ideas about the topic of interest (Urquhart, 2007). Additionally, by having self-awareness and articulating her assumptions, the researcher was able to have an awareness of other theories and literature without imposing them on the data (Birks & Mills, 2011; Urquhart, 2007). Even Corbin and Strauss (2008) conceded that literature can be used to enhance analysis. This novice researcher found that conducting a literature review helped enhance her knowledge of related literature before embarking on the data collection process.

Nineteen participants, ranging in age from 65 to 89 years, participated in the study. All participants were community-dwelling and resided in Baltimore County, MD. As a group, the participants were well educated, active, and in the middle to upper-middle socioeconomic status. Data were collected using in-depth interviews and observations.

The researcher used the grounded theory approach to data analysis described by Strass and Corbin (1998). Open, axial, and selective coding procedures were used to develop codes and categories from the data. The researcher engaged in memo writing throughout the coding process to catalog her research activities and to enhance her development of abstract concepts needed for theory development. The culmination of data analysis was a substantive grounded theory based on the words of the participants and the researcher's interpretations.

In Chapter 4, the researcher presented the results of data analysis. The results paramount to answering the main question of the study were (a) the decision-making process in which the participants engaged when deciding whether to make a home modification (Figure 8) and (b) the THMD: WOA (Figure 9). In addition, the researcher discussed results pertinent to the secondary question of the study, revealing that generally, well older adult participants believed home modifications were beneficial for themselves and for their peers.

In this final chapter, this researcher will examine the implications of the findings and theoretical model in relation to the study problem statement, occupational therapy theory, and pertinent occupational therapy and gerontology literature. In addition,

limitations of the research will be discussed. The chapter will conclude with implications for practice, suggestions for future research, and other recommendations.

Discussion and Interpretation of Results

In the Context of Study Problem Statement

In the problem statement underlying this dissertation research, the researcher asserted that existing layouts and attributes in the homes of well older adults create barriers and hazards that lead to non-optimal occupational performance. Without a home modification to change the flawed layouts or attributes, well older adults are at risk of injury or a decline in occupational performance. The well older adult participants in this study were preparing for their futures and actively taking responsibility to address elements of the environment that were impeding, or that in the future could impede, their participation in household activities. For some participants, that preparation meant planning to move from their home because they believed they could not grow old within the existing physical environment, mainly due to the layout and size of the home. Others made modifications because they recognized the home contained current or potential safety hazards or barriers to occupational performance. Some examples included (a) adding railings to stairs outside and inside the home to reduce fall potential and make negotiating stairs easier, (b) installing a walk-in shower and grab bars to improve bathing safety and ability, and (c) replacing doorknobs with lever handles to decrease pain and improve ability when opening doors.

Even those participants who decided not to make any modifications were cognizant of how the current layout and attributes of their homes were supporting their present abilities, while concurrently identifying possible modifications they may need to

make in the future to sustain their ability to continue to live in the home. Hence, the well older adult participants in this study were aware of their home physical environment, with many choosing to address physical barriers through home modification.

A pattern of taking responsibility for self-managing their lives emerged from this group. Planning for successful aging by deciding to leave the current environment for a more-supportive setting or to make a modification to the current setting was part of how these well older adults took responsibility for themselves. Almost all of the participants exercised multiple days per week and led very active social lives. These participants knew exercising and being active would contribute to their longevity. Making a home modification was just one more way in which they were contributing to their longevity and quality of life.

Relationship to Literature

This researcher's findings revealed that when the well older adult participants in this study considered making a home modification, they were confronted with two main decisions: (a) stay in or leave their home and (b) make or not make a home modification. Each decision involved a process of considering multiple factors and weighing how the outcome of a decision would affect their lives. This finding is consistent with the work of Chen et al. (2008), Copolillo (2001), and J. P. Clark et al. (2004), who determined that older adults engage in weighing and balancing gains and losses or benefits and costs when involved in complex health-related decision-making and sort through multiple factors in that process. In addition, participants in the J. P. Clark et al. study looked at their current and future life circumstances when determining how beneficial their decision would be. This future view is similar to the way in which the well older adults

in this researcher's study were planning for their future lives in their current or in a different home.

Interestingly, Moser et al. (2009) and Gladden (2000) had findings different from the findings of this study. The older adults in the Moser et al. study used three possible types of decision-making: (a) self-determination, (b) shared decision-making, and (c) welcomed paternalism. Using the terms of the Moser et al. study, the participants in this researcher's study almost exclusively used self-determination decision-making. They gathered information from sources but ultimately made the decision alone. Although couples in this study used a form of shared decision-making, it is different from that in the Moser et al. study. Those participants had diabetes and participated in the decision-making with a health professional.

Gladden's (2000) study focused on information seeking connected with the decision-making process. She found the older adults in her study were reluctant to seek information, did not always trust the information received, and attempted to act based on what their peers did. These participants, however, were patients in a subacute care setting who were in a dependent and vulnerable position. This is in contrast to the participants in this researcher's study, who were well and confident in gathering information from various sources.

Comparing the results of the Moser et al. (2009) study and Gladden (2000) study with the results of this study, one can infer that the state of an older adult's health will influence decision-making. Well older adults who are healthy are more independent and assertive in their decision-making, whereas older adults who are sick are less confident in their decision-making abilities and rely on others to help them make decisions.

Similarly, health status influences older adult health beliefs, specifically health locus of control and health behavior. Jensen et al. (1992) and Perrig-Chiello et al. (1999) found that older adults with a high internal locus of control subjectively believed they were very healthy and demonstrated high levels of general health knowledge and motivation. These individuals were more likely to seek preventive health care services in contrast to older adults with an external locus of control who subjectively believed they were sick. Although this researcher did not empirically measure locus of control, the participants in the study demonstrated a high internal locus of control by actively planning for their futures, as evidenced by their engagement in decision-making and by seeking ways to improve their current and future home physical environment through home modification.

Likewise, this study supports the findings of a study by White (1998), who found that self-reliance, responsibility, social interaction, and exercise were indicators of wellness in community-dwelling older adults. The well older adults in this researcher's study clearly embodied all of those elements, suggesting that well older adults acting from an internal locus of control take responsibility for the state of their health, including planning for their future, which often includes making a home modification.

Some of the well older adults in this study were waiting to make a modification until a direct need occurred. This finding is supported by Bentley (2003a) who found that some older adults have the health belief that a legitimate need should exist before seeking care. Elements of this need included the significance of symptoms, visibility of symptoms, and the perception of urgency. The participants identified in this researcher's study as waiting for the future possessed similar beliefs of this justification process.

They were waiting to make a home modification until they or their spouse had a specific illness that resulted in an urgent need for the modification. Although these participants had an internal locus of control, they needed a modification to be immediately justifiable and the need to be visible rather than making a modification that they may or may not absolutely need.

Even though a small number of participants in this study did not make any home modifications, in several studies (Filion et al., 1992; Naik & Gill, 2005; Wagnild, 2001; Wister, 1989) the majority of older adult participants did not make modifications even though they planned to stay in their homes as they grew older. The reasons for not making a modification varied among the studies. Participants in the Filion et al study were comfortable, content, lived day by day, and never thought about the future. They had learned to be humble and appreciative of what they had. Wister concluded that participants in his study made an internal psychological adaptation rather than a physical adaptation of the home. These older adults accepted their limitations and health declines rather than making changes to the environment that could minimize or eliminate the limitation. In addition, the participants in Wagnild's study did not know what they could do to make aging-in-place possible. They demonstrated a lack of awareness, knowledge, and action. Similarly, Naik and Gill concluded the older adults in their study lacked awareness of the benefit of home modifications and therefore did not seek information about or request environmental modifications. The main similarities among all the participants in these studies not present in the participants in this researcher's study, is their lack of knowledge about home modifications and their acceptance of their limitations. What accounts for this difference? One cannot deny that lack of financial

resources may be a factor in why the participants in the above studies did not make a modification whereas most of the participant in this researcher's study did. Nonetheless, are there other reasons to account for this difference? The participants in this study had a pattern of taking responsibility for their own health and knowledge development. They were a well-educated group as noted by years of formal education and by degree, but they also were a group who continued to educate themselves by taking classes, volunteering, reading, and listening to radio news programs. The majority exercised several days per week and surrounded themselves with social activities. Could the older adults in this study be part of a new type of older adult? Many of the participants in the above studies, particularly Filion et al. (1992) and Wister (1989), lived through the Great Depression, which likely significantly influenced their perceptions and values about needs and finances. Although a few of the participants in this study were born at the time of the Great Depression, more of the participants were closer to being born at the start of the Baby Boomer generation. Well older adults who are Baby Boomers or who were born on the cusp of that generation may be better educated, more assertive, and more internally driven than the older generation. The combination of these characteristics make the Boomer generation of well older adults more responsible for their health and more knowledgeable about how to maintain and improve their health. As a result, this generation of well older adults may be more likely to make modifications to their homes to improve occupational performance or prevent a decline in occupational performance.

Relationship to the PEO Model

This researcher used the concepts of the PEO model (Law et al, 1996) as the overarching theoretical lens during the research process. A primary concept of PEO is

that occupational performance is the result of a dynamic interaction of the relationship among persons, their occupations, and the environment. Ideally, a congruence or fit exists among those three elements in which none dominates the other. “Over a lifetime, individuals are constantly renegotiating their view of self and their roles as they ascribe meaning to occupation and the environment around them” (Law et al., 1996, p. 17). Well older adult participants in this study made modifications to their homes to improve the fit between themselves and the environment to be able to continue to participate in their desired occupations and to maintain or improve their occupational performance. Those who did not make a home modification believed the current fit among themselves, the environment, and their occupations offered enough congruence to support their current level of occupational performance.

Many participants did make behavioral changes to the manner in which they performed occupations or chose to eliminate certain occupations but did not believe a structural change to the environment was needed. They chose to change their occupations rather than the physical environment to improve the fit among themselves, their occupations, and their home environment.

The participants who made the decision to stay in their homes for the near future but expected they would leave the home in the next 5–10 years anticipated that the current environment, with or without modifications, contained physical barriers that would exceed their future abilities to perform their desired occupations. Ultimately, they were planning to change their environment completely by moving to a different setting that they hoped would be a better fit for their future personal abilities.

Although this researcher did not use the PEO model to guide data analysis or theory development, it is interesting to note the relationship between the conditions that influenced well older adult decision-making and three main components of the PEO model: (a) person, (b) environment, and (c) occupation. For example, the Health Status condition contains properties related to the person component of PEO. The Finances condition contains properties related to the socioeconomic environment; the Participation condition contains properties related to the occupation component. In addition, the Home Environment condition contains properties related to the built environment, and the Home Offers Control condition contains properties that are an interaction of the person and environment PEO components.

A noteworthy discovery is that each decision made by the well older adults in this study (stay or go; make home modification or not) was influenced by an interaction of conditions that are easily viewed through the lens of the PEO model. This suggests that the PEO model may be a useful theoretical model for occupational therapists and other service providers when facilitating well older adult decision-making concerning aging-in-place and the use of home modification to maintain and improve occupational performance throughout the aging process.

Implications for Practice

In recent years, the area of productive aging has come to the forefront of occupational therapy practice. Aging-in-place through home modification is part of the productive aging practice area and has been identified as an emerging niche for occupational therapy practitioners (American Occupational Therapy Association, 2014). Occupational therapists are uniquely educated to consider each person as an individual

with unique abilities and intrinsic needs for occupational engagement in distinct and dynamic environments. In addition, occupational therapists are trained to assess and adapt environments, particularly the physical environment, to improve the fit among the person, environment, and occupations to maximize occupational performance (Law et al., 1996). This education makes occupational therapists ideally informed to provide home modification services. Increasingly, occupational therapists are acquiring advanced education in the area of home modification such as completing the American Occupational Therapy Association's Specialty Certification in Environmental Modification or obtaining the National Association of Home Builders' CAPS designation. Equipped with this knowledge, occupational therapists are providing programming at the community level to educate older adults about home modification, particularly those applicable to fall prevention. The information gained from this dissertation research will help expand those programs and generate new programs targeted at the well older adult population.

Home modification education programs for older adults are typically designed for those who are frail or who have a history of falls. As a result, the content of these programs focus on home modification for fall prevention. The results of this study revealed that well older adults are interested in implementing home modifications for a variety of reasons, not only for fall prevention. In addition, the well older adults in the study did not seek information or services from an occupational therapist or CAPS professional but could have benefited from their expertise. This suggests that there is a gap in services targeted toward well older adults who desire to make home modifications.

A home modification specialty team comprised of an occupational therapist and CAPS contractors can fill this gap. Education programs at the community level would focus on facilitating well older adult decision-making concerning plans to age in place or move to an alternate setting and home modification decision-making based on the conditions that influence those decisions as identified in this study. Occupational therapists should engage groups of well older adults in an educational venue to facilitate active movement through the home modification process by defining desired home occupations, analyzing the home environment for existing hazards and barriers to occupational performance, and assessing the state of their health. In addition, occupational therapists can help well older adults understand how the interaction of their abilities, their home environment, and their occupations influence their occupational performance and ultimately their ability to age in place.

Implications for Further Research

This study attempted to fill a gap within the research concerning well older adults and home modification. Specifically, the researcher used a qualitative research approach to understand how a sample of well older adults decided whether to make a home modification. What emerged from the data included the finding that these adults engaged in two decision-making processes that were influenced by a variety of conditions or factors. The researcher developed a theory of home modification decision-making that is specific to well older adults.

Future research should focus on adding to this theory by conducting a study similar to this one with well older adults who have different characteristics than those in this study to encompass more diverse backgrounds and lifestyles. These characteristics

may include individuals who live in the city, have fewer years of formal education, have a lower socioeconomic status, and who are of varied races and cultures. Qualitative research focused specifically with well older adult individuals with those characteristics would provide valuable insights into how their decision-making process concerning home modifications and the conditions influencing the decision is similar to or different from the well older adults in this study. This information would be useful to further help occupational therapists understand how well older adults perceive the use of home modifications.

In addition, another study would use a mixed-methods approach to investigate the characteristics of well older adults in relation to readiness for change, health literacy, subjective view of health, and locus of control compared with the home modification decision-making process. This type of study would provide additional data that confirm what this researcher could only assume from use of a qualitative method alone.

A second, smaller area of this study addressed the views of well older adults concerning the use of home modifications for prevention and health promotion. Although the study participants did provide valuable information to address this question, it was not the main focus of the study. A future qualitative study might make this the primary focus of research to gain a more in-depth understanding of how well older adults perceive the role of home modifications in their lives and how they perceive the need for health promotion and prevention strategies as they grow older.

Finally, an investigation of the outcomes of an occupational therapy-based education program developed and implemented for a well older adult population is warranted. Of particular interest would be a program designed to help well older adults

progress through the home modification decision-making process, including an analysis of how a home modification may benefit them based on the interaction of components of the person, home physical environment, and desired occupations.

Limitations and Delimitations

This study focused on well older adults rather than other older adult populations to fill a gap in the occupational therapy literature. Although the sample permitted the multiple methods of data collection that promoted depth of understanding within and across cases, the sample was not diverse. All of the participants were White. The fact that no persons of color volunteered for the study could simply be a function of the greater percentage of White individuals in the recruitment area, or it could be an indication of something more profound. Perhaps persons of color are less likely to be interested in considering home modifications or are not as confident in their ability to age in place and therefore did not volunteer for the study.

These participants' experiences likely diverged from the general aging population in the Central Maryland and Southern York County, PA, geographic areas in other important ways. First, all of these individuals were highly educated; in fact, several continued to attend adult education classes. Their high level of education and knowledge likely influenced their health literacy in general and specifically their comfort level in seeking information about home modifications. Individuals who have a lower level of education may have a different decision-making process about making a home modification than the 19 participants in this study.

Second, the study participants belonged to the middle to upper-middle socioeconomic classes. Although income was not specifically measured, the researcher

assumed socioeconomic status from home and property ownership, the types of homes in which the participants' lived, and neighborhoods. Persons who are in a lower socioeconomic class than the participants in this study may be influenced by different conditions and factors when deciding whether to make a home modification.

Finally, all participants were volunteers, who are likely different than nonvolunteers in that they may have had a greater level of interest in the study subject matter or may have been more likely to have made a home modification.

Another possible limitation of the research is that all participants were from a limited geographic area. Although the researcher limited participant recruitment to Central Maryland and Southern York County, PA, participants who volunteered for the study were all from one county in Central Maryland. This is likely a function of recruitment practices. Although the researcher attempted to recruit participants through flyers and newspaper advertisements in all targeted areas, she conducted in-person recruitment only in Baltimore County, MD. In-person recruitment was the most successful method.

Recommendations

The purpose of this grounded theory study was to gain an understanding of how well older adults decide whether to implement home modifications. The study resulted in a Decision-Making Process model and the Theory of Home Modification Decision-Making: Well Older Adults. The details of these results are important for occupational therapy practitioners to consider related to practice, advocacy, and education.

First, occupational therapy practitioners who have an interest in the productive aging practice area, specifically aging-in-place through home modification, should

consider advanced training or certification. With additional education to enhance current knowledge, practitioners have many options to explore avenues to provide services to the well older adult population.

Occupational therapy practitioners have traditionally provided home modification services to older adults who have impairments. Practitioners can widen the scope of their home modification services to include well older adults. Interventions for this population may be delivered in a group setting or individually. The interventions should include educational components as well as assessments of the person, home environment, and desired occupations in addition to recommendations for home modification. Further, practitioners need to consider how they can assist well older adults in the complex process of deciding whether to implement a home modification. This process involves numerous influential conditions. Practitioners should strive to develop an understanding of this decision-making process and the conditions affecting the decision, as well older adults' reasons for making or not making a home modification are different than those of older adults who are living with impairments.

Second, occupational therapy practitioners need to be advocates for well older adults who have the desire to make modifications to their homes with the goal of successfully remaining in their homes as they age. The participants in this study had the financial means to make modifications to their homes, but that is likely not the case with all well older adults. Funding agencies must begin to see home modification as a preventive health care measure rather than a reaction to an illness or injury. Occupational therapists can be champions for well older adults who desire to achieve and maintain a

higher level of occupational performance through home modification without having to wait for a catastrophic event.

Third, occupational therapy educators can incorporate information about well older adult decision-making processes into gerontology courses. It is important for students and entry-level practitioners to understand that the factors and conditions that influence well older adult decision-making related to home modification and aging-in-place may differ from other groups of older adults who are facing those decisions. As the number of older adults continues to increase in the United States with the graying of the Baby Boomer generation, occupational therapy practitioners will need to have an understanding of the different groups that comprise “older adult” or “elderly” rather than seeing this group as homogeneous.

Finally, it is important for occupational therapy practitioners to understand the roles of other professions such as architects and contractors, who are also invested in providing aging-in-place services to well older adults. Working with other professionals, occupational therapists can contribute unique knowledge and skills to help well older adults make an informed decision about aging-in-place and using home modifications to facilitate success.

Summary

This study has investigated how well older adults decided whether to make a home modification and the views of well older adults concerning modification. This research fills a gap in the literature about older adults and home modification, as those studies focused only on frail older adults.

This researcher used a grounded theory approach to gain an in-depth understanding of the topic and to produce a theory grounded in the words of the study participants. The primary results of the study was a Decision-Making Process model and the THMD: WOA. In the decision-making process, the well older adult participants encountered tipping points in their lives that led to making decision about staying in their homes or leaving and about making a home modification or not. Each decision was influenced by conditions with multiple properties. The participants weighed each decision based on the conditions to determine the most beneficial outcome for them currently and in the future. Overall, these well older adults were proactive in planning for their futures and taking responsibility for their future living situations and for the status of their health and occupational performance.

Although the study had limitations, the results have implications for a variety of occupational therapy practice areas. Occupational therapy practitioners are encouraged to broaden their aging-in-place and home modification practices to include the well older adult population and to work in concert with other professionals who have complimentary skill sets to facilitate well older adult aging-in-place.

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Appendix A: Nova Southeastern University IRB Approval



MEMORANDUM

To: Kathleen A. Subasic, MS, OTR/L
HPD – College of Health Care Services

From: Anna I. Fins, Ph.D. *IB for AF*
Chair, Institutional Review Board

Date: June 26, 2012

Re: *Well Older Adults: Decision Whether to Implement Home Modifications*
Research Protocol No. 06131209Exp.

I have reviewed the revisions to the above-referenced research protocol by an expedited procedure. On behalf of the Institutional Review Board of Nova Southeastern University, *Well Older Adults: Decision Whether to Implement Home Modifications* is approved in keeping with expedited review categories #6 and #7. Your study is approved on **June 26, 2012** and is approved until **June 25, 2013**. **However, you may not begin the study until we have a letter of approval from Towson University.** You are required to submit for continuing review by **May 25, 2013**. As principal investigator, you must adhere to the following requirements:

- 1) **CONSENT:** You must use the stamped (dated consent forms) attached when consenting subjects. The consent forms must indicate the approval and its date. The forms must be administered in such a manner that they are clearly understood by the subjects. The subjects must be given a copy of the signed consent document, and a copy must be placed with the subjects' confidential chart/file.
- 2) **ADVERSE EVENTS/UNANTICIPATED PROBLEMS:** The principal investigator is required to notify the IRB chair of any adverse reactions that may develop as a result of this study. Approval may be withdrawn if the problem is serious.
- 3) **AMENDMENTS:** Any changes in the study (e.g., procedures, consent forms, investigators, etc.) must be approved by the IRB prior to implementation.
- 4) **CONTINUING REVIEWS:** A continuing review (progress report) must be submitted by the continuing review date noted above. Please see the IRB web site for continuing review information.
- 5) **FINAL REPORT:** You are required to notify the IRB Office within 30 days of the conclusion of the research that the study has ended via the IRB Closing Report form.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Dr. M. Samuel Cheng
Dr. Rachelle Dorne
Ms. Jennifer Dillon

Appendix B: Towson University IRB Approval



APPROVAL NUMBER: 12-A077

To: Kathleen Subasic
8000 York Road
Towson MD 21252

From: Institutional Review Board for the Protection of Human
Subjects, Marcie Weinstein, Member

Date: Thursday, June 21, 2012

RE: Application for Approval of Research Involving the Use of
Human Participants



Office of University
Research Services

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2236
f. 410 704-4494

Thank you for submitting an Application for Approval of Research Involving the Use of Human Participants to the Institutional Review Board for the Protection of Human Participants (IRB) at Towson University. The IRB hereby approves your proposal titled:

Well Older Adults: Decision Whether to Implement Home Modifications

If you should encounter any new risks, reactions, or injuries while conducting your research, please notify the IRB. Should your research extend beyond one year in duration, or should there be substantive changes in your research protocol, you will need to submit another application for approval at that time.

We wish you every success in your research project. If you have any questions, please call me at (410) 704-2236.

CC:

File



Date: Thursday, June 21, 2012

NOTICE OF APPROVAL

TO: Kathleen Subasic DEPT: OCTH

PROJECT TITLE: *Well Older Adults: Decision Whether to Implement Home Modifications*

SPONSORING AGENCY:

APPROVAL NUMBER: 12-A077

The Institutional Review Board for the Protection of Human Participants has approved the project described above. Approval was based on the descriptive material and procedures you submitted for review. Should any changes be made in your procedures, or if you should encounter any new risks, reactions, injuries, or deaths of persons as participants, you must notify the Board.

A consent form: is is not required of each participant

Assent: is is not required of each participant

This protocol was first approved on: 21-Jun-2012

This research will be reviewed every year from the date of first approval.

Marcie Weinstein, Member

Towson University Institutional Review Board

Appendix C: Informed Consent Document

Informed Consent Document
Consent Form for Participation in the Research Study Entitled
Well Older Adults: Decision Whether to Implement
Home Modifications

Funding Source: None.

IRB protocol #: 06131209Exp.

Principal investigator(s)
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For questions/concerns about your research rights, contact:
The Institutional Review Board for the Protection of Human Participants
Towson University
(410) 704-2236
Or contact:

Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University
(954) 262-5369/Toll Free: 866-499-0790
IRB@nsu.nova.edu

What is the study about?

You are invited to participate in a research study. The goal of the study is to understand how older adults plan to stay in their homes as they age and what changes older adults make or considering making to their home.

Why are you asking me?

You are being invited to participate because you are an individual over the age of 65 who lives in the community and has made or has thought about making some changes to your home. There will be 30 study participants.

What will I be doing if I agree to be in the study?

You will answer one 6 and one 8 question survey to determine your ability to do certain daily activities. Based on your answers to the surveys, you may not be eligible to further participate in the study and your participation will be terminated at that time. You will also be interviewed by the researcher, Ms. Subasic. Ms. Subasic will ask you questions about why you made or did not make changes to your home and what factors influenced your decision. Ms. Subasic will also make observations of your home to look at any changes you have made or have considered making. You are under no obligation to make any changes to your home. The survey should take no more than 5 minutes to complete, the interview and observation will last approximately 60 to 90 minutes. Ms. Subasic may request to meet with you for a second interview to clarify information and/or ask additional questions or ask you to participate in a focus group. The second interview or focus group will last approximately 45 minutes.

Is there any audio or video recording?

This research project will include audio recording of the interview using a digital recorder. This audio recording will be available to be heard by the researcher, the IRB, and the dissertation chair, Dr. Dorne and no one else. The recording will be transcribed by Ms. Subasic. Ms. Subasic will wear headphones while transcribing the interviews to guard your privacy. The original digital recording will be kept securely in a locked cabinet in the home or office of the Principal Investigator, Ms. Subasic.; a copy of the recording will be downloaded onto the personal laptop computer of the Principal Investigator, which is password-protected. The recording will be kept for 3 years from the conclusion of the research and destroyed after that time by being erased from the recorder and deleted from the computer hard drive. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you

say on the recording cannot be guaranteed although the researcher will try to limit access to the tape as described in this paragraph.

What are the dangers to me?

Risks to you are minimal, meaning they are not thought to be greater than other risks you experience every day. In this study, there is a minimal risk of loss of privacy and confidentiality. The researchers will make every effort to protect your privacy and preserve your confidentiality through securing the information you provide and through not using your real name in the transcripts and any excerpts used in the research reports generated from this study. If you participate in a focus group, loss of confidentiality may be a risk if other group members share information discussed in the group with others. The researchers will request that focus group members keep all discussions confidential.

If you have any questions about the research, your research rights, or have a research-related injury, please contact Ms. Kathleen Subasic or Dr. Rachelle Dorne at the telephone numbers provided above. You may also contact the IRB at the numbers indicated above with questions as to your research rights.

Are there any benefits for taking part in this research study?

No.

Will I get paid for being in the study? Will it cost me anything?

There are no costs to you for participating in the study. If you are found not eligible to participate in the study, you will not be paid or receive a gift card. You will receive a \$10 gift card to a local grocery store at the completion of the interview and observation of your home.

How will you keep my information private?

In order to keep your information private, the recording of your interview and any printed document that could identify you will be kept in a locked cabinet in the home or office of the Principal Investigator. Electronic files will be stored on the personal laptop computer of the Principal Investigator, which is password protected. The researchers will not use your real name in the transcripts and any research report. The data in this study will be stored for three years after the study ends, after which it will be destroyed. All information obtained in this study is strictly confidential unless disclosure is required by law. The IRB and dissertation chair, Dr. Dorne, may review research records.

What if I do not want to participate or I want to leave the study?

You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you before the date you leave the study will be

kept in the research records for 36 months from the conclusion of the study and may be used as a part of the research.

Other Considerations:

If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

Voluntary Consent by Participant:

By signing below, you indicate that

- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled Well Older Adults: Decision Whether to Implement Home Modifications.

Participant's Signature: _____ Date: _____

Participant's Name: _____ Date: _____

Signature of Person Obtaining Consent: _____

Date: _____

Appendix D: Recruitment Flyer and Newspaper Advertisement



Research Participants Needed

You are invited to participate in a research study. The goal of the study is to understand how older adults plan to stay in their homes as they age and what changes older adults consider making to accomplish this. Study participants will talk with the principal investigator about their experiences.

If you are 65 or older, live in the community, and have made changes or have thought about making changes to your home and your way of doing your everyday activities, you may be eligible to participate.

Participants who complete the study will receive a \$10 gift card to a local grocery store. If you are interested in participating in the study and would like more information, please contact the Principal Investigator, Kathy Subasic at 443-491-3710 or KatrinaOT@aol.com Thank you!

Appendix E: Posting on Certified Aging-in-Place Message Board

Posting on Certified Aging-in-Place Message Board

Dear colleagues. I am an occupational therapist and Certified Aging-in-Place Specialist conducting a research study entitled: Well Older Adults: Decision Whether to Make Home Modifications. I am in the process of recruiting individuals who have made or have considered making a home modification. I am seeking participants who are 65 years of age or older, live in their own home or apartment, who are independent in most of their daily activities, and live in Southern Pennsylvania or Maryland. If you have past or current clients who fit the description above who may have interest in this study, please contact me at 304-433-6141.

Thank you. Kathy Subasic, MS OTR/L, CAPS

Appendix F: Katz Index of Independence in Activities of Daily Living

Activities Points (1 or 0)	Independence (1 Point) NO supervision, direction or personal assistance	Dependence (0 Points) WITH supervision, direction, personal assistance or total care
BATHING Points: _____	(1 POINT) Bathes self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity.	(0 POINTS) Need help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing.
DRESSING Points: _____	(1 POINT) Get clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	(0 POINTS) Needs help with dressing self or needs to be completely dressed.
TOILETING Points: _____	(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.
TRANSFERRING Points: _____	(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transfer aids are acceptable.	(0 POINTS) Needs help in moving from bed to chair or requires a complete transfer.
CONTINENCE Points: _____	(1 POINT) Exercises complete self-control over urination and defecation.	(0 POINTS) Is partially or totally incontinent of bowel or bladder.
FEEDING Points: _____	(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.	(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.

Total Points: _____

Score of 6 = High, Patient is independent.

Score of 0 = Low, patient is very dependent.

Appendix G: Lawton IADL Scale

INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (IADL)

M.P. Lawton & E.M. Brody

A. Ability to use telephone

- | | |
|---|---|
| 1. Operates telephone on own initiative; looks up and dials numbers, etc. | 1 |
| 2. Dials a few well-known numbers | 1 |
| 3. Answers telephone but does not dial | 1 |
| 4. Does not use telephone at all. | 0 |

B. Shopping

- | | |
|---|---|
| 1. Takes care of all shopping needs independently | 1 |
| 2. Shops independently for small purchases | 0 |
| 3. Needs to be accompanied on any shopping trip. | 0 |
| 4. Completely unable to shop. | 0 |

C. Food Preparation

- | | |
|--|---|
| 1. Plans, prepares and serves adequate meals independently | 1 |
| 2. Prepares adequate meals if supplied with ingredients | 0 |
| 3. Heats, serves and prepares meals or prepares meals but does not maintain adequate diet. | 0 |
| 4. Needs to have meals prepared and served. | 0 |

D. Housekeeping

- | | |
|--|---|
| 1. Maintains house alone or with occasional assistance (e.g. "heavy work domestic help") | 1 |
| 2. Performs light daily tasks such as dish-washing, bed making | 1 |
| 3. Performs light daily tasks but cannot maintain acceptable level of cleanliness. | 1 |
| 4. Needs help with all home maintenance tasks. | 1 |
| 5. Does not participate in any housekeeping tasks. | 0 |

E. Laundry

- | | |
|---|---|
| 1. Does personal laundry completely | 1 |
| 2. Launders small items; rinses stockings, etc. | 1 |
| 3. All laundry must be done by others. | 0 |

F. Mode of Transportation

- | | |
|--|---|
| 1. Travels independently on public transportation or drives own car. | 1 |
| 2. Arranges own travel via taxi, but does not otherwise use public transportation. | 1 |
| 3. Travels on public transportation when accompanied by another. | 1 |
| 4. Travel limited to taxi or automobile with assistance of another. | 0 |
| 5. Does not travel at all. | 0 |

G. Responsibility for own medications

- | | |
|--|---|
| 1. Is responsible for taking medication in correct dosages at correct time. | 1 |
| 2. Takes responsibility if medication is prepared in advance in separate dosage. | 0 |
| 3. Is not capable of dispensing own medication. | 0 |

H. Ability to Handle Finances

- | | |
|---|---|
| 1. Manages financial matters independently (budgets, writes checks, pays rent, bills goes to bank), collects and keeps track of income. | 1 |
| 2. Manages day-to-day purchases, but needs help with banking, major purchases, etc. | 1 |
| 3. Incapable if handling money. | 0 |

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

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Appendix H: Interview Guide



Interview Guide

Initial Questions

1. Tell me how you go about doing your daily activities.
2. Describe a typical day in your life.
3. Tell me how you came to think about making changes to your home (home modifications) and your way of doing things in your home.
4. When did you first notice that a change may need to be made?
5. How did you happen to make the decision to make or not make a change in your home and your way of doing things?
6. Please describe the events that led up to your decision.
7. What contributed to your decision? Who, if anyone, influenced your actions/decision? Tell me about how he/she or they influenced you.
8. What was going on in your life then? How would you describe how you viewed home modifications/changes to your home and way of doing home activities before ____?

Intermediate Questions

1. What, if anything, did you know about home modifications before you considered making a change?
2. Tell me about your thoughts and feeling when you started thinking about making a change to your home or way of doing activities in your home.
3. What positive changes, if any, have occurred in your life since you made a change or thought about making a change?

4. What negative changes, if any, have occurred?
5. As you look back on your decision to make/not make changes are there any events that stand out in your mind? Please describe the event. How did this event affect what happened?
6. Where do you see yourself in five years? Describe the person you hope to be then. How would you compare the person you hope to be and the person you see yourself as now?

Questions for participants who have made home modifications

1. What changes/modifications did you make to your home? How did these modifications change your way of doing things? What impact did the modifications have on you?
2. Could you describe how you are able to do things now compared with how you did things before you made the changes?
3. How do you think this change will impact you in the future?
4. What other changes might you consider making in the future?

Ending Questions

1. Tell me how your views about making home modifications may have changed since you made the decision to make or not make any changes?
2. What areas of the home become more difficult for older people to use as they age?
3. Do you think changes to the home can help an older person in daily life? If yes, how?
4. Many older adults are concerned about falling and other accidents in the home. Do you have this concern? If so, what characteristics of a home make falls or other accidents more likely to happen?
5. What advice would you give someone who has just discovered that he/she may need to make changes or is considering making changes to his/her home?

6. Is there anything you might not have thought about before that occurred to you during this interview?
7. Is there anything else you think I should know to understand your decision-making process about making or not making changes to your home or way of doing your everyday activities in your home?
8. Is there anything you would like to ask me?

Appendix I: Demographic Questionnaire



Demographic Questionnaire

Name _____

Participant number _____

Gender

What is your sex?

0__ Male

1__ Female

2__ Other

Age

How old are you? _____

Marital Status

What is your marital status?

0__ Now married

1__ Widowed

2__ Divorced

3__ Separated

4__ Never married

Housing

Is this house, apartment, or mobile home:

0__ Owned by you or someone in this household with a mortgage or loan?

1__ Owned by you or someone in this household free and clear (without mortgage or loan)?

2__ Rented for cash

3__ Occupied without payment of cash rent

How long have you lived here? _____

Race

What is your race?

- 0___ American Indian
- 1___ Asian
- 2___ Native Hawaiian or Other Pacific Islander
- 3___ White
- 4___ African American

Education

What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received.

- 0___ No schooling completed
- 1___ Nursery school to 8th grade
- 2___ 9th, 10th or 11th grade
- 3___ 12th grade, no diploma
- 4___ High school graduate - high school diploma or the equivalent (for example: GED)
- 5___ Some college credit, but less than 1 year
- 6___ 1 or more years of college, no degree
- 7___ Associate degree
- 8___ Bachelor's degree
- 9___ Master's degree
- 10___ Professional degree (for example: MD, DDS, DVM, LLB, JD)
- 11___ Doctorate degree

Employment Status

Are you currently...?

- 0___ Employed for wages
- 1___ Self-employed
- 2___ Out of work and looking for work
- 3___ Out of work but not currently looking for work
- 4___ A homemaker
- 5___ A student
- 6___ Retired
- 7___ Unable to work

Children

Do you have children?

- 0___ No
- 1___ Yes
If yes, how many? _____

Appendix J: Observation Template



Observation Template

1. Entrance

- * Walkway
- * Steps / ramp
- * Handrail
- * Door handle (type)
- * Threshold
- * Structural integrity of above

2. Home Lighting

3. Floor surfaces throughout home

4. Kitchen

- * Accessibility (cabinets, countertops, appliances)
- * Faucet and controls

5. Bathroom / ½ Bath

- * Commode height
- * Tub
- * Shower
- * Grab/safety bars
- * Faucet and controls

- * Door handle

6. Stairs

- * Handrail
- * Structural integrity

7. Clutter

Categories are based on areas identified from the following sources.

Clemson, L., Roland, M., & Cumming, R. G. (1997). Types of hazards in the homes of elderly people. *Occupational Therapy Journal of Research*, 17(3), 200–213. Retrieved from www.slackjournals.com/otjr

National Association of Home Builders. (2009). Design solutions. In *Design/build solutions for aging and accessibility (CAPS II)* (pp. 7.1–7.91). Washington, DC: Author.

Appendix K: Permissions

Title: The Person-Environment-Occupation Model: A Transactive Approach to Occupational Performance:
Author: Mary Law, Barbara Cooper, Susan Strong, Debra Stewart, Patricia Rigby, Lori Letts
Publication: Canadian Journal of Occupational Therapy
Publisher: SAGE Publications
Date: 04/01/1996
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