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Home modification by older adults and their informal caregivers

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ABSTRACT

The purpose of the study was to examine dyadic factors of home modification in frail older adults and their informal caregivers for improving health care at home in the United States. A secondary data analysis used the National Alliance for Caregiving and the American Association of Retired Persons caregiver survey dataset. Among randomly selected samples from 7 states in the U.S., 737 dyads of informal caregivers and frail older adults were selected based on age and medical conditions. Descriptive analyses and a hierarchical binary logistic regression analysis were performed. The study findings showed that the prevalence of home modification in the survey population was 42.20% in the United States. The home modifying group was likely to live together in a rural area, to consist of older care-recipients and younger caregivers, and to be Caucasian ($p < .05$). Physically functional impairments were the strongest factors of home modification ($p < .01$), while older adults living with heart disease were more likely to modify their homes ($p = .03$). In conclusion, older adults' and their caregivers' factors clearly affect home modification for health care at home. Our findings revealed that home modification represents an important contribution to multidisciplinary care and is based on comprehensive assessments, multidisciplinary decision-making processes, and careful planning of individualized interventions. Relevant policy suggestions may enhance the effectiveness of home modification to support aging in place in the United States.

1. Introduction

It is generally accepted that older adults want to live independently for as long as possible until their condition requires medical supervision (Harvard University's Joint Center for Housing Studies [Harvard University], 2013; Lawlor & Thomas, 2008; Mihailidis, Carmichael, & Boger, 2004; Mynatt, Essa, & Rogers, 2000). Among older adult community residents, 89% would prefer to stay in their own home for as long as possible (American Association of Retired Persons [AARP], 2010; Federal Interagency Forum on Aging-Related Statistics [Federal Interagency Forum], 2012; U.S. Department of Health and Human Services Administration on Aging [DHHS], 2012). Moreover, this increasing need for aging in place inevitably has an impact on the home care burden shouldered by informal caregivers. Currently, 80% of the estimated 43.5 million informal caregivers in the United States take on the primary responsibility for providing unpaid care for older adults, with most care recipients continuing to live in either their own home (58%) or their caregiver's home (20%) (AARP, 2010; National Alliance for Caregiving and American Association of Retired Persons [NAC/AARP], 2009a). Thus, older adults and their informal caregivers have an increasing need to have a variety of housing options for enhancing aging in place and caregiving for home care.

Senior housing requires safe, affordable, accessible, adaptable, and functional living features or environments in order to support persons' health care needs and independent living (AARP, 2000; Federal Interagency Forum, 2012; Fänge & Dahlin Ivanoff, 2009; Harvard University, 2013; Lawlor & Thomas, 2008). Based on a conceptual framework of social determinants of health and environmental health promotion (Northridge, Sclar, & Biswas, 2003), physical functionality is a key factor for determining independent living. Both activities of daily living (ADLs) and instrumental ADLs (IADLs) have been frequently used as physical function indicators because there is a strong relationship between chronic medical conditions and limitations in ADLs and IADLs

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(Ralph, Mielenz, Parton, Flatley, & Thorpe, 2013; Wang, Chen, Pan, Jing, & Liu, 2013). Functionally disabled adults reported more dependent living arrangements on their caregiver's living (Wang et al., 2013). Impairments of instrumental activities of daily living accelerated moving to institutionalized living (van Rensbergen & Pacolet, 2012). Home modification is emerging as an important intervention to reduce perceived difficulties in individuals' everyday activity performance (Johansson, Lilja, Petersson, & Borell, 2007).

Currently, home modification provides an intermediate step for aging in place with medical conditions in home settings prior to long-term care placement (AARP, 2010; Kaup, 2009). Home modification for aging in place provides older adults with more choice of housing and enables them to stay in the home setting for as long as 5–10 extra years (AARP, 2000; Lawlor & Thomas, 2008). This delay in unnecessarily or early nursing home placement reduces health care expenditures for both the caregivers and government programs such as Medicare and Medicaid (AARP, 2010; Lawlor & Thomas, 2008; Mynatt et al., 2000).

However, the decision to embark upon home modification is neither simple nor easy because most of the cost incurred is out-of-pocket, beyond Medicare coverage (Scan Foundation, 2011b). In 2012, $125 million was spent on home modification in the United States alone, with homeowners and their informal caregivers bearing most of the financial responsibility (Harvard University, 2013). Thus, both care recipients and caregivers are simultaneously involved in home modification decisions (Kaup, 2009). Informal caregivers, especially family members, have a major impact on decision-making in older adults' care plans because they feel responsible for caring for their older adult care recipients and often try to seek help on their behalf (NAC/AARP, 2009a). Thus, health care researchers and construction practitioners should clearly understand who decides on the home modifications to be implemented. In addition, they need to be aware of the various attributes which influence decisions related to home modification in order to maximize the resulting support for the aging in place of older adults with chronic medical conditions and their caregivers.

The literature search conducted for this study identified several gaps between two major disciplines, construction and health care research, regarding strategies that promote aging in place through home modification. First, most research has focused on the decision making process involved in placements to long-term care facilities, largely ignoring the option of aging in place through home modification. Although older adults often ask for long-term health care in home settings, current aging policies and health care services fail to pay sufficient attention to possible ways to ameliorate the effects of chronic medical conditions by addressing housing issues in the community (Federal Interagency Forum, 2012; Harvard University, 2013; Kaup, 2009). In addition, previous studies have tended to suggest practical strategies based on hands-on experience rather than gathering scientific evidence to support their conclusions. Separate approaches to improve senior housing are also found in different disciplines (Kaup, 2009), with the socio-demographic characteristics of older adults being the center of attention in construction, while their functional conditions are highlighted in health care research. However, neither discipline considers how caregivers' characteristics could contribute to achieving the goal of aging in place. To overcome these gaps, therefore, our study explored the attributes of both older adults living with chronic medical conditions and their informal caregivers. In addition, our study examined how these influence the decision to undertake home modification in order to support aging in place and facilitate health care at home. Our research questions were:

1. What is the prevalence of home modification in older adults with chronic medical conditions?
2. What are the socio-demographic and caregiving-related differences between a home modifying group and a non-home modifying group?
3. Which factors are associated with home modification decisions for older adults with chronic medical conditions and their caregivers?

2. Materials and methods

2.1. Design

A secondary data analysis of the National Alliance for Caregiving and American Association of Retired Persons (NAC/AARP) database was conducted using a cross-sectional and descriptive correlation design.

2.2. Conceptual framework

This multidisciplinary research team adapted a conceptual framework of social determinants of health and environmental health promotion (Northridge et al., 2003). Fig. 1 shows the

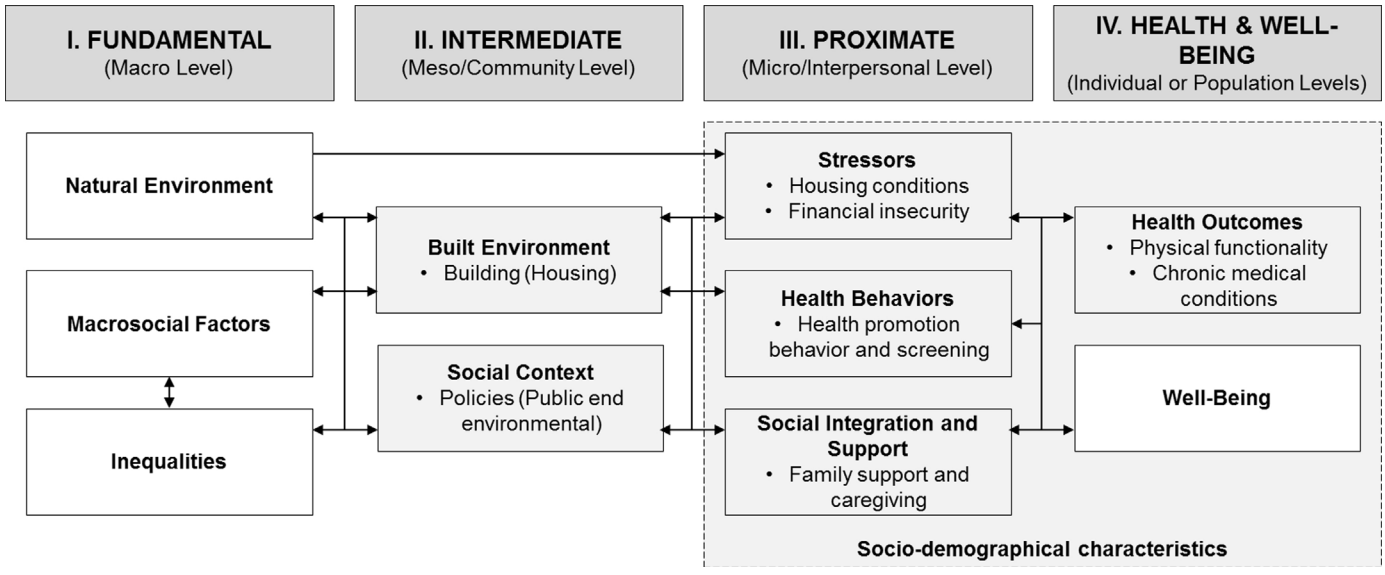

Fig. 1. Conceptual framework. *Note*. Highlighted areas were examined and discussed in this study.