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THE IMPACT OF HOME MODIFICATION AND OTHER COMMUNITY-BASED
SERVICES ON THE ABILITY TO AGE IN PLACE AMONG OLDER BLACKS AND
WHITES IN GEORGIA

By

REBECCA MARFAWTEM AMIN

Under the Direction of Chivon A. Mingo, PhD

ABSTRACT

As the U.S. population ages, there is a significant increase in functional impairment, chronic conditions and other age related health concerns. In later life, functional limitations and poor quality of health often lead to the utilization of skilled nursing care in institutional settings. However, older adults often report the desire to age in place even when experiencing health challenges. Therefore, identifying ways to promote aging in place at home as a long-term care option could enhance quality of life. The objective of the study is to examine the impact of home modification and other home and community-based services on the ability of Black older adults to age in place in comparison to Whites. The study utilizes administrative data from the Georgia Money Follows the Person program. The results indicate that race, the use of financial support and the utilization of many services were significant in attaining success in the MFP program.

INDEX WORDS: Money Follows the Person; home modification; community-based service; life course perspective; cumulative disadvantage; person environment fit

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2016

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Rebecca Amin

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SERVICES ON THE ABILITY TO AGE IN PLACE AMONG OLDER BLACKS AND
WHITES IN GEORGIA

BY

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August 2016

DEDICATION

To my grandchildren Elroy, Aidan and Daryl, with the hope that they would one day understand why they do not see their grandmother as often as they should.

To my beloved husband, Aloysius, for cheering me on and for his faith and trust in my endeavors. I would also like to thank him for all his patience and encouragement, and for providing the writing space to work on this thesis.

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1 INTRODUCTION

In almost all regions of the world, the population of age 60 and above is growing faster in comparison to that of the total population (Uhlenberg, 2013). Such rapid growth in the aging population can be attributed to advancement in healthcare, increased life expectancy, and low fertility rates, (Ortman, Velkoff & Hogan, 2014; Uhlenberg, 2013), and ultimately will have national and international financial implications (Ott, 2013; Poterba, 2014; Uhlenberg, 2013). As of 2011, baby boomers (i.e., those born between 1946 and 1964) made up approximately 20 percent of the population, with 72.1 million of them aged 65 and older (Bowman, 2009; McGill, 2014; Ortman et al., 2014). In addition to the population increase on an international and national level, many states and regions will see exponential increase among their local population of older adults (Bowman, 2009; Division of Aging Services [DAS], 2016; Uhlenberg, 2013). These trends in population aging will necessitate the introduction of new aging policies, and may bring about a number of challenges such as declining and diminished health and functionality, absence of assistance from family members, and the increased cost of living (McCallion, 2014).

Among the many challenges that are concomitant with a shift in the demographics of an aging population, older adults are often faced with age related changes that could lead to the inability to remain in their communities and more specifically the inability to remain in their homes until the end of life (Cannuscio, Block & Kawachi, 2003; Lehning, Smith & Dunkle, 2015; Scharlach, Graham & Lehning, 2011; Vasunilashorn, Steinman, Liebig & Pynoos, 2012; Wiles, Leibing, Guberman, Reeve, & Allen, 2011). According to previous research, the types of living arrangements for older adults include living independently, living with children or other family members, assisted living, group homes, personal care homes, or nursing homes (McCallion, 2014; McGill, 2014; Vasunilashorn et al., 2012). Although challenges arise that may

compromise the ability to age in place, older adults (i.e., 90%) continue to express a preference to remain in their community and/or home (Butcher & Breheny, 2016; McGill, 2014; Szanton et al., 2015; Wiles, et al., 2011). The achievement of preferred living arrangements partially depends upon various factors including health status, financial/economic status and social status (Chin & Quine, 2012; Greenfield, 2014; Padilla-Frausto, Wallace & Benjamin, 2014). Therefore, the ability to age in place is not equal across groups.

Baby Boomers represent one of the wealthiest generations (Golant, 2008); however, this wealth is not equally distributed across all racial/ethnic groups. Black older adults, including those who are baby boomers, are at an economic disadvantage when compared to Whites (Cannuscio et al, 2003; Lehning et al., 2015; Mehta, Sudharsana & Elo, 2014). Black adults are less likely to amass the amount of wealth that may be available to the White older adults due to a variety of factors including cumulative disadvantage over the life course (Dupre, 2007; McCallion, 2014; Shuey & Willson, 2008; Taylor, Hernandez, Nicklett, Taylor & Chatters, 2014). Cumulative disadvantage posits that the aforementioned inequality between Blacks and Whites does not abruptly occur in later life but ultimately is a result of inequality in educational, healthcare, occupational, and other social experiences and opportunities across the life course (Bask & Bask, 2015; Dupre, 2007; Mehta, Sudharsana & Elo, 2014; Shuey & Willson, 2008). In an effort to still find opportunities to remain in their homes and communities in the face of economic adversities, Blacks often rely on other sources of assistance such as their families, communities, and social networks to provide the support needed as they age in place (McCallion, 2014; Johnson, 1999; Mbanaso, Shavelson & Ukawuilulu, 2006; Taylor et al., 2014; Waites, 2009). Yet, the availability of these types of assistance is diminishing due to the decline in size of the younger population and the social and economic demands this population experiences

(Ott, 2013; Poterba, 2014; Taylor, et al., 2014; Uhlenberg, 2013). Essentially, changes in the demographics may lead to a decline in the quantity and quality of personal assistance available from family and friends. Research has shown that these forms of assistance are necessary in daily life and in coping with problems of poverty, physical health, and mental health (Taylor et al., 2014). This is even more so with older Blacks who have a propensity to depend on their network of family and friends for assistance with daily tasks and during emergency situations (McCallion, 2014; Taylor et al., 2014). Therefore, there may be a greater need among older Blacks for solutions to promote self-care, independence, and overall ability to remain in the home.

While there are a number of home and community-based services needed to foster self-care and maintain independence (e.g., personal care, homemaker services, chore services, home delivered meals, home modification, medical alert devices, transportation, and in-home nursing; (Padilla-Frausto et al., 2014), home modifications have been highlighted in the literature as a crucial factor in enabling aging in place (Kelly, Fausset, Rogers, Arthur & Fisk, 2014; Mathieson, Kronenfield & Keith, 2002; Schwarz, 2003; Tabbarah, Silverstein & Seema., 2000; Tanner, Tilse & de Jonge, 2008). Home modification has been defined as adapting the home environment in an effort to create the necessary support to promote participation in life activities, prevention of accidents, quality caregiving, and a reduction in the need for expensive personal care services (Mathieson, Kronenfield & Keith, 2002; Pynoos, Nishita & Perelma, 2008). Notably, as the needs of older adults change, compromising physical health and functional ability, home modifications can contribute to the ability to maintain independence, increase sense of well-being, and ultimately aging in place. However, a great deal of research has focused on the impact of home modification on aging in place independent of other services (Kelly et al., 2014; Mathieson, Kronenfield & Keith, 2002; Schwarz, 2003; Tanner, Tilse & de Jonge, 2008).

Therefore, research is warranted to further assess the impact of home modification resources on the promotion of independence and self-reliance, and the ability to age in place and how it relates to other services provided to meet similar goals. Research of this type is timely, and will provide information necessary in understanding factors that will contribute to the ability and willingness for older adults to age in place.

Therefore, the objective of this study is to examine the impact of MFP home modification and other home and community-based services on the ability of Black and White older adults to age in place. Following the introduction, the present proposal is organized in four main chapters. The goal of the chapter immediately following this introduction, is to provide a literature review that will synthesize existing research focused on the issues that influence and affect older adults' decisions and options on where to live as they age. The literature review will be presented in six subsections; 1) aging in place; provides definitions of aging in place and looks at most utilized theories to explain aging in place, 2) importance of aging in place among an aging population; examines the importance of the concept of aging in place to older adults, 3) aging in place and home and community-based services; looks at how home modifications and other home and community-based services might enable aging in place, 4) health outcomes and home modifications; discusses the impact of health problems on an older adult's need for home modifications as a mechanism for aging in place, 5) economic burden; examines the costs of home modifications and other home and community-based services to older adults and the society, and 6) Georgia programs to support aging in place; discusses the availability and impact (e.g., cost savings) of home and community-based services initiated to foster aging in place (i.e., remaining in the home) among otherwise institutionalized older adults. The literature review concludes with an overview of the relevant theories that guide the research questions. The

remaining chapters will include the research methodology, study findings, and discussion and conclusion that will include an interpretation of the results along with study practice and policy implications.

2 LITERATURE REVIEW

2.1 Aging in place

A considerable number of studies have shown that older adults prefer to live in their homes or age in place (Davey, 2006; Lehning, 2011; McGill, 2014; Scharlach et al., 2011; Vasunilashorn et al., 2012). Aging in place has been defined as a relationship between an aging individual and their environment, which is characterized by changes in both the person and environment over time (Vasunilashorn et al., 2012; Wiles et al., 2011). Aging in place gives older adults the sense of attachment, connection, security, and familiarity in relation to homes and communities, and independence (Butcher & Breheny, 2016; Tanner et al, 2008). Moreover, aging in place enables older adults to remain independent, autonomous, and connected to social support such as family and friends (Cannuscio et al, 2003; Greenfield, 2014; Lehning et al, 2015; Taylor et al., 2014).

Research focused on aging in place has been guided by several theories and perspectives including successful aging, the life course perspective, and place attachment. The concept of successful aging has been used to explain the important roles an individual plays in the society (Crowther, Parker, Achenbaum, Larimore & Koenig, 2002; Liang & Luo 2012; Rowe & Kahn, 1987, 1998; Stowe & Cooney, 2015). While there is no universally agreed upon definition of successful aging (Diognigi, Horton & Bellamy, 2011; Pruchno, Wilson-Genderson & Cartwright, 2010; Stark-Wroblewski, Edelbaum, & Bello, 2008) or one that directly links successful aging to aging in place, many associate the concepts by suggesting that characteristics of successful aging enables one to age in place (Greenfield, 2014; Lamb, 2014; Lehning et al, 2015). The characteristics of successful aging include: 1) an individual's freedom from diseases and disease related disabilities, 2) high potential for physical and cognitive functioning, and 3) remaining

active and productive (Diognigi et al., 2011; Liang & Luo, 2012; Rowe & Kahn, 1987, 1998). These characteristics originating from Rowe & Kahn (1987, 1998), have greatly influenced the study of successful aging; although, it has been criticized for being too rigid and idealistic (Crowther et al., 2002; Liang & Luo 2012; Stowe & Cooney, 2015). The main criticisms include the argument that the prevalence rates of chronic conditions increase with age therefore characterizing successful aging in terms of freedom from disease and disease related disabilities is problematic and may not be applicable to a large number of older adults. Considering aging in place within this context may be too idealistic and therefore challenging for older adults to attain (Liang & Luo, 2011; Pruchno et al, 2010) especially among those who experience physical and functional limitations. However, it is plausible that one's ability to age in place or remain in their homes or communities may be predicated on ones levels of physical and mental functionality. While successful aging defined in the classical sense does not provide a direct causal link to one's ability or willingness to remain in their community and/or home in later life, understanding the conceptual connection between components of successful aging could provide direction in predicting why people can and are willing to age in place in later life.

This ability and willingness to age in place has also been described using the life course perspective (i.e., the understanding of one's life through social, structural, and cultural experiences across the life span) (Bask & Bask, 2015; George, 2013; Stowe & Cooney, 2015). The life course perspective draws attention to an individual's life history to understand how early events have shaped individuals' present lives. Research has shown the importance of the role of childhood health in the risk of adulthood functional disabilities as well as the life time socioeconomic outcomes; while others have associated chronic conditions in later life to fetal malnutrition; and at adulthood, health-related behaviors such as drinking, smoking, poor diets

and lack of physical exercise (Mehta, Sudharsanan & Elo, 2014). Research has also shown that there are racial/ethnic disparities in health which are closely linked to the unequal distribution of economic resources and access to health care (Mehta et al., 2014; Stowe & Cooney, 2015). These disparities have been used to explain the Black-White disparity in the rates of disability in later life using the cumulative advantage/disadvantage hypothesis. The cumulative advantage/disadvantage hypothesis is defined as a situation in which the selection and allocation of resources to individuals is on the basis of status and performance, which predicts more stratified fortunes and advantages in old age than at earlier stages of the life course (Bask & Bask, 2015; Dannefer, 2003; Estes, 2006). This is more apparent among the life course of older Blacks, where the accumulation of negative events experienced at every stage of their life is amplified over time (Dupre, 2007; Mehta et al, 2014), which might affect their ability to age in place. Therefore, it would be interesting to consider the role of cumulative advantage/disadvantage in enabling older Blacks and Whites to age in place.

The importance of home and one's attachment to place as an extension of self has been discussed conceptually in the context of aging in place, through the theory of Place Attachment (Anton & Lawrence, 2014; Butcher & Breheny, 2016; Leith, 2006; Ujang & Zakariya, 2015). Place attachment theory hypothesizes that people grow a significant attachment with certain places and thus develop meaningful relationships with those places (Anton & Lawrence, 2014; Butcher & Breheny, 2016; Leith, 2006). Such relationships become incorporated into their lives and part of their identity. Place identity, which is considered a subset of place attachment, indicates that the identity of the person or people are defined by the elements/activities or events in that environment (Ujang & Zakariya, 2015), as well as by memories, ideas, feelings, attitudes, values, preferences, meanings and conceptions of behavior and experiences occurring in places that satisfy an individual's biological, psychological, social, and cultural needs (Anton &

Lawrence, 2014). This is particularly true for older adults who have lived in the same place for an extended period of time (Anton & Lawrence, 2014; Butcher & Breheny, 2016). The preference to remain in the home even in the face of health challenges such as functional decline and physical disability is not simple in nature. Homes hold physical, social and biographical meanings of place that add to the complexity around the decisions to transition out of the home (Leith, 2006). Moreover, place attachment is positively correlated with health and community participation (Anton & Lawrence, 2014; Butcher & Breheny, 2016). Specifically, one who expresses a strong bond or sense of attachment to home and/or community is more likely to report positive health and remain engaged in community activities (Anton & Lawrence, 2014; Butcher & Breheny, 2016; Ujang, 2015). Therefore, place attachment is an enabling factor to aging in place because it does not only explicate the importance of one's home/place in social, economic and cultural context but also brings out the health benefits of remaining in one's home and community in later life.

Successful aging, life course and place attachment are relevant to the understanding of aging in place because they provide explanations as to why older adults would want to remain in their homes and the benefits that are a result of that decision. Successful aging elucidates the aging process, the characteristics of who can age in place and why, the life course perspective explains the disparities within the population and why some members of the population could be in a disadvantageous or advantageous position to age successfully due to life- long negative/positive events. The place attachment theory then explains why older adults would prefer to age in place despite their respective positive/negative situations in life because of the bonds they have made with their possessions homes and communities.

2.2 The importance of aging in place among an aging population

Recently, research has examined how older people understand the meaning of "aging in place", a concept widely used in research and policy but has had limited use by older adults themselves (Wiles et al., 2011). As the populations age, it is imperative that we not only focus on the fact that individuals are living longer, but also focus on the quality of life during those years. The meaningful connection to home and the home environment as well as the ability to age in place are significant contributors to quality of life for older adults (Anton & Lawrence, 2014; Butcher & Breheny, 2016; Leith, 2006; Ujang & Zakariya, 2015; Wiles et al, 2011). In addition, aging in place is substantially more than just being able to stay in one's home but also an opportunity to remain in the community where one had a sense of belonging (Vasunilashorn et al. 2012; Wiles et al., 2011). Many older adults who have owned their homes for an extensive period of time are satisfied with the stability of their neighborhoods, their independence, and the reliability of their social relationships (Butcher & Breheny, 2016; Golant, 2008; Leith, 2006). Likewise, many older adults who live in multigenerational households as well as apartment complexes where they own or rent their homes receive the same benefits from their home and community (Greenfield, 2014; Lehning et al, 2015; McCallion, 2014). Some of these communities such as the Naturally Occurring Retirement communities (NORC) provide the older adult easy access to banks, faith communities, doctors' offices, libraries and public transportation; and also to services such as healthcare management and chronic disease prevention activities, recreational activities and volunteer opportunities (Greenfield, 2014; McCallion, 2014).

Although aging in place seems to serve as a benefit in the well-being of older adults (Greenfield, 2014; Lehning et al., 2015; McCallion, 2014), concerns in making aging in place a

reality for the majority emerge. One challenge worthy of highlighting is the provision of specialized healthcare and other services often needed to remain in their homes and communities (Leith, 2006). There are different levels of proximity to healthcare services depending on the nature of living arrangement such as independent living facilities, congregate housing facility, assisted living community and nursing home, and individual homes are the most disadvantaged (Leith, 2006). Therefore, it is imperative to identify strategies to bridge this gap in healthcare service provision and utilization to overcome issues that impact one's ability to age in place and ultimately one's quality of health.

Traditionally, families have been at the center of healthcare and other services that help older adults remain in the home in later life (Butcher & Breheny, 2016; Johnson, 2009; Mbanaso et al, 2006; Taylor et al., 2014). However, family structures are changing (Johnson, 2009; Uhlenberg, 2013). What constitutes a family and how one can depend on that family has continued to change over time (Johnson, C. L., 1999; Johnson, M. L., 2009; Uhlenberg, 2013). Johnson (2009), states that the changes in family structure over the past decades have raised serious concerns about the capacity and commitment of domestic units to provide support for aging family members. In fact, families have been criticized for abandoning their responsibility to provide informal care for aging relatives (Johnson, 2009; Taylor, et al., 2014). The discussion of caregiving responsibilities extend beyond the family, and have become a political and societal concern. While some feel policies should not interfere with familial plans or resources, others prefer and ask for institutional means for the care of the older adults due to the lack of time and resources to assist in caregiving for older relatives. The availability of these alternate sources of care would enable older adults to age in place (Chin & Quine, 2012; McCallion, 2014).

Studies have shown that there are racial/ethnic differences in caregiving and family ties (Johnson, C. L., 1999; Johnson, M. L., 2009; Mbanaso et al., 2006; McCallion, 2014; Taylor et al., 2014). In general, Blacks have been found to have wider family ties in comparison to Whites (Johnson, C. L. 1999; Johnson, M. L. 2009; Mbanaso et al., 2006). The processes that explain the more active and supportive kinship networks among Blacks in comparison to their White counterparts include determining how Blacks define family and kinship members, as well as their expectations for kin and the desired levels of reciprocity (Johnson, 1999). Blacks have more flexible boundaries when defining families, including fictive kin and upgrading distant relatives to primary kin (Johnson, 1999; Mbanaso et al., 2006). When comparing Blacks and Whites, Blacks were significantly more involved in family life. Even though 45% of older Blacks were childless, secondary relatives provided the needed support (Johnson, 1999, Taylor et al., 2014). Moreover, in childless marriages, the spouse in better health provides caregiving services to the ailing spouse (Johnson, 1999; Mbanaso et al., 2006). Nevertheless, these kinds of support are diminishing as family structures are changing regardless of race and people are facing various social and economic challenges (McCallion, 2014; McGill, 2014; Ott, 2013; Uhlenberg, 2013). Hence the giving and receiving of care seems to be transitioning from the families to the communities at large. For example, Mbanaso et al., (2006) argue that the ability to age in place is often predicated on the amount of social capital available. Social capital can be defined as the resources within relationships that bring value that would not exist in the absence of the relationship (Mbanaso et al., 2006), and the benefit an individual receives from social connections and social relations with others, which are created from voluntarism and participation in community activities (McCallion, 2014). These discussions on the role of the

family and community, and the definition of social capital therefore portray how one's social ties can enhance their ability and willingness to age in place.

Understanding how older Blacks, in particular, will achieve aging in place in the presence of diminishing support networks that have historically been a part of their long-term care is crucial (Johnson, C. L., 1999; Johnson, M. L., 2009; Mbanaso et al., 2006). It is plausible that Blacks will be forced to rely on their own abilities to perform these tasks, which might necessitate the utilization of community-based services such as modifying their home environments and utilizing equipment to make tasks in later life more manageable. Considering the importance of aging in place on quality of life and well-being for all older adults, while simultaneously understanding how changes in familial structure may place certain racial/ethnic groups at a disadvantage for this option, since the physical and functional status and need for services might vary by race, future research is needed to explore in depth the need and benefit of home and community based services that could serve as support for enhancing the likelihood of aging in place. Socioeconomic vulnerability may also exacerbate the needs for services across racial groups.

2.3 Aging in place, and home and community-based services

As previously indicated, home is more than just a physical location. Home includes a combination of complex conditions (i.e., past and present) that bring together memories, images, fears, and desires (Anton & Lawrence, 2014; Butcher & Breheny, 2016; Leith, 2005). Therefore, the meaning of home can vary tremendously across groups and individuals. Golant (2008), posit that a quarter of the homeowners in the United States are people ages 65 and above. Within this, 83 percent of those between 65 and 74 own their homes, and 79 percent of those ages 75 and over own their homes (Golant, 2008). Older adults own and occupy some of the most expensive

properties, and most of their wealth is on the property in the form of equity (Golant, 2008). For those with a desire to avoid moving into a nursing home when health challenges arise, their homes become the most reliable settings to receive long-term care (Davey, 2006; Kelly et al., 2014; McCallion, 2014). Therefore, being able to remain in one's home will require that the home is kept in suitable conditions and that there are services available in the community to make it possible for them to remain in their homes and communities.

2.3.1 Home and community based services

A number of home and community-based services are available to individuals in need (e.g., home delivered meals, Emergency Response Button, skilled home health, personal care, adult health/day care programs, respite care, home delivered services, house cleaning, shopping, laundry, care giver support, financial support, support for household tasks and home modifications) that will ultimately reduce the need for transitioning out of the home and enhance quality of life (GDCH, 2013; DAS, 2016; Peebles & Kehn, 2014; Reinhard, 2012). Services of this type are oftentimes made available through different programs. However, in many cases, individuals are unaware of the availability or have limited knowledge on how to access such services (McCallion, 2014; Mehta et al.' 2014; Taylor et al., 2014). Among the aforementioned services, home modification (i.e., when the home environment is adapted so as to prevent accidents, promote participation in activities, reduce the need for expensive personal care services and thus promote aging in place) has gained a great deal of attention in the literature. In fact, home modification has emerged in the literature as an important service especially as people age because for many older adults, their home is not only their main source of wealth (davey, 2006; Golant, 2008), but is where they have lived and built connections with family and community and so cannot think of moving out (Greenfield, 2014; Lehning et al., 2015; Wiles et

al., 2011). At the same time, due to their physical and functional limitations, different features of their home hinders them from living comfortably and independently. Therefore home modifications are crucial in providing the balance between their physical and functional needs and their home environment.

Suitable home environments are vitally important (i.e., a home environment that accommodates physical, functional, and social needs). As mentioned earlier, this adjustment of the home environment has been referred to as home modifications (Mathieson et al., 2002; Pynoos et al., 2008; Tabbarah et al., 2000; Tanner et al., 2008). The concept and research focused on home modification is just a few decades old (Lawton, 1985). However, people have always adapted their homes as they aged and the need arose (Lawton, 1985; Lawton & Nahemow, 1973). Lawton's works are at the forefront of research on a person's environment and environmental modification (Regnier, 2003). To better understand this relationship between a person and his environment, Lawton utilized the theory of the Person-Environment Fit (i.e., the need to balance the challenges of the environment with available support to sustain and enrich life (Lawton, 1985). Lawton (1985) and Lawton & Nahemow (1973) emphasized elements of home modifications such as grab bars, non-skid surfaces, level of appliances and their relations to the Activities of Daily Living (ADLs) as well as how to maximize a person's knowledge of their environment to promote control of the environment.

To date the majority of the home modification literature has mainly focused on the home environment as a physical space where tasks are performed and thus the impact of home modification is on functionality and competency (Tanner et al., 2008). However, Tanner et al. (2008), described the home environment as three primary modes of experience – the physical home, the social home, and the personal home. Therefore, home modification portrays the

importance of home in providing personal and social meaning as well as providing safety, comfort and independence for older adults at home thus supporting the place attachment theory.

The ability for older adults to remain in their homes will depend on abilities to keep their homes in good, safe and comfortable conditions (Davey, 2006). Research has indicated that a supportive physical environment can enhance the successful adaptation of declining functional abilities of older adults (Jopp & Smith, 2006; Pynoos, Nishita & Perelma, 2008). Therefore, establishing the correct fit between an individual's abilities and the demands of the environment is imperative (Pynoos et al., 2008) particularly for older adults who desire to remain in their home indefinitely. Creating a balance between changes in the person and changes in the environment ultimately will yield a greater sense of overall satisfaction and quality of life (Jopp & Smith, 2006; Gitlin et al., 2001; Pynoos et al., 2008). Therefore, modifying the home environment will enable older adults to perform such tasks and activities that are necessary for them to remain in their homes.

2.4 Health outcomes and home modifications

As previously stated, the increase in the prevalence of chronic conditions and disability among the aging population has become a growing public health concern (Mehta et al., 2014; Mullen, McAuley, Satariano, Kealey & Prohaska, 2012; Szanton, et al., 2015; Tabbarah et al., 2000; Wahl et al., 2009). Although the percentage of older adults with disabilities decreased in recent years, the 85 and older population who experience more incidence of functional and cognitive impairment is expected to triple over the next 40 years (Pynoos et al., 2008; US Census Bureau, 2008). In more than five million older households, there is at least one member with a functional limitation (Pynoos et al., 2008). Physical and functional limitations such as self-reported problems with stooping and kneeling affect older adult's quality of life (Mullen et al.,

2012). Mullen et al. (2012) also argue that, with functional disability, one is unable to perform physical activities such as walking, climbing stairs and lifting, all of which are considered normal daily activities. Wiles et al., (2011) add that having to step up or down to get into the house, not having the bathroom, bedroom and kitchen on the same floor, and having more than four rooms in the house are all challenging. Notably, physical and functional limitations are the leading causes of older adults' transition from home to nursing home or other long-term care facilities (Mullen et al. 2012). Many of these transitions from the home to the nursing homes are due to the lack of supportive environments for the older adults to remain in their homes (Mullen et al., 2012; Pynoos et al., 2008).

Therefore, adapting the home environment to accommodate the limitations faced by the older adult is necessary. Also, with home modifications and mobility equipment, older adults have many positive outcomes with functionality, as well as a reduction in healthcare costs and institutionalized care (Pynoos et al., 2008; Mathieson et al., 2002). Home modification can also ease the demands of the home environment and enhance the person-environment fit (Pynoos et al., 2008). Hence home modification does not only reduce cost over time, but also improves health by keeping the older adults active while reducing accidents at home (Lawton, 1985; Lawton & Nahemow, 1973; Mehta et al., 2014; Tabbarah et al., 2000). This underscores the importance of evaluating the need for adapting the physical environment of homes and communities as a way to delay or prevent transitions from home to long-term care facilities.

Despite the apparent relationship between health and home modification, determining the types of services needed by an individual may be challenging. Therefore, the varying problems older adults have with their home environment and solutions to those problems have been identified in the literature (Gitlin et al., 2001; Pynoos et al., 2008; Silverstein & Seeman, 2000;

Tanner et al., 2008). The use of assistive devices such as wheel chairs, canes and walkers have sometimes been the main reasons for the modification of the home environment (Seplaki, 2013). The use of assistive devices and environmental modifications could promote individuals' capabilities, personal assistance and behavioral change (Kelly et al. 2014; Seplaki, 2013). In fact, older adults rate performing daily activities such as cooking and completing hygienic activities as an important factor in their quality of life ultimately suggesting that successful functioning in the home setting is the ability to balance between the challenges presented in the environment and an individual's capacity to meet the challenges (Kelly et al., 2014; Seplaki, 2013). Therefore, the problem of "person-environment fit" can be tackled using compensatory strategies such as environment modification, assistive devices (ADs), personal assistance, and behavioral change all of which improve older adults' level of activity and performance at home and allow them to age in place.

Research to date shows that older adults' homes need to be adapted to the physical, psychological, financial and social changes as they age (Lawton, 1985; Lawton & Nahemow, 1973; Mathieson et al., 2002; Gitlin et al., 2001; Tabbarah et al., 2000; Tanner et al., 2008). While home modification may not be the only service needed for older adults to age in place, it seems to be a component that becomes vitally important as families and providers consider ways to make remaining in the home a reality for older adults that desire this option. Much of the research focused on home modification and its impact on aging in place examines this impact independently of other services with similar goals (Gitlin et al., 2001; Tabbarah et al., 2000; Tanner et al., 2008). In addition to home modification, other home and community based services such as specialized medical equipment services, caregiver outreach and education services, household goods and services, home delivered meals, and community ombudsman

services have been utilized to provide support for older adults who desire to age in place (Bohl, Schurrer, Lim & Irvin, 2014; DAS, 2016, 2014; Peebles & Kehn, 2014). Home modification, and other home and community based services will require an understanding of the physical and functional limitations, the knowledge of what changes can be done in the home to address these limitations, and how to utilize these modifications. More so because research has consistently highlighted health disparities between Black and White aging individuals (McCallion, 2014; Mehta et al., 2014). For example, even when the level of education between the Whites and Blacks were similar, Blacks still fared worse in health than Whites (Dupre, 2007; Shuey & Willson, 2008). Therefore, there are many underlying issues that account for these disparities and subsequent differences in needs between Whites and Blacks. Notably, little to no research has examined difference in the utilization of home modification along with other home and community-based services by race/ethnicity. Therefore, it is unclear how previous research can be applied across all racial/ethnic groups; future research is warranted.

2.5 Economic burden

There is some degree of self-sufficiency with regards to home maintenance and other home and community-based services; however, few older adults are capable of affording these services necessary for them to remain in their homes (Davey, 2006). While the importance of home modification, and other home and community-based services in enhancing independence of older adults cannot be over emphasized, the cost of maintaining a home is sometimes a major barrier to achieving this independence. More than 50 percent of older adults spent more than 30 percent of their income on housing (Lehning, 2011). This provides an example of the economic burden associated with maintaining a suitable home environment in later life. Also, many older adults explain that they couldn't afford to live in retirement villages, but would age in place if

they had enough income, and if there were provision of services they needed, as well as if they could afford basic costs, and also they would prefer living independently in communities, close to family members (Davey, 2006). This further confirms that older adults would prefer to aging in place, if they had easy access to services that are needed, and if they can afford the costs of maintaining and modifying their homes to enable them to age in place.

Despite the availability of community-based programs designed to assist older adults to remain permanently in their homes, many public reimbursements have favored institutional care (Lehning, 2011). However, having the ability to age in place has been shown to reduce costs of care for older adults (Chin & Quine, 2012; Reinhard, 2012), while meeting their needs. For instance, the estimated cost to Medicaid for institutional care such as a nursing home, is \$60,000 annually per person as compared to \$18,000 for home care (Division of Aging Services (DAS), 2014). Therefore, there has been a shift away from the utilization of costly institutional care to care at home (Chin & Quine, 2012). This shift has resulted in a number of programs put in place to assist older adults who are remaining in their homes (Bohl, Schurrer, Lim & Irvin, 2014; DAS, 2016, 2014; Reinhard, 2012). In addition to health status, financial resources play an integral role in the ability and willingness to age in place. In fact, costs are at the center of all decisions to age in place or in long-term care institutions (McCallion, 2014; Padilla-Frausto, Wallace & Benjamin, 2014). Recent research focused on programs that provide community-based support that enables older adults to remain in the community and out of the nursing home have shown a societal and individual cost benefit (Bohl et al., 2014; Peebles & Kehn, 2014). With a reduction in cost to the society, more people may benefit from the available resources to enable aging in place.

2.6 Georgia programs to support aging in place

Georgia, like many states in the U.S. is facing a significant increase in the population of older adults. This increase in population will have far-reaching effects in the state, and many state and national programs are in place to address some of the issues encountered by the older adults (DAS, 2016; 2014). A number of programs are currently available to assist older adults with services that will allow one to remain in the home in the face of health challenges. Medicare and Medicaid provide funding support for such programs in effort to reduce cost that would be associated with institutionalizing a person in need of care. Three of these programs are Community Care Services Program (CCSP), Options Using Resources in a Community Environment (SOURCE) and Money Follows the Person (MFP). These are all Medicaid Waiver programs (Bohl, Schurrer, CCSP / DAS, 2016; GDCH, 2016; Lim & Irvin, 2014; Peebles & Kehn, 2014; Reinhard, 2012). Medicaid provides health coverage to many Americans, including eligible low-income adults, children, pregnant women, elderly adults and persons with disabilities. Medicaid is jointly funded by the federal and state government and is administered by each state. Medicaid pays for long-term care services in different settings (Bohl et al., 2016; GDCH, 2016; Lim & Irvin, 2014; Peebles & Kehn, 2014; Reinhard, 2012). This is done through “Medicaid Waivers”, also called Home and Community Based Services (HCBS) or Waiver Funded Services (DAS, 2016; GDCH, 2016). Many older adults are benefiting from the Medicaid waivers through programs such as CCSP and SOURCE and MFP. These programs are discussed in more details below.

Community Care Services Program (CCSP) is a Georgia statewide program that seeks to ensure safe and independent lives of older and/or functionally disabled Persons i.e., the consumers), their families, and caregivers. Consumers must be Medicaid eligible, meet nursing

home admission criteria (i.e., functional and financial), and be approved by a physician. CCSP provides a range of community based services to help consumers remain in the community (DAS, 2016; GDCH, 2016). The Division of Aging Services administers CCSP through contracts with 12 Area Agencies on Aging to regionally manage the program and provide consumer case management. The services provided include Emergency Response Button, home-delivered meals, skilled home health, personal care, respite care, adult day care program and community living homes (CCSP/DAS, 2016). The CCSP is the program choice for 96.5% of eligible consumers assessed. Services and care coordination provided through CCSP, delay or prevent institutionalization of consumers and help consumers remain at home and in the community (CCSP, 2014). Comparing nursing home cost and CCSP Medicaid costs – in Second Fiscal Year (SFY) 2014, CCSP cost per person was \$9,031 while nursing home cost per person was \$31,368 (CCSP, 2014). In the SFY 2014 CCSP enabled 14,145 individuals to remain in the community. However, about 1,686 eligible individuals are waiting for services (DAS, 2014). Still in the SFY 2014, 154 CCSP clients benefited from transitions back to their communities, which was about 55% of the total MFP statewide transitions. MFP provides medical equipment and home modifications (and other services) for CCSP members when they leave the nursing home (DAS, 2014).

The Service Options Using Resources in a Community Environment (SOURCE) program is another program designed for older adults in Georgia (DCH, 2013). It caters to frail elderly, and disabled Georgians who need the level of care offered in nursing homes. The program allows care to be provided in their homes or communities (e.g., assisted living, personal care homes). The program provides medical care and non-medical personal care services to very low income persons. In 2016, over 20,000 Georgians statewide have received assistance. The general

enrollment period is two months. The waiver is operated under Medicaid's Elderly and Disabled Home and Community Based Services Waiver. Those eligible for this program must be 65 years or older and must have a disability; need nursing home level care; have income and savings in 2016 of \$733 per month, which is the current Supplemental Security Income (SSI) rate; and their cash, savings, and other liquid assets cannot exceed \$2000. The services provided by SOURCE is on a case by case basis and include 24 hour medical access, skilled nursing services, adult day health/adult day care, alternate living services/assisted living services, Emergency Response System, home delivered meals, home delivered services, and personal support services (i.e., housecleaning, shopping, laundry, ADLs, respite care (GDCH, 2013; Georgia SOURCE Medicaid Waiver, 2016). While CCSP and SOURCE provide valuable home and community-based services to Georgians who prefer to remain in their homes, they do not however provide home modification services to their clients. As has been stated previously, home modification is a vital factor in aging in place.

Money Follows the Person (MFP) is a nation-wide grant offered through the Centers for Medicare and Medicaid Services (CMS). The MFP program identifies and transitions eligible persons from long-term acute care settings back to the community. The 12 Area Agencies on Aging greatly assist MFP transitions (Bohl et al, 2014; Peebles & Kehn, 2014; Reinhard, 2012). MFP in Georgia, is administered through the Georgia Department of Community Health (GDCH). Some of its goals are to enhance the use of home and community instead of long-term care institutions and to promote the state's continuous provision of home and community-based services to persons who transition from institutions to home settings (Bohl et al., 2014; GDCH, 2013; Peebles & Kehn, 2014; Reinhard, 2012).

The MFP home modifications carried out include installing grab bars, knee space under sinks, ramps and widening doors to promote independent living (Bohl et al., 2014; Peebles & Kehn, 2014). These are home modifications that promote the independence of older adults, which will aid in keeping them in their home and out of the nursing homes. As stated by Reinhard (2012), MFP is “un-burning bridges and facilitating a return to the community” p. 54. Although MFP does not target only older adults, it plays a vital role in aiding older adults to age in place thus not only promoting independence but cutting down costs of long-term care.

These three programs assist low income older Georgians to improve and maintain comfort and independence at home. Notably, all three programs are aimed at cost reduction for all stakeholders and in enabling older adults to age in place. Although they each provide various services, and sometimes complementary and supplementary services, it is important to note that MFP alone provides home modification services (CCSP, 2014; DAS, 2014), which are necessary in the ability to age in place for many older adults (DAS, 2014; GDCH, 2016; Peebles & Kehn, 2014; Reinhard, 2012). Although these programs have been seen to be important and necessary, it is unclear how home modifications and other home and community-based services collectively will impact older adults’ ability to remain at home and out of the institutions. While it is not clear whether there are racial/ethnic difference in the impact of such programs. Based on the life course perspective and cumulative disadvantage hypothesis, Blacks and Whites have different experiences across the life course, which may have resulted in varying outcomes that can contribute to not only health but healthcare disparities (Bask & Bask, 2015; Dannefer, 2003; Shuey & Willson, 2008). For example, the prevalence of disabilities is higher among Blacks than among Whites (Mehta et al., 2014; Shuey & Willson, 2008), which might necessitate a greater

need for specialized medical equipment and home modification services to promote aging in place among Blacks compared to Whites.

Therefore, the objective of this study is to examine the impact of MFP home modification and other home and community-based services (i.e., caregiver support, financial support, social support, transportation support, equipment support, house support, home modification support) on the ability of Black and White older adults to age in place. With this objective in mind, the research questions are:

- 1) What are the characteristics of MFP participants and do the characteristics vary significantly by race?
- 2) What factors are associated with success from MFP participation and specifically how does race influence success of individuals participating in MFP?

Based on the aforementioned literature, which suggests that there may be potential race differences in need, utilization, and impact in home and community based services, four hypotheses are presented. First, there will be significant race differences in utilization of home and community based services with Blacks utilizing more services than Whites. Second, factors significantly correlated with success among Whites will be different from factors significantly correlated with success among Blacks. Due to the exploratory nature of this study and the lack of extensive research on the relationship between unique home and community based services and aging in place across racial/ethnic groups, a non-directional hypothesis is presented. Third, race will have a significant impact on success. Specifically, being Black will increase the likelihood of success from the MFP program. Fourth, home and community based services (i.e., caregiver support, financial support, social support, transportation support, equipment support, and house

support) along with home modification support will increase the likelihood of success for MFP participants.

2.7 Relevant theories

While the aforementioned research questions and hypotheses are not designed to test a specific theory, two key theories guided their conceptualization. These theories are the person-environment fit theory (Lawton, 1985; Lawton & Nahemow, 1973; McCallion, 2014) and the life course perspective. The theories support the idea that as people age they have to adapt or adjust their environment to fit their current physical and functional abilities, and that earlier occurrences in an individual's life may enhance or impede one's ability to live as they would desire to. These theories will help explain and provide an understanding of the changes of the person with age, the environment and the reasons for the need for services that foster aging in place.

The relationships between older people and their environment are discussed in terms of support – autonomy and behaviors that involve environmental reactivity and proactivity (Lawton, 1985). Lawton (1985), explains how support is needed and accepted in one level and autonomy maintained in another level. He refers to the balance between change of the person and change in the environment as the person-environment transaction or relationship. This relationship is shaped by how proactive the individual is in coping with the changes in the person and the environment and how the person refashions the environment to cope with the changes in the person (Lawton, 1985; Lawton & Nahemow, 1973; Regnier, 2003; Seplaki et al., 2013). To achieve this balance satisfactorily, the person has to create an environment that is suitable despite some special limitations. Looking at the different characteristics of the home, Lawton (1985); Lawton & Nahemow (1973) conceded that often the environment did not support the personal growth of the older adults. The person-environment fit theory, explains this complex relationship

between the person and their physical and functional status at a given time and their ability to adapt or adjust their homes to address their needs so as to maintain their independence and quality of life.

As earlier discussed, the life course perspective looks at the development of an individual as a dynamic process that is lifelong, and which integrates historical time and place, as well as factors of social structure (Stow & Cooney, 2015). In the discussion of the life course perspective, the cumulative advantage/disadvantage hypothesis is often examined because the differences in the life outcomes of individuals have been associated with the privileges or the lack thereof of experiences had earlier in their life course (Bask & Bask, 2015; Dannefer, 2003; Stowe & Cooney, 2015). For example, the education or literacy level might affect an individual's income and wealth accumulation, which in turn affects their health thus creating disparities between individuals, even of the same cohort (Shey & Wilson, 2008). The life course perspective is therefore relevant in comparing life outcomes especially later life outcomes of Blacks and Whites.

This study on aging in place, home modification and other home and community-based services considers the arguments of the aforementioned theoretical frameworks as a way to conceptualize why the MFP home and community based services may be a key factor in one being able to successfully age in place.

3 RESEARCH METHODS

The objective of this study is to examine the impact of MFP home modification and other home and community-based services (i.e., caregiver support, financial support, social support, transportation support, equipment support, house support, home modification support) on the ability of Black and White older adults to age in place. Specifically, research question one (i.e., what are the characteristics of MFP participants and do the characteristics vary significantly by race?), is addressed using descriptive and inferential descriptive analyses. Research question two (i.e., what factors are associated with success from MFP participation, and more specifically how does race influence success of individuals participating in MFP?) is addressed using logistic regression analyses.

3.1 Data source and study population

The data source for this study include the 2015 administrative state level data collected from participants in the Georgia Money Follows the Person (MFP) program. The MFP program, is a Medicaid waiver program designed to assist in the transition of persons staying in nursing homes and other long-term care facilities back to their homes and communities. The inclusion criteria for participation in the program were 1) having nursing home or long-term care institution stay for at least 90 consecutive days, 2) transitioning from the nursing home back to their homes and communities but still in need of institutional level care, 3) must be Medicaid eligible, and 4) transitioning to a qualified residence (e. g. house or apartment). The data consisted of 204 program participants. However, there 31 respondents that either had missing data (n = 29) or identified as Native American or other (n = 2). Those who identified as White Hispanic were included with the 89 Non – Minority White. Therefore, the data includes 173 participants who met the race criteria (92 Whites and 81 Blacks). Other than income, no other

variables had missing data. Missing income data was limited, therefore; instead of using case wise deletion and further reducing the sample size, a mean imputation was conducted to replace missing values. Specifically, missing income was replaced with the mean of the non-missing values for income. Mean imputation is an acceptable way of addressing missing data because the mean of the variable been studied will not change. The average age of the 173 participants was 63 years. This study examined the characteristics of the participants of the program in order to compare the White and Black participants.

3.2 Independent variables

In an effort to identify characteristics associated with the success in the MFP program that are specific to Whites and Blacks, various measures were included. Participants self-reported primary ethnic group as Black/African American, Non-Minority (White, non-Hispanic), White-Hispanic, American Indian/Native Alaskan, and other. For this study we dichotomized by race focusing only on Black and White participants. Black participants included those who self-identified as Black/African American and White participants included those who self-identified as Non-Minority (White, non-Hispanic) and White-Hispanic. There were no indications that anyone self-identified as Black-Hispanic. As previously stated, those identifying as American Indian/Native Alaskan and others were removed from the sample.

In addition to race, other participant demographics, services utilized, and costs of services were assessed. Participants were asked to self-report age (i.e., in years), gender (i.e., male or female), living arrangement (i.e., living alone or living with others), marital status (i.e., married or single, divorced, legally separated, widowed), which was later dichotomized as “married” or “not married”. In addition, participants self-report Medicare eligibility (yes or no) and receipt of Supplemental Security Income (yes or no). Documentation confirming Medicare eligibility and

Supplemental Security Income (SSI) was collected by administrative staff. Participants also reported annual individual income.

The MFP program data also includes the different services rendered to their participants. There were 17 services, which were aggregated into seven categories (i.e., caregiver support, financial support, social support, transportation support, equipment support, house support and home modification support) based on overlapping similarities. Table 1 includes details on each service and the categories in which each service was assigned.

The cost of each service was documented through administrative procedures. For the focus of this study, the cost of the services used for each participant was summed to provide information on the total amount spent on home and community-based services while enrolled in MFP. Therefore, the total cost includes the total cost of services used for each participant individually. Notably, there was a cost cap for each service. The cost cap varies depending on the service type provided to the participants. The total services count included the sum of services out of the 17 services used by each participant.

Table 1. Services provided by the MFP program

Service Groups	Services	Service Details
Caregiver Support (CGRSUP)	Caregiver outreach and education (COE)	A service that provides outreach, community-based information and educational resources (e.g., adult day services, direct care, communication skills, self-care for the caregiver, self-management and coping skills) for individuals caring for MFP participants. Caregivers must be informal caregivers (i.e., non-paid) who provide continual care and/or companionship for one in the program. The COE evaluates reasons for caregiver burden and works with the caregiver to develop an action plan focused on reducing stress.
	Skilled out-of-home respite (SOR)	Provides up to 14 days of respite for an MFP participant's caregiver. The respite must take place at a qualified nursing facility or qualified community respite provider.
Financial Support (FINSUP)	Moving expenses (MVE)	Provides support to move from an institution to a qualified residence (e.g., moving truck, moving company). This service is traditionally only offered as a onetime option. However, it can be used to move necessary items from storage, a furniture store, or from/to the home of a family member or friend.
	Security deposit (SCD)	Provides assistance in paying the security deposit for the qualified residence. This can include first and last month rent deposits as well as application fees for qualified residence.
	Utility deposit (UTD)	Provides assistance with initial activation deposits (e.g., electricity, telephone, water, and gas) associated with moving into a qualified residence. In few cases, this service is used to assist with paying a past due bill.
	Transition support (TSS)	Provides unique services that may be necessary to transition out of the institution into a qualified residence (e.g., roommate matching services, acquiring documentation, etc.).
Social Support (SOCSUP)	Community ombudsman (COB)	Provides in-person interaction between a certified community ombudsman and MFP Participant. During this in-person interaction the community ombudsman will assess the participant's health and overall well-being. In addition, the community ombudsman serves as an advocate for the MFP participant and listens as well as responds to any complaints

		one may have about the services provided. It is important to note that three in-person meetings with a community ombudsman is required.
	Peer support (PES)	Provides in-person visits before and during the transition process. The visit is from a certified peer supporter who will discuss the transition process, discuss one's experience, and assist with community networking. The peer supporter typically is someone who has had a similar experience as the MFP participant and can relate not only to the transition but also to the disability.
	Life-skills coaching (LSC)	Provides resources for enhancing skills that would foster one's ability to maintain living at home/in a qualified residence. MFP participants who receive LSC must complete a needs assessment, complete a 30-hour skill development training, participate in assigned activities to enhance skill development, and evaluate the impact of the LSC training. LSC is led by a trained instructor and follows a specific criterion.
Transportation Support (TRANSUP)	Vehicle adaptation (VAD)	Provides adaptations to the MFP participant's or family member's vehicle that will enhance mobility and quality of life (e.g., carry racks, special seats, ramps, lifts). This is to promote safety and independence.
	Transportation (TRN)	Provides support in gaining access to needed community services. This service is not a replacement for Medicaid non-emergency transportation or emergency medical transportation.
Equipment Support (EQSSUP)	Equipment, vision, dental and hearing (EQS)	Provides services and equipment needed for vision, dental and hearing that are not covered by Medicaid. The equipment purchased must be priced at what is considered reasonable and customary and must increase the participant's ability to remain in the home and live more independently.
	Specialized medical supplies (SMS)	Provides assistance with medical supplies needed to remain in the home and improve independence (e.g., nutritional supplements, incontinence supplies, diabetic supplies, prescription medication not covered by Medicaid, infection control supplies). Specialized medical supplies are identified in the initial transition plan.
House Support (HSESUP)	Household goods and services (HGS)	Provide assistance with purchasing basic household goods (e.g., toiletries, groceries,

		cleaning supplies, plates, bedding). This service is focused on helping the individual set up a qualified residence with the necessities of life. Participant's needs for this service are discussed during the transitional planning period. Participants are asked to complete a needs assessment that would include the availability of items from family and friends.
	Household furniture (HHF)	Provides assistance with purchasing quality furniture for everyday living (e.g., bed, dinner table). Similar to HGS this service is also focused on helping the individual set up a qualified residence with the necessities of life, and need is captured during the transitional planning period.
Home modification support (MODSUP)	Environmental modification (EMD)	Provides assistance to those in need of home modifications such as ramps, grab-bars, widening doorways, bathroom and kitchen modifications, and any other adaptations that will improve opportunities to remain in the home safely. It is important to note that participants are prohibited from using this service to make cosmetic changes and repair existing issues with the home.
	Home inspection (HIS)	Provides support for the home inspection that is required before and after home modifications. The report provides recommendations on cost-effective environmental modifications.
SUM	Total Services count	The total number of services utilized by each the participant.

Source: Rebecca M. Amin. Thesis project. Copyright 2016. Georgia State University

3.3 Dependent Variable

The MFP participants' status were reported as: being active (i.e., still within the 365 day program period), completed enrollment (i.e., have successfully completed the 365 days), deceased (while still at home), Medicaid ineligible (i.e., no longer qualifies for Medicaid benefits), moved out of state (i.e., due to their move they can no longer be followed by the state of Georgia but may continue services in the new state), no longer wish to participate, non-qualified residence (i.e., the residence does not meet the requirement of a home, apartment or

group setting), re-institutionalized (i.e., transitioned back to the nursing home or another long-term care institution) and suspended (i.e., placed the service on hold to continue later). These categories were later dichotomized into “success” versus “no success” in meeting the goals of MFP. “Success” includes those who were active, completed the program and deceased while still in the home; “no success” includes participants who became Medicaid ineligible, no longer wished to participate, had a nonqualified residence, re-institutionalized, or suspended. Those who moved out of state were not included in the analysis. The dichotomy was determined based on whether the participant did or did not meet the goal of the program. Goals were considered to be met if participants enrolled in MFP did not return to an institution. Therefore, participants deemed active were categorized as successful due to the fact that at the time of data collection the participant was living in a qualified residence and outside of an institution. Moreover, those who had completed the program were categorized as successful, as these participants remained outside of an institution throughout their enrollment in the program and upon completion were still living in a qualified residence. Individuals who were classified as deceased were still living in a qualified residence at the time of death; therefore, based on the premise of aging in place, dying while still living in the home (i.e., outside of an institution) is considered successful. Those in the no success group either did not qualify for the program, suspended their enrollment, or no longer had interest in continuing as an MFP participant, so did not fulfil the goals of the program.

3.4 Analytic strategy

3.4.1 Descriptive analysis

First, SPSS 22, was utilized for exploratory data analyses to identify outliers and missing data. To address research question one, frequencies were examined to assess demographics,

percentages and total costs of services utilized, as well as total number of services used. Next, inferential statistics were conducted to determine between group differences (i.e., Black and White) and associations between demographic variables, services provided, total services count and total services costs and success in the MFP program. Specifically, independent samples t-tests for continuous variables and chi-square analyses for nominal variables were used to examine differences first between Blacks and Whites. Then bivariate correlations were conducted to look at the association between each independent variable and success for the total sample size, Whites only, and Blacks only.

3.4.2 Logistic regression model

Logistic regressions were conducted using SPSS 22 in order to address the second research question. We used a binary logistic regression model to determine variables associated with MFP success in meeting the goals of aging in place. Logistic regression analysis was selected as there were no distributional assumptions with this analysis. In addition, logistic regression was appropriate for research question two in that, the dependent variable was dichotomous and the outcomes were mutually exclusive. Therefore, one was either in the success or the no success group. No participant was represented in both groups at any time. In order to determine the variables or factors that were associated in the success in the MFP program, binary logistic regressions were conducted between each variable and success. That is, this allowed for an understanding of the impact of the independent variables on the likelihood of increasing or decreasing the odds of MFP program success.

4 RESULTS

4.1 Descriptive analysis

Descriptive analyses are presented in Table 2. The table provides an overview of the MFP participants' demographics, services utilized, total services counts, total services cost and success. On the whole, Blacks and Whites were similar with respect to all demographic variables; no statistical differences were found.

As previously indicated, services provided by the MFP program to its participants are categorized as: caregiver support; financial support; social support; transportation support; equipment support; house support; and home modification support. Most of the MFP participants received more than one service. The minimum number of services received was 1 and the maximum was 13 services. On average, participants received seven services. Results indicated that the most utilized services were house support and equipment support with approximately 98% and 94% (respectively). The least utilized service was caregiver support. Only approximately 5% of the participants accessed the caregiver support services (Table 2). The total cost of services provided to the participants ranged from \$400.00 to \$128,960.00 with the mean of \$14,779.56. Results indicate that 84% of the total participants were successful in the program.

Table 2. Participant sociodemographic, services and outcome characteristics

Independent Variable	Total Group (N=173)	White Participants (N=92)	Black Participants (N=81)	x ² or t	p value
	M (SD)/%	M (SD)/%	M (SD)/%		
Demographics					
Age (years)	62.8 (13.9)	61.2 (11.3)	64.1 (16.4)	1.110	.269
Gender (% female)	51.4%	50.0%	53.1%	.164	.685
Living Arrangement (% lives alone)	10.4%	12.0%	8.6%	.513	.476
Marital Status (% Married)	13.3%	13.0%	13.6%	.011	.917
Medicare Eligibility (% Eligible)	62.4%	65.2%	59.3%	.652	.420
Supplemental Security Income (% Beneficiary)	70.5%	71.7%	69.1%	.140	.708
Income (\$)	915.78 (340.4)	915.34 (362.0)	916.27 (316.3)	.018	.986
MFP Program Services					
Caregiver Support	4.6%	4.3%	4.9%	.034	.854
Financial Support	80.9%	83.7%	77.8%	.976	.323
Social Support	69.9%	75.0%	64.2%	2.390	.122
Transportation Support	52.6%	52.2%	53.1%	.014	.905
Equipment Support	93.6%	91.3%	96.3%	1.881	.170
House Support	97.7%	96.7%	98.8%	.826	.363
Home Modification Support	37.6%	38.0%	37.0%	.019	.892
Total Services Count (# SUM)	7.31(2.2)	7.5 (2.1)	7.0 (2.4)	-1.549	.123
Total Services Costs (\$)	14,779.56 (18791.6)	15,467.14 (17245.2)	13,998.60 (20488.3)	-.512	.609
Dependent Variable					
Success (% Yes)	83.8%	80.4%	87.7%	1.66	.198

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4.1.1 Factors associated with success

To determine if there were statistically significant association between the independent variables (i.e., demographic variables and MFP program services variables) and success, Pearson correlations 2-tailed analyses were conducted for the total sample, and then for Whites only and Blacks only. Due to the exploratory nature of the study, a p value $\leq .10$ was considered significant. The results are presented in Table 3. The results of the total sample show significant correlations between success and age ($r(171) = -.16, p = .039$); an increase in age was associated with a decrease in success. Using Cohen's guidelines, there is a medium relationship between age and success among Blacks and Whites collectively (Cohen, 1988). There was also a statistically significant association between success and social support ($r(171) = .16, p = .039$); an increase in social support was positively associated with success. There was a medium relationship between social support and success. A significant positive association was also found between total services used and success ($r(171) = .22, p = .004$). Therefore, an increase in the total number of services used by participants was associated with an increase in success. There was a large association between total services used and success. In addition, total services costs was significantly associated with success ($r(171) = .13, p = .092$); an increase in total costs of services utilized by participants, were associated with an increase in success. There was a small association between total costs of services and success.

Pearson correlations 2-tailed were conducted between the independent variables and the outcome variable "success" for Whites (Table 3). Findings show a significant positive association between success and Supplemental Security Income ($r(171) = .24, p = .02$) and success. This indicates that an increase in Supplemental Security Income is associated with an increase in success. There was a medium association between Supplemental Security Income and

success. There were also statistically significant association between success and social support ($r(171) = .22, p = .034$), so an increase in social support was associated with an increase in success. There was a medium association between social support and success. There were statistically significant association between success and transportation support ($r(171) = .19, p = .076$). There was a small positive association between transportation and success. There was also a statistical significant association between success and home modification support ($r(171) = .22, p = .038$). This was a positive correlation, meaning an increase in home modification support was associated with success. This association between success and home modification was small. There were also statistically significant association between total services count ($r(171) = .33, p = .001$) and success; and between success and total services costs ($r(171) = .20, p = .058$), which indicates that an increase in total services count was associated with an increase in success; and an increase in total services costs was associated with an increase in success. The association between success and total services count was large and the association between success and total services costs was small.

Pearson correlations 2-tailed analyses were also conducted between the independent variables and the outcome variable “success” for Blacks (Table 3). There were statistically significant associations between success and age ($r(171) = -.28, p = .012$). This shows a negative correlation between age and success, which means increased age was associated with decreased success. This association between success and age was medium. Statistically significant association was also found between success and house support ($r(171) = .30, p = .007$). An increase in house support was associated with success. This association between success and house support was large. No significant associations were found between financial support and home modification support and success.

Table 3. Bivariate correlation independent variables with success

Independent Variable	Total Group	Whites	Blacks
	N=173	N=92	N=81
	r	r	r
Demographics			
Age (years)	-.157**	-.062	-.279**
Gender (% female)	-.081	-.055	-.127
Race (Whites)	-.098		
Living Arrangement (% lives alone)	-.056	-.156	.115
Marital Status (% Married)	.080	.110	.039
Medicare Eligibility (% Eligible)	.017	.100	-.158
Supplemental Security Income (% Beneficiary)	.060	.238**	-.170
Income	.015	.130	-.167
MFP Program Services			
Caregiver Support	.022	-.029	.086
Financial Support	.026	.079	-.020
Social Support	.157**	.221**	.111
Transportation Support	.117	.186*	.023
Equipment Support	.014	.042	-.074
House Support	.037	.091	.298***
Home Modification Support	.082	.217	-.101
Total Services Count (#) SUM	.221***	.335*****	.116
Total Services Costs	.129*	.199*	.062

*p ≤ .10; **p ≤ .05; ***p ≤ .01; ****p ≤ .001

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4.2 Logistic regression model

The regression model in this study examines the impact of home modification and other home and community-based services on the ability to age in place. Binary logistic regression was used to determine variables that influence the likelihood of experiencing success from participating in the MFP program. Table 4 provides results of the binary logistic regression analyses. Due to the exploratory nature of the study, a p value $\leq .10$ was considered significant. Being Black is associated with higher odds of MFP success. Specifically, the odds of being successful after participating in MFP is .33 times lower for Whites than for Blacks (OR = .33, 95% CI = .12 – .90, $p < .05$). Financial support was also significantly associated with success in the model. As financial support increases the probability of falling into the success group decreases. Interestingly, the odds of being successful in MFP is .18 times lower for participants who received financial support services (OR = .18, CI = .04 – .94, $p < .05$). Statistically significant results were also found in the relationship between the total services used and success. The odds of being successful in MFP was 1.6 times higher for any additional service utilized by the participants. That is the likelihood of success in MFP increased with the use of more services (OR = 1.6, CI = 1.05 – 2.57, $p < .05$).

Table 4. Factors associated with success

	B	SE	Odds Ratio	p value
Age	-.029	.019	.971	.115
Gender	-.238	.514	.788	.643
Race	-1.114	.514	.328	.030
Living Arrangement (lives alone)	-.078	.763	.925	.919
Marital Status (Married)	1.057	.941	2.878	.261
Medicare Eligibility	-.031	.529	.969	.953
Supplemental Security Income	.361	.519	1.435	.486
Income	.000	.001	1.000	.944
Caregiver Support	-.206	1.365	.814	.880
Financial Support	-1.696	.836	.183	.043
Social Support	.312	.545	1.366	.567
Transportation Support	.017	.549	1.017	.975
Equipment Support	-1.067	1.027	.344	.299
House Support	-.709	1.516	.492	.640
Home Modification Support	-.419	.568	.658	.461
Total Services Count	.496	.229	1.641	.030
Total Services Cost	.000	.000	1.000	.589

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5 DISCUSSION AND CONCLUSION

In this study, we examine the relationship between home modification and other home and community-based services and aging in place. Using the 2015 MFP program state level administrative data, we seek to understand more about the individuals that use such services by exploring the demographic characteristics, services utilized, and total costs of these services. We also seek to explain the impact of these services on the ability of older Blacks and Whites in Georgia to age in place. To our knowledge this study is among the first to evaluate the MFP program services in this way. In this section, we discuss the hypotheses and results in greater detail as well as implications for our research findings. We further discuss the contribution of the study, study limitations, and future directions.

5.1 Research hypothesis and findings

Our results did not show considerable support for our first hypothesis, which stated that there would be significant race differences in utilization of home and community-based services with Blacks utilizing more services than Whites. No significant differences were found in the utilization of services between White and Black participants. The services were used almost at equal levels by both racial groups. However, on average, Blacks utilized relatively fewer number of services compared to White participants. The similarities in service use was particularly interesting. Results were contrary to studies that suggests Blacks would require more services than Whites due to documented health challenges (e.g., Blacks on average experience higher levels of physical and functional limitations) and socioeconomic status (i.e., Blacks being overrepresented in a lower SES group compared to Whites) (Bowman, 2009; Cannuscio et al., 2003; McCallion, 2014). However, in our study, race differences may not have emerged due to extraneous factors not accounted for in our limited dataset. The MFP administrative data did not

provide any information on number of chronic conditions, disability status, or overall health status. Health status related variables would have allowed for additional understanding of the overall health of both Black and White participants as well as provide indicators for services needed. Notably, the participants were all transitioning out of an institution and into a qualified community residence. Having additional information as to what led to the institution placement may also have provided a greater level of understanding of the lack of differences in utilization patterns. It may be that the program eligibility forces between group similarities that may not be seen in a less specifically defined sample. Previous research describing the health and healthcare disparities between Blacks and White older adults may be more generalizable to all community-dwelling older adults. Additional research should be conducted to further examine utilization patterns in this subpopulation to determine if findings would indeed be replicated.

There was considerable support for our second hypothesis, which stated that factors significantly correlated with success among Whites would be different from factors significantly correlated with success among Blacks. The factors that were significantly correlated with success for Whites were Supplemental Security Income, social support, transportation support, home modification support, total services count, and total services costs. For Blacks, the factors associated with success were age and house support. It is worth noting that factors associated with success for the total sample were age, social support, total services count, and total services costs. Three of these four factors were also significant for Whites only, while only one was significant for Blacks. It is not clear why factors such as Supplemental Security Income was significant for Whites and not for Blacks since Black participants would have been expected to have lower income and thus required or received Supplemental Security Income or additional sources of income necessary to age in place. There was also no obvious explanation for the

outcome of the factor of social support and success since the literature has emphasized the importance of social capital to both races (Cannuscio et al., 2003; Greenfield, 2014) and more importantly among Blacks (Johnson, 1999; Taylor et al., 2014). However, the types of social support services provided by the program may have been services that participants were already receiving through their fictive and non-fictive familial ties or were services not those traditionally needed by Blacks ultimately yielding no additional impact on aging in place.

There was a correlation between age and success for Blacks, which was unexpected. Although the literature has proposed that Blacks delay in seeking services (Mehta et al., 2014; Taylor et al., 2014), it has not been necessarily about the age at which help is sought, but about the state of the disease. However, it is plausible that the delay in help seeking can also mean advanced age at which help is sought, which could explain the negative association between age and success. With increased age, individuals' physical and functional conditions might make success difficult and necessitate the utilization of more and or specialized services. This is also consistent with many studies that show that due to age related changes in older adults, there is the need for services that will allow older adults to adapt to their current physical and functional situations. This adaptation will enable them to remain in their homes (Cannuscio et al., 2003; Lehning et al., 2015; Vasunilashorn et al., 2012). These results also support our earlier notions concerning the desire of older adults to age in place (Butcher & Breheny, 2016; McGill, 2014; Wiles et al., 2011).

The correlation between success and house support among Blacks is unexpected though understandable as these services were the most utilized by both Black and White participants collectively. It is plausible that services of this type are highly important for those transitioning back to their homes, since they may have been replacing things they had before

institutionalization. Notably, house support might have been more important for Blacks than for Whites due to the cost of these services (Lehning, 2011) and overall socioeconomic differences. Although the Blacks and Whites may have been similar in individual SES, it may be that Blacks were less likely to have family or other individuals that had the means of providing assistance with purchasing basic household goods (e.g., toiletries, groceries, cleaning supplies, plates, bedding); therefore, having a program that would provide support in this way became imperative in their ability to transition back to and remain in the home.

Our third hypothesis stated that race would have a significant impact on success. This hypothesis was supported as our findings indicated that being Black increases the likelihood of experiencing success in the MFP program. Due to the cumulative disadvantages Blacks have faced in their life course, many of them have limited financial resources and have experienced limited availability and accessibility to quality healthcare. However, Whites are more likely to have experienced cumulative advantage (Bask & Bask, 2015; Cannuscio et al., 2003; Mehta et al., 2014). Experiencing a lifetime of disadvantage, and lack of access to needed support and services may increase one's need for support in later life especially when faced with health and healthcare challenges. Therefore, a program like MFP may be more meaningful and may have a greater impact for those who have the greatest need. Ultimately, this potential greater appreciation for the support and services may result in greater success. If Blacks were more vulnerable than Whites in this subpopulation it means that assistance of this kind may have made more of a difference to them. Whites might not have had the same life course experiences irrespective of them meeting the same criteria for participation in the program at this point in time.

Another possible reason for finding that being Black is associated with higher odds of MFP success could be that Blacks are finding programs of this type to be increasingly important since their traditional support systems are diminishing, as caregiving is shifting from the family to community and public sectors (McCallion, 2014; McGill, 2014; Ott, 2013; Uhlenberg, 2013). Families seem to be relinquishing most of their traditional roles of caregiving to the elderly and ailing family members. This is more prevalent among Blacks due to the changing demographics and economic hardships (Johnson, 2009; Mbanaso et al., 2006; McCallion, 2014). Changes of this type for Black families may start to result in a shrinking of traditionally large family ties and a reduction in the supportive kinship networks that were once a widely used resource (Johnson, C. L. 1999; Johnson, M. L. 2009; Mbanaso et al., 2006). Therefore, MFP could potentially fill a family caregiving gap that is unique to Black families resulting in greater success. Although the aforementioned explanations are highly plausible, it is imperative that we do not overgeneralize our study findings or ignore that race was only significant in our logistic regression analysis. Additional analyses may have yielded additional details such as what specific services may be driving the race differences found in our study. Future research is warranted.

Hypothesis four, which stated that home and community-based services (i.e., caregiver support, financial support, social support, transportation support, equipment support, house support, and home modification support) would increase the likelihood of success for MFP participants, was partially supported by our results. Surprisingly, having received financial support decreased the likelihood of success in the program. Financial services covered moving expenses, security deposit, utility deposit and transition support (acquiring documentation and roommate services). These services directly involved the process of transitioning from the institution back to the home and community. Due to the high costs of maintaining homes,

previous research has emphasized the importance of financial support for aging in place (Davey, 2006; Lehning, 2011; Padilla-Frausto et al., 2014). Similar to previous research, financial support emerged as a significant factor that contributed to aging in place; however, the inverse association with MFP program success was unexpected. It is plausible that those who received financial services, which oftentimes was a one-time opportunity, did not allow participants to gain a skill, build self-efficacy, or feel confident that they could maintain beyond this finite level of support. Receiving financial services that are not ongoing may be more of an enabler in a person's life who is already experiencing challenges or adversity as a result of their SES. For example, receiving support to have utilities activated (i.e., a utility deposit) without providing ongoing supplemental support to make monthly payments may present a challenge for the MFP program participant. This may be particularly true if utilities such as electricity are in greater use to maintain operation of medical equipment. Therefore, the initial financial support may be beneficial in transitioning back to the home, but ultimately ongoing financial support in this area may be the type of support that would yield a positive impact among this economically disadvantaged population. However, the participants were not provided opportunities or options on how to continue paying for these services.

In addition to financial support, the total number services emerged as being significantly associated with success in the MFP program. For every unit increase in total services used the likelihood of the MFP participant aging in place increased. Total services count being significantly associated with success may be a result of the need for varying types of services. For example, participants might have needed the financial support because it enabled them to make the move back home, but would also need equipment support (equipment, vision, dental and hearing) because it enabled them to live independently. Therefore, it was necessary to have a

combination of services and as many services as they thought would be beneficial for them as they transition from the nursing homes to their homes. This is in line with studies that propose that there are many factors that determine one's willingness or ability to age in place and that individuals need a variety of services at home and community in order to maintain independence and improve well-being (Lehning et al., 2015; Ott, 2013; Poterb, 2014).

The unexpected result was that the home modification support, which has been highlighted in the previous research as a major determinant in aging in place, did not prove to be significantly associated with success among the MFP participants. Several reasons could be advanced for this outcome. First, this service was among the least utilized by the program participants. The following question can be posed: if the MFP program is one of the few Medicaid waiver programs in Georgia providing these services (CCSP, 2014; DAS, 2014), why did the services seem underutilized? It may be that the participants for various reasons did not rent or own the qualified residence in which they resided, therefore, not being in a position to modify their environment. A large proportion of the sample reported not being married but also not living alone meaning that the participants could have been living with family members, friends, or sometimes rotating among family and friends (Mbanaso et al., 2006; McCallion, 2014). Moreover, if one is rotating between family and friends, the limited time at one particular place of residence may be a barrier to implementing environmental changes. In addition, the MFP participants in this study, were all Medicaid eligible, almost 70% of them benefited from Supplemental Security Income, and generally had low incomes (average of \$915 per month). This can also be an indication that these participants could not afford to own homes and so would not have needed the home modification services.

Other factors could also be considered as modifying the environment even though they might be simple and temporal such as when furniture is moved around the house or new furniture is bought to assist an individual with comfort at home (Mathieson et al., 2002). Based on this aspect of modifying the environment, some of the house support services utilized by the MFP program participants could also be considered as home modification. Therefore, although home modification was not seen to have a significant impact on success with the MFP participants, many reasons could have accounted for this outcome, which does not undermine the importance of home modification in aging in place.

The results from the analyses show that most of the participants in the program were successful, that is, these participants were still active in the program, had completed the program, or deceased while still at home. Therefore, the MFP program was successful in meeting their goal of transitioning their participants from the nursing homes and other long-term institutions back to their homes and communities. Although a limited number of variables were associated with success in our study, these findings highlight the importance of these factors for aging in place among an economically disadvantaged group. This study also focused on individuals who had met the same criteria for participation in a program, resulting in a sample with similar demographic characteristics including income levels as opposed to studies that have had participants with more diverse income levels (Lehning, 2011; Mathieson et al., 2002; Ott, 2013). Moreover, this study benefited from the data from multi-age participants as opposed to studies that have been based on older adults only (Davey, 2006; Gitlin et al., 2001; Lehning et al., 2015). This might have accounted for the differences between our study and previous research.

As previously stated, many suggest that the classic characteristics of successful aging outlined by Rowe & Kahn (1987, 1998) enables one to age in place (Greenfield, 2014; Lamb,

2014; Lehning et al, 2015). Conceptually, this study did not fully corroborate the classic principles of successful aging. Considering the qualifications of MFP, it is evident that the sample included individuals who were not free of disease and/or physical disabilities. However, with the support of the MFP these participants were able to transition back into their home and were provided the opportunity to age in place. Although this subpopulation was a vulnerable population in many ways, being able to age in place, which has been shown to enhance quality of life, may have resulted in a perception of successful aging among the participants. Our study supports the argument that there is a need to rethink how successful aging is conceptualized. As for many older adults, it may be something as simple as being in one's home (i.e., a familiar environment) and in one's community with familiar networks that ultimately equates to aging successfully. Therefore, programs such as MFP play a significant role in providing this type of success for an aging population with compromised physical and/or mental health. Programs like MFP provide the opportunity to reduce the successful aging disparities.

Explaining the person environment fit theory in this study is challenging because the home modification service, which drives this theory was not significant in predicting aging in place in this study. However, based on the definition of aging in place (i.e., a relationship between an aging individual and their environment, which is characterized by changes in both the person and environment over time, and the ability to remain in that environment), we can say the use of the other home and community-based services in addition to home modification services was partially in line with the person environment fit theory. For example, the use of equipment support (i.e. equipment, vision, dental and hearing), which was the utilized by 94% of the participants and transportation support (i.e. vehicle adaptation and transportation) utilized by

53% of the participants could be considered as individuals adapting to the changes in themselves and the environment.

In conclusion, our findings highlight that among populations of varying demographic characteristics, some services were more significant than others in enabling aging in place. However, our findings also note that the utilization of many and varying services are vital to the ability to age in place. This study also met its goal of examining Black/White differentials in service use. Therefore, based on the outcomes of this study, the measures and analyses used in the study could also be applicable to other programs that provide similar services to populations with similar demographic characteristics.

5.2 Study limitations

This study had some limitations worth noting, which has limited the scope of the study. The data used for the study was the MFP program administrative data, which had a relatively small sample size. The study would also have benefited from variables such as functional and physical abilities, education, and home ownership, which were not available. Variables of this type would have provided a better understanding of service utilization. Also, the study is a cross-sectional study. Therefore our analyses are based on the data given to us at a specific point in time. Accessing data across multiple time periods may have enhanced the study. We would have been able to follow each participant through the 365 days of participation in the program and also acquire data from all the participants post program completion. A longitudinal study would have also enabled us to see whether participants were re-institutionalized or remained in the home until death. Having information on prior life experiences would have also been useful in understanding how life course experiences may have influenced study outcomes.

Many of the demographic characteristics were self-reported and may have impacted the accuracy of the data. However, previous research has consistently used self-reported data and found it to be valid (Davy, 2006; McMullen & Luborsky, 2006). Furthermore, our regrouping of the services for analysis may have reduced the significance of some of the results because different factors might have produced alternative outcomes if they were regrouped differently. However, with our relatively small sample and numerous services, some of them with overlapping themes, grouping the services reduced errors that may have occurred.

Due to the limitations of time and resources, we were unable to employ other research designs. A mixed-methods approach would have allowed for in-depth analysis of our independent and dependent variables. The services necessary for success in the MFP program might have been better understood if qualitative data were collected. Qualitative data collected from the MFP participants would have allowed the opportunity to assess perceptions (e.g., services deemed important and necessary) of home modification use along with other home and community-based services.

5.3 Future directions

Although exploratory, our study provides a foundation for future research focused on the impact of home and community based services on aging in place among low-income Blacks and Whites. As previously stated, this research could be advanced with additional research methodologies that would enhance the data on individuals in programs like MFP. Therefore, future research should augment the MFP administrative data with in-depth interviews with MFP participants and graduates of the program. Specifically, data from in-depth interviews could highlight reasons for utilizing certain services. Also, a study designed in this manner could provide information that would help explain need or lack of need for home modification to age in

place. Person-environment fit may have been relevant among the sample but not captured within our study's existing methodology. Future research is warranted.

As a whole, this thesis underscores the importance of home modification and other home and community-based services in aging in place. Although, the impact of home modification and aging in place has been well studied, very little has been done on how home modification and other home and community-based services will promote aging in place particularly among a Medicaid eligible population. It is therefore imperative that more research is conducted on identifying services that would assist this population as they age and even those with physical and functional limitations to adapt to their homes and communities. Therefore, future studies should continue to examine the importance of home modifications and other home and community-based services especially among diverse populations.

Comparative studies should be conducted on the characteristics of the participants of the MFP program and those of the other programs with similar goals. It would be interesting to understand why one chooses one program over the other and which of the programs better promotes aging in place. Additional knowledge on these and other issues would assist policy makers in designing and funding programs.

In order for programs to be more effective, we cannot ignore the diversity of the population and continue instituting "one size fits all" programs. The MFP program should continue providing a variety of services to the participants. However, more has to be done in tailoring the services to the participants based on their demographic specificity. Services such as financial support in this program, should be sustainable. Participants could also be connected to resources or organizations that could bridge the gap between their personal resources and resources available through MFP.

In general, policies should be targeted at reducing future need for assistance and individuals' dependence on the public sector by improving life course experiences earlier in life. This could be done through quality education and training, and optimal healthcare services. This ultimately would lead to a more viable older population in the future. Also, more has to be done for those individuals who have an income above the Medicaid eligibility requirement but an income too low to meet their health and healthcare needs. Programs targeting those approaching Medicaid eligibility may be necessary. While the needed resources may be substantially different from those who are Medicaid eligible, support that could prevent a medical crisis or the need to transition to a nursing home or similar facility would result in cost savings and greater quality of life. Policy makers and politicians should refrain from cutting expenditures for needed programs similar to MFP. It is important that the cost savings of such programs are not ignored and vulnerable populations in need of quality services are not overlooked. Finally, with the increase in older populations and individuals with disabilities, the shift in caregiving from family to communities and the public sector, and the need for cost savings for healthcare and caregiving, there is need for more policies aimed at providing more home and community-based services especially to the vulnerable and disadvantaged persons to enable them to age in place.

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