HHS Public Access

Author manuscript

Proc Hum Factors Ergon Soc Annu Meet. Author manuscript; available in PMC 2017 August 18.

Published in final edited form as:

Proc Hum Factors Ergon Soc Annu Meet. 2009 October ; 53(8): 521–525. doi:

10.1177/154193120905300808

Understanding Aging in Place for Older Adults: A Needs Analysis

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Abstract

A goal of many older adults is to remain in their own homes as they age (Beyond 50.05 Survey, 2005). However, a detailed assessment is lacking of the needs of older adults as they age in place. Using focus groups, twenty-six independently living older adults (mean age 78.8 years) from the Atlanta metropolitan area were asked to describe the tasks they perform to maintain their homes, as well as any difficulties they have performing these tasks. Participants described performing a wide range of tasks and focused primarily on physical difficulties. However, participants also reported solutions to manage these difficulties that fell into three broad categories: “Cessation,” “Perseverance,” and “Compensation.” These categories represent classes of opportunities for interventions that may help older adults remain independent in their homes longer. By understanding the nature of home maintenance problems older adults encounter while aging in place, interventions and redesign efforts can be more effective. These data suggest that interventions should start with answering physical issues.

INTRODUCTION

No one wants their power of choice taken away from them, especially when it comes to deciding where to live. The home is more than just a roof over one’s head; it can be a place of identity and comfort. However, a growing segment of the population is becoming more vulnerable to a potential loss of choice: namely, older adults. Older adults are defined as persons aged 65 and older and comprise a fast-growing proportion of the world population. They are expected to represent approximately 20% of the North American population by the year 2050 (United Nations, 2002).

This is a significant issue as older adults express a desire to maintain an independent lifestyle and to live in their own homes for as long as possible (Beyond 50.05 Survey, 2005). However, age-related changes can make living independently, or aging in place, a difficult task for many older adults. For example, cognitive abilities such as working memory, spatial abilities, and analytical skills show significant declines with advancing age (see Craik & Salthouse, 2000; 2008, for reviews). Perceptual declines are also associated with increasing age: Presbyopia and presbycusis are age-related declines in vision and hearing, respectively (Schieber, 2006; Schneider & Pichora-Fuller, 2000). Physical limitations such as decreased strength and dexterity are also more common in older adults. However, not all age-related changes are negative. Older adults show stable or increased verbal ability throughout their

lifetime (Ackerman, 2008). Thus, it is important that both positive and negative cognitive, physical, and perceptual age-related changes are considered when addressing impediments to aging in place.

Although currently approximately 80% of older adults in the United States live independently in their own homes (single-family homes or apartments) and less than five percent of older adults reside in nursing homes (Houser, Fox-Grage, & Gibson, 2006), research is lacking in understanding the needs of healthy older adults as they age in place (Gitlin, 2003). Human factors methodologies can provide fruitful avenues of research to fill this knowledge gap.

For example, Clark, Czaja, and Weber (1990) used a human factors approach to investigate everyday tasks such as cooking, doing laundry, and making the bed that were difficult for older adults to perform. The older adults were videotaped in their homes performing their daily routines. The researchers then created detailed physical task profiles of 25 tasks from the videos. Environmental supports, assistive technologies, and support services were identified as solutions to remedy the physical problems experienced by older adults. Their study was comprehensive in the level of detail captured for each of the 25 tasks profiled.

Another example of a human factors approach that furthered research on older adults in the home was a study conducted by Rogers, Meyer, Walker, and Fisk (1998). In focus groups, older adults were asked to describe the frustrations and limitations they experienced in their daily lives. Although older adults described many activities in which they encountered problems such as leisure activities, transportation, housekeeping, and home maintenance, they also described solutions to cope with the difficulties. The data indicated that nearly 40% of the problems encountered by older adults were a result of physical limitations whereas 30% were attributable to cognitive limitations. More than half of the problems could potentially be remedied by redesign, training, or a combination of the two. This study captured the breadth of activities performed by older adults, categorized the problems experienced as well as how older adults cope with their problems, and suggested areas for redesign to improve older adults' daily lives.

These studies have several implications: Firstly, the majority of older adults are able to manage their homes despite age-related changes but not without difficulties and frustrations (Clark, Czaja, & Weber, 1990; Rogers, Meyer, Walker, & Fisk, 1998). By investigating and understanding how older adults are managing and maintaining their homes, we can inform designers such as architects and industrial designers how to support these tasks. Secondly, systematic research on aging in place specific to home maintenance must be conducted to understand the needs of independently living older adults and how older adults cope with these difficulties. Thirdly, data from aging in place research must be applied such that designers can create new or modify existing environments, tools, and devices to support older adults in maintaining their homes and thereby their goal of aging in place.

The goal of the current study was to focus on the specific tasks that older adults must do to manage and maintain their homes. We used a focus group methodology to address the following questions: What tasks do older adults perform to maintain their home? Do they

experience any difficulties in executing those tasks? If so, what are the difficulties? How do older adults manage those difficulties?

METHOD

A focus group method was used to understand the difficulties that older people face in managing and maintaining their homes as well as the solutions and strategies that they have developed to cope with such problems. Focus groups provide an interactive environment in which individuals can “build off” of each other’s comments. That is, one person may describe a difficult task that reminds another participant of another difficult task and so on. In this forum, older adults can also share ideas about how to manage difficult tasks.

Participants

Older adults between the ages of 73 and 85 years were recruited for participation. Thirteen women and seven men were recruited from the Human Factors and Aging Laboratory’s participant database. These were volunteers located in the Atlanta metropolitan area who agreed to be contacted for study participation opportunities. An additional six women between the ages of 74 and 85 years were recruited from a local senior center. Focus groups were conducted at the Georgia Institute of Technology or at the senior center.

Eligible participants were required to live independently and not reside in any type of housing with home maintenance support. Participants lived either by themselves or with their spouse. Participants were pre-screened to ensure that they were not living with their children or other people (besides a spouse) who could help them with home management issues. Table 1 describes each group in detail. Overall, participants described themselves as healthy: Seven participants rated their health as excellent, twelve rated their health as very good, six rated their health as good, and only one participant rated his health as fair. Additionally, twenty out of twenty-four participants who responded lived in detached single-family homes.

Participants were compensated ten dollars per study hour completed. The study was scheduled for three hours for a total compensation of thirty dollars.

Design

Four focus groups were conducted with six to seven individuals in each one. Groups were divided by sex, marital status, and race to create a homogeneous group environment to encourage open discussions. Heterogeneity was achieved across groups.

Materials

Each participant completed a telephone prescreening interview that assessed basic cognitive functioning and a “Background Questionnaire” that asked general demographic and health questions. A “Technology Questionnaire,” “Home Characteristics Questionnaire” and an “Exit Survey” were also administered but are not discussed in depth here.

The focus group script was created to explore older adults’ issues and difficulties in managing and maintaining their homes. The script was pilot tested and revised (three

groups; $n = 12$) to ensure that the questions were clear and prompted discussion. Participants were first asked to describe the tasks they must do to maintain and manage their home as well as any difficulties they encounter in executing those tasks. Next, they were asked to talk about tasks that could become difficult given different scenarios in which a person had a physical or cognitive limitation. The available products, services, technologies, and remodeling options that could help in these scenarios were also discussed. Finally, participants were asked to describe the characteristics of the available products, services, technologies, and remodeling options that they like and dislike, and what they look for when hiring someone to update their home. We provide the data from the first topic only in the present paper.

Procedure

Upon successfully completing the telephone prescreening process, participants were scheduled for a focus group session. The “Background” and “Technology Questionnaires” were mailed to each participant with instructions that the questionnaires be completed at home and brought to the study.

Upon arriving to the study site, participants provided written informed consent. Next, the moderator introduced herself or himself (all of the female focus groups were moderated by the same female moderator; all of the male focus groups were moderated by the same male moderator) and informed the participants that the discussion was going to be digitally recorded and later transcribed. The moderator then briefly described the topic and goals of the focus group session as well as the rules for the day’s conversation.

Discussion was initiated with an icebreaker in which participants were asked to give their first names and to briefly describe what their home is like and how long they have lived there. Then the first question was posed: “What types of tasks do you have to do to maintain your home?” Participants were encouraged to describe any and all home-related tasks that came to mind. The moderator then gave various room prompts, such as kitchen, bathroom, and bedroom to make sure that a complete list of tasks was obtained. Next, the moderator suggested that the participants think about tasks that must be done on a daily, weekly, monthly, seasonal, and yearly basis to maintain their home. The moderator then asked the participants to describe any tasks they currently find difficult or the tasks they thought might become difficult in maintaining their home. Next, participants were asked to describe changes that could be made to their home to accommodate these difficulties, as well as the products, services, technologies, or remodeling options that could remedy these problems.

RESULTS

The focus group data were analyzed according to a detailed coding scheme to identify patterns and themes from the discussions. Table 2 provides details of the coding scheme used to categorize tasks, difficulties, and solutions described by the participants.

Older adults described performing a wide range of home maintenance tasks. The tasks that older adults described were coded according to of the following categories: “Indoor Maintenance,” “Moving within Home,” “Repair,” and “Outdoor Maintenance.” Tasks such

as doing laundry, cleaning the bathroom, vacuuming, and turning the mattress were coded as “Indoor Maintenance.” When participants described tasks such as moving items up and downstairs, they were coded as “Moving within Home.” The “Repair” category included tasks such as changing the sink traps or replacing light bulbs. Lastly, tasks such as cutting grass and painting the house were coded “Outdoor Maintenance.”

Participants, however, did not perform these tasks without difficulties. The problems described by older adults were primarily physical in nature and were according to the following categories: “Lack of Strength,” “Lack of Balance,” “Difficult to Climb,” “Difficult to Reach,” and “Difficult to Bend.” For example, the statement, “Cleaning bathrooms [is difficult], because it’s hard to get down on your knees,” was coded as “Difficult to Bend.”

Older adults responded to these difficulties with their own solutions that were categorized as “Cessation,” “Perseverance,” and “Compensation” following the coding structure used by Rogers, Meyer, Fisk, and Walker (1998). Under “Cessation” the sub-categories of “Task not done,” in which the participant simply stopped doing the task altogether, and “Outsource,” in which the participant had someone else do the task, were created. The category called “Perseverance” meant that the participants still did the task even though it was more difficult for them, took them longer, and/or the level of performance was lower than in the past.

Under the category of “Compensation” were three sub-categories called: “Tools and Technologies,” “Behavior Modification,” and “Home Modification/Remodeling.” The sub-category “Tools and Technologies,” meant that the participant used any product(s) that could be purchased and acted as prostheses, enhancing older adults’ abilities. For example, using dusters with extensions to dust high places was coded as “Tools and Technologies.” Changes made to routine or previously normal behavior were labeled “Behavior Modification.” One participant described simply not having visitors because the home was not as clean as desired. Modifying or remodeling one’s home to ease a difficulty was also used to manage difficulties; this was captured under the sub-category of “Home Modification/Remodeling.” For example, one participant had the fescue grass in the front lawn replaced with Bermuda grass, so mowing was not necessary in the winter months.

DISCUSSION

Older adults spend the majority of each day in their homes (Lawton, 1990). Home maintenance is required to ensure a safe and healthy environment. In fact, over one hour of every day is spent doing home maintenance (Lawton). However, a detailed assessment is lacking of the home maintenance needs of older adults as they age in place. Using a human factors needs assessment approach, focus groups were conducted to understand the specific home maintenance tasks performed by older adults, the difficulties they encounter, and how those difficulties are handled.

Older adults described performing a wide range of home maintenance tasks suggesting that they continue to actively maintain their homes as they age. However, they also reported difficulties performing tasks requiring physical effort (strength, balance, reaching, bending, and climbing). Thus, even older adults who consider themselves to be in overall good health

reportedly experience some difficulties maintaining their homes. It is therefore probable that older adults who are not as healthy would experience similar and perhaps even more problems with home maintenance.

Responses to these difficulties ranged from simply not doing the task anymore to having someone else do the task to doing the task to a sub-standard level to employing various compensatory solutions. Older adults' responses were consistent with the "selective optimization with compensation" model of successful aging (e.g., Baltes, 1997). The people we interviewed adapted to their environment by selecting certain tasks to do, optimizing their performance on those tasks, and compensating for age-related declines by using tools and technologies, modifying their behaviors, and/or modifying their homes.

By understanding the nature of home maintenance problems older adults encounter while aging in place, interventions and redesign efforts can be more effective. These data suggest that interventions should start with answering physical issues.

The categories for "Solutions" can serve as a springboard to direct and focus improvement efforts for older adults in the home. For example, the use of tools and technologies by older adults dispels the myth that older adults are reluctant to use technologies. These data are consistent with previous results showing that older adults, in general, have positive attitudes toward technologies (Rogers, Meyer, Walker & Fisk, 1998). By leveraging these data, designers can improve the design of existing home maintenance technologies and create new technologies that enable older adults to reside in their homes for as long as they desire.

Although the older adults in this study utilized various solutions to manage home maintenance difficulties, future research should investigate and assess available home maintenance solutions. There may be more options available of which older adults are not aware indicating that education and dissemination of information is required.

This study was conducted to address the lack of a detailed assessment of older adults' home maintenance needs. By understanding how older adults are managing and maintaining their homes, human factors can inform architects, home remodelers, and designers about the areas of greatest need for older adults. To that end, designers can enable aging in place and support older adults' desire to live in their home for as long as they wish.

Acknowledgments

The authors would like to thank the reviewers for their comments and suggestions. This research was supported in part by a grant from the National Institutes of Health (National Institute on Aging) Grant P01 AG17211 under the auspices of the Center for Research and Education on Aging and Technology Enhancement (CREATE) and by NIA Training Grant R01 AG15019.

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Table 1

Description of Each Focus Group

Group	N	Description	Range	Age	
				Mean	S.D.
1	6	Female, Single ^a , Caucasian ^b	78–85	80.5	3.1
2	7	Female, Married, Caucasian	73–79	76.9	2.0
3	7	Male, Married, Caucasian	76–83	79.6	2.8
4	6	Female, Single ^a , African American	74–85	78.7	3.9

^aSingle includes separated, divorced, and widowed.

^bOne participant in this group was African American.

Table 2

Sampling of tasks, difficulties, and solutions

Task*	Difficulty	Solutions
Indoor Maintenance	Lack of Strength	Cessation
Laundry	Lack of Balance	Task not done
Clean bathroom	Climbing	Outsource
Clean fan blades	Reaching	Perseverance
Vacuum	Bending	Compensation
Turn/rotate mattress		Tools and Technologies
Moving within Home		Behavioral Modification
Take items up/down stairs		Home Modification/Remodeling
Reaching for items in closet		
Repair		
Change sink traps		
Replace light bulbs		
Outdoor Maintenance		
Paint the house		
Cut grass		

* All tasks described by participants are not included in this table due to space constraints.