ABSTRACT

NURSING HOME USE EXPECTATIONS: THE INFLUENCE OF FAMILY STRUCTURE

by Jennifer Kate Lindabury

This study analyzes expected nursing home use, and particularly the ways in which family structure is related to expectations. Using data from the 2006 Health and Retirement Study, I use multiple regression analysis to examine how measures of family structure (including daughters and sons, household structure, proximity to family, and previous and current marital status) are related to perceived nursing home risk. Results show that being female, age, ADL limitations, and having long term care insurance are related to increased expectation of use, while subjective health, having a parent or child in the household, or having a daughter are related to decreased expectations of use. Although several factors are related to expectations of nursing home use in ways consistent with actual use, marital status, having living brothers and sisters, and having local family are not significantly related to expected nursing home use. Policy implications of the findings are discussed.
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by
Jennifer Kate Lindabury
Miami University
Oxford, Ohio
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Advisor _________________________
Jennifer Roebuck Bulanda
Reader _________________________
Robert Applebaum
Reader _________________________
Ronald E. Bulanda
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Examining the Ways Family Structure Is Related to Nursing Home Use Expectations

It is estimated by the U.S. government that this year alone, about nine million men and women over the age of 65 will need long term care. Further, by 2020, 12 million older Americans will need long term care (CMS, 2009). There is no doubt that long term care (LTC) is a huge issue facing Americans currently and in the future; with the average year in a nursing home costing over $70,000, the economic burden is enormous. However, more so than simply knowing what population is currently in a skilled nursing facility, it is important to know how individuals perceive their expected use of such LTC. Although little research exists that links expectations of nursing home use to outcomes, Holden et al. (1997, p. S240) find that “subjective expectations of nursing home use are quite close to known probabilities of lifetime use.” And, existing research on perceptions show that perceived risk can influence a variety of outcomes such as savings, policy utilization, and retirement decisions (Hubbard, Skinner, & Zeldes, 1995; Hurd, Smith, & Zissimopoulos, 2004)

In the 1960’s, researchers first began to look at the utilization of nursing homes by examining the probability of nursing home admission (Brody and Gummer, 1967). In the subsequent decades, studies began to concentrate on predictors of utilization, but these studies have produced inconsistent results (Luipold, 1998). Documenting and studying who is at the highest risk for nursing home admission is very useful for projecting demands on long term care in the future. This includes home health services, interventions that may prevent or delay nursing home admission, and alternatives such as Edenization, small houses, green houses and other non-institutional options. Research on predicting nursing home admittance also helps consumers and providers anticipate the future of institutional long term care. However, while the majority of previous studies focus on predictors of actual nursing home entry, far fewer examine individuals’ perceptions of whether they expect to need nursing home care. Because expectations of care precede actual use, and because they are important to savings behaviors and predict actual use, examining expected nursing home use is an area that needs more attention.

Most older adults who need some type of assistance will be cared for at home, with an estimated 70 percent having family and friends as their sole caregivers (CMS, 2009). Spouses often serve as a “first line” of caregiving, with children also serving as a significant source of care. However, family does not fulfill the long term care needs for all older adults. A study by the U.S. Department of Health and Human Services finds that people who reach age 65 will have a 40 percent chance of entering a nursing home at some point in time, and about 10 percent of the people who enter a nursing home will stay there five years or more (CMS, 2009). Again, though, previous research concentrates on how family structure influences actual use, not on how family structure may affect individuals’ perceived need of nursing home care. This project examines how family structure is related to expected nursing home use and uses data from the 2006 wave of the Health and Retirement Study, in which there is a section on long term care expectations as well as a section on family structure.

Background

Importance of Expectations

Expectations are important for several reasons. First, expecting a chance of needing nursing home care may cause someone to exhibit planning behavior, such as purchasing long term care insurance, moving to a CCRC, moving closer to a child, saving money for anticipated
long term care use, or other behavior that facilitates actual use. Previous research finds that perceptions can affect saving and planning (Hubbard, Skinner, & Zeldes, 1995), and that perceptions of risk of death affect retirement decisions and Social Security use (Hurd, Smith, & Zissimopoulos, 2004). Second, expectations are important because studies find they are linked to actual behavior. Research on expectation formation finds that individuals’ perceptions are based on rational expectations (Manski, 2004). Holden et al. (1997) found that subjective expectations of nursing home use are very comparable to known probabilities of lifetime use. This comparison of expectation to actualization is key. There is an entire body of work examining expectations and their correlation to actualization, some of which varies in findings. The Weinstein theory of unrealistic optimism indicates that while people do realize that untimely and unfortunate caregiving situations do arise, they are less likely to expect this to happen to them (Weinstein, 1980, 1987, 2003). Several other authors (Dunning, Heath and Suls, 2005) support the notion that, as a whole, people are unrealistically optimistic about their health and often perceive themselves as significantly less at risk than their counterparts. In an examination of a sample of older adults, Idler has concluded twice (1993 and 1996) that as a population, this age group rates their health more positively than researchers have expected when looking at their actual health and functional limitations. These studies suggest a potential gap between expectations and planning for the actual necessity of care in older age. When a family is making LTC plans or governments are creating policies based on expectations, they should keep in mind the optimistic nature of the data. These studies on unrealistic optimism suggest that the research done on nursing home use expectations should be seen as a low-end estimate of actual utilization rates.

A recent study, which acknowledges that expectations do vary greatly and are not normally distributed, found that 14% of respondents refused to answer the question on expected nursing home use, 51% estimated no chance of nursing home entry and only 4% perceived a 51% to 100% chance of entry (Akamigbo and Wolinsky, 2006). These expectations did rationally indicate their placement in the next five years (Akamigbo & Wolinsky, 2006). However, even though actual placement does differ by race, Akamigbo and Wolinsky (2006) found that there were no differences in expectations between races. Showing that though the expectations were rational for placement in the next five years there were factors that the respondents did not take into consideration, particularly factors that would ultimately impact their actual risk of nursing home placement, such as race and gender.

Holden, McBride, and Perozek (1997) examine expected nursing home use using the Health and Retirement Study, particularly focusing on gender, health, marital status and number of children. After analyzing the correlates of expectations of nursing home use, they also compare expectations to frequency of lifetime use of nursing homes in other studies. Results show that even though there was great uncertainty among respondents about their expected nursing home usage, the expectations were roughly consistent with the previously documented frequency of lifetime use. For example, nursing home expectations did differ for men and women and those differences were consistent with their probable determinants of actual future use. Notably, the relationship of family structure with expectations of nursing home use differs for men and women. Although number of children is important in the underlying process that shapes expectations for women, it was not as important to men. Instead, men appear to shape their expectations on the availability of a spouse. However,
Holden et al. (1997) use data from the 1992 HRS and a sample of only 733 individuals. My study builds on the Holden study by using data from the 2006 HRS, which represents a fourteen-year difference during which time family structure shifts such as the rise in cohabitation were taking place, a much larger sample size of over 9,000 respondents, and accounts for a broader range of family structure variables such as cohabitation and having a parent, child or grandchild in the household.

Theoretical Background on Expectations

Andersen’s (1968) behavioral model of families’ use of health services is still the most commonly-used conceptualization for any examination of the risks associated with nursing home placement (Akamigbo and Wolinsky, 2006). The model suggest that individuals’ use of health services is a function of their predisposition to use services, factors that can aid or impede utilization of services, and their general need for care (Andersen, 1968). Andersen (1968) claims that the model can both predict and explain health service utilization, and suggests that every characteristic that influences the decision to seek out health care can be classified into a predisposing, enabling, and/or illness characteristic of the individual. These three categories are indeed relevant and significant to the role of determining long term care use (Akamigbo and Wolinksy, 2006; Andersen, 1968). The application of Andersen’s three components of predisposing, enabling and need (illness) have been applied and it has been found that attitudes and beliefs (predisposing) play significant roles in determining long term care use by older adults (Akamigbo & Wolinksy, 2006).

Andersen’s model also accounts for several predisposing characteristics that make someone more likely to use health services, although the model conceptualizes these characteristics as not directly responsible for health services use. These factors include demographics variables, social structure variables, and health beliefs and attitudes about medical care, doctors, and nursing homes (Luipold, 1998). Demographic variables include age, sex, gender, marital status, and past illness, while social structural variables are depictions of status such as education and occupation.

Andersen’s (1968) model focuses on actual behavior, but it may also apply to expectations of use of health services. Robert Merton’s (1948) work provides a theoretical rationale for understanding the connection between expectations and actual behavior. Determining one’s long term care use is very much entwined with Robert Mertons’ work on the “self fulfilling prophecy,” in which he outlined the beginning of expectancy theory (Merton, 1948). Expectancy theory is an explanation of the ways in which external expectations serve as a stimulus to behaviors that cause the expectations to come true (Merton, 1948). Merton accounts for the fact that these expectations can be either correct or incorrect and still impact the behavior of an individual and thus, at times, the outcome as well. It is easy to see how the notions in expectancy theory are tied into expected nursing home use but there is another side to this debate. In the case of expectancy theory, a person who does not expect to use a nursing home could then be stimulated to create behaviors such as a healthier life style, purchasing of long term care insurance, or create a system of social and familial supports that they presume will negate the need for institutional care. However, these stimulated behaviors cannot change predisposing health conditions and with expectancy theory individuals may be so convinced that they will not need a nursing home that they will not financially plan for that very real possibility.
Family Structure Predictors of Long Term Care Use

There is a general consensus in the literature about what two variables influence institutional long term care (LTC) use the most: functional impairment (e.g., activities of daily living limitations) and availability and use of LTC “substitutes,” primarily family. Use of family as a long term care substitute is particularly pertinent into today’s demographic environment, with longer life expectancy, increasing numbers of older adults and decreasing fertility rates, meaning that relatively few children may be available to take care of multiple parents or parent-in-laws (Spillman and Pezzin, 2000), and as relationships with children or spouses may be impacted by marital status transitions, such as divorce, over the life course.

Several articles have examined the relationship between family structure and actual nursing home admittance, and find that being married and having at least one child or sibling decreases the chances of nursing home admittance (Freedman, 1996). Other research has provided an overview of ways in which family members have traditionally been relied on as the primary long term care resource, but concludes that to truly meet the future needs for long term care in this country, family care should be viewed as only one option of many (Montgomery, 1999). However, these studies use very limited measures of family structure. For example, while the 1992 wave of the HRS has been used in one previous study to examine family structure and long term care (Holden, McBride & Perozek, 1997), this study includes only two measures of family structure: total number of children (but not co-residential status) and marital status (measured only as currently married or not married).

Major Changes in Family Structure

There have been major changes in family formation in the past decades. Gone are the days when it was normative to give birth to seven children. This scenario represents the first demographic transition, in which a country transitions from high birth and death rates to low birth and death rates as a country develops from a pre-industrial to an industrialized economic system (Thompson, 2003). However, fertility and family structure patterns have now wrought a second demographic transition, which is evidenced by current U.S. household structure and union formation trends.

The Second Demographic Transition (SDT) can be described as a change in family structure. It is particularly marked by trends in which people get married later in life, there are rises in cohabitation, divorce and single living, and in which there is a postponement of child bearing and an overall rise in total childlessness (Lesthaeghe, 2010). There are now, more than ever, multiple models of familial living arrangements and the typical gender-based male-breadwinner model is being seen less and less. A “destandardization” of the life course is occurring, in which people increasingly move through the life course in different patterns; for example, childbearing increasingly precedes – or happens without – union formation (Lesthaeghe, 2010). Thus, the SDT is often marked by postponement of marriage and fertility for non-Hispanic whites, higher frequencies of cohabitation and same sex cohabitants, high divorce and grandparental households that are responsible for grandchildren (Lesthaeghe, 2010).

With these changes may come changing views on familial responsibility and opportunities for social supports. Issues of household structure will be changing as families are postponing child bearing years to a point where they may be simultaneously caring for parents,
children and in some cases even grandchildren at the same time (Spillman & Pezzin, 2000). With issues of increased divorce rates there will be both melding and separations of families. Some families create large social networks comprised of children and grandparents from previous marriages while other families may separate due to divorce. These trends — and particularly trends in fertility and marital status — may have implications for familial care for older adults.

**Demographic shifts in Fertility**

Like many developed countries, the United States is experiencing low fertility rates overall. Although above the replacement rate, the current total fertility rate of 2.12 is the lowest rate the United States had experienced since 1976 (Goldstein, 2006). In addition to these low fertility rates, life expectancy has risen, spurring population aging. Population aging is marked by growing proportions of older adults and a decrease in both the absolute number and proportions of young people (Hussein & Manthorpe, 2005).

In this scenario of population aging, there is not only an increase in the number of older people but also an increase in the number of very old. Such an increase is predicted to have substantial long term effects as the older population not only increases but will need support as disabilities and morbidities rise as well (Hussein & Manthorpe, 2005). In the United States alone, 34 million caregivers were providing unpaid care for friends and family at any given time during 2007 (AARP, 2009). It is important to consider the role of children in older adults’ expectations for nursing home care at a time when they may have comparatively fewer children than those from earlier time periods.

**Increased Diversity in Marital Status**

Marital status patterns are changing in all age groups, and older adults are no exception. The number of divorced adults age 65 and over increased from 1,772,000 in 1995 to 2,831,000 in 2004 (Ellis, 2008). This represents a 63% increase in the number of divorces during that time period. Divorce can put older adults at risk of living without a spouse, losing health insurance access, or losing access to financial means that will undoubtedly affect health and health care availability. Among those who are married, income and social support are higher, particularly for unemployed women, and levels of stress are lower (Ellis, 2008). Conversely, the lack of a marriage can be detrimental to income, social supports and overall health as a result. While these studies show that divorce is consequential for a variety of outcomes, it is not clear from previous research whether or how previous divorce might affect individuals’ expectations for nursing home care.

Not only are there rises in the number of divorces, but there are also increases in cohabitation and the number of never married older adults. In fact, more than 1 million older adults, or about 4% of the unmarried population, are cohabiting (Brown et al., 2006). Cohabitors’ are different than their married counterparts in that they are more likely to have higher household incomes and have full time employment. However female cohabitors are more likely to have no health insurance at all (Brown et al., 2006). Further, it is not clear whether cohabiting older adults expect the same type of long term care from their partner that a married adult might. In addition to cohabiting unions, there are also a large number of older adults living alone. Approximately one-third of people age 75 and above are living alone, meaning there is no one in the household to provide assistance if they were to need it (AARP, 2009). Especially for those without a spouse or partner in the household, proximity of family
and friends is important. These recent family patterns showing declining rates of marriage and increases in the number of older adults who are never-married, cohabiting, divorced, or remarried contributes to diversity in family structure beyond those in first marriages. The implications of this diversity for long term care expectations are unclear. Also, there are varying kinds of support such as practical assistance, care when sick, financial, emotional, informational and companionship needs that can be met by a variation of family and friends spread out amongst a social and familial network.

The ways in which the second demographic transition, including declining rates of marriage and diversity in marital status, could potentially impact long term care expectations are numerous. With married adults viewing their spouse as their primary caregiver, divorced and cohabitating individuals may be missing a primary source of non-institutional care. One of the few studies to examine how family structure influences expectations of nursing home use finds that number of children is important to women’s perceived need for nursing home care (Holden et al., 1997); declining fertility rates may mean fewer children to fulfill this role. Will people expect greater chances of needing formal caregiving services due to these family structure changes? It is important to examine how increasingly diverse family structures may influence individuals expected nursing home use.

**Sociodemographic Predictors of Long Term Care Use**

Previous research findings demonstrate the importance of controlling for factors such as race-ethnicity, gender, age, socioeconomic status (SES), and health, all of which appear to be associated with both familial support and long term care utilization. The demographic measures of gender, age and race are all categorized as predisposing characteristics in Andersen’s model because they suggest a likelihood that people will need health services (Andersen, 1968). In a study of 387 older adults, a number of expectations, patterns and predictors influenced long term care use (Lee, Netzer, & Coward, 1994). Lee, Netzer, and Coward (1994) found that those who were married had higher education, higher income and better health. This led to a lower expectation of receiving familial assistance whereas widowed parents, who had less education, income, and were in poorer health, expected more familial assistance. This study was only able to examine predictors of familial long term care expectations (and not expectations of institutional care) but the findings are valuable nonetheless. Issues of socioeconomic status (SES), family structure, education and health are important factors of both expectation and actualization of long term care use.

Gender plays out in several ways when it comes to long term care. On average, women generally outlive men and are more likely to survive until very old age, when the need for long term care increases (Akamigbo and Wolinsky, 2006). Also, caregiving responsibilities vary by gender. Montgomery (1999, p. 383) examines the ways in which LTC policies and practices are “fueled by gender,” with the assumption that women are and should be the primary party responsible for the care of impaired older adults (Montgomery, 1999). These assumptions are supported by statistical trends. It is estimated that the percentage of family or informal caregivers who are women range from 59% to 75% and that the average caregiver is a 46-year-old female who is both married and working outside the home (Family Caregiver Alliance, 2003).
Not only is the gender of the older adult important, but gender of the close family members is important as well. Research indicates that filial norms of support are stronger among daughters than among sons but only when that support is towards their mothers (Silverstein et al., 2006). Silverstein et al. (2006) found that the average amount of social support provided to mothers was consistently higher than that provided to fathers, about 50% higher in fact. Furthermore, children provided more support to mothers who became widowed and who remained unmarried. On the other hand, sons are more likely to assist with bureaucratic matters or provide financial resources instead of hands-on instrumental care (Freedman, 1996). Because of these gender differences in actual care provided, it is important to examine potential gender differences in expectations of care. In this study, the gender of the respondent will be taken into account as well as the number of daughters and sons a respondent has, and interaction terms between the respondent’s gender and the familial variables will also be examined.

One of the most robust findings in the literature is the link between health and long term care use. This is of primary importance due to a strong relationships between family and health status, and then between health status and actual nursing home placement (Freedman, 1996). More than four out of 10 people over the age of 65 has one or more sensory, physical, mobility, self-care, and/or cognitive disability (AARP, 2009), and older adults who experience impairments in activities of daily living, have cognition problems, and rate their health as fair or poor are significantly more likely to be admitted into a nursing home (Luipold, 1998). And, prior nursing home stays are significantly predictive of future nursing home admission (Luipold, 1998). When a person is at their healthiest, they may spend little time considering the prospect of being ill, living with a disability, or needing nursing home care. Therefore little or no planning may occur when a person is healthy and able to take care of themselves. Conversely, when a person’s health begins to fail the issue of long term care becomes much more salient. When health begins to fail, someone may reasonably adjust their expectations for potential need for nursing home care in accordance with their physical limitations. Indeed, existing research finds that those who are absolutely certain they will use a nursing home in the future have 2.3 long term disabilities conditions and 0.8 early mortality conditions as compared to those who feel they only have a 50-50 chance of entering a nursing home having 0.97 and 0.5, respectively (Holden et. al., 1997). This “need” level as Andersen refers to it in his Health Utilization Model, is assuming the presence of predisposing and enabling conditions where the individual must perceive illness or the probability of its occurrence for the use of health service (Andersen, 1968). This overall view of health can come from a multitude of things including disability days, symptoms an individual experiences, diagnoses, and a self-report of general health that will then feed into the way a respondent views their health and in turn their expected need for long term care (Luipold, 1998).

There are a number of sociodemographic factors that constitute predisposing factors for nursing home admission. Race is often considered a predisposing factor for nursing home care. Race and ethnicity fall under Andersen’s model in the predisposing categories under the subcategory of “social structure.” In the Andersen’s Health Utilization Model the category of social structure is a combination of factors that reflects an individual’s status in the community, ability to cope with problems, the ability to get resources to cope with those problems and how healthy/unhealthy the physical environment is (Andersen, 1968). However, a number of
studies find that Blacks have lower actual nursing home utilization than Whites (e.g., Headen, 1992; Akmigbo & Wolinsky, 2006). It is not completely clear why this is the case, although previous research suggests several possibilities. In a qualitative study, Bradley et al. (2002) found that Africans Americans perceived having poorer accesses to LTC information, stronger norms of familial caregiving, and more concerns about privacy loss and lack of self determination in LTC settings. Family structure mediates racial discrepancies in long term care use in both skilled nursing facilities and home health settings, with the greater availability of kin support among Blacks explaining their lower LTC utilization (Mui and Burnette, 1994; Cagney and Agree, 1999). Headen (1992) found that even after controlling for these factors Blacks’ nursing home use is consistently lower. These race differences also seem to be reflected in perceptions of risk; in an examination of expectations of nursing home use over the next five years, Akmigbo and Wolinksy (2006) found that both Black and white adults over the age of 70 had expectations of nursing home use that accurately reflected their individual risk profiles and later were tied to actual placement status.

Education and occupation are considered predisposing factors, as they reflect a person’s status in society (Andersen, 1968). Other indicators of socioeconomic status (SES), such as income or wealth, are considered either predisposing or enabling factors for health care utilization in Andersen’s (1968) health utilization model. An enabling component is defined as a condition which allows the individual to satisfy a need regarding health service use; this explains that having predisposing characteristics for using health service is not enough unless that person has a means to obtain them (Luipold, 1998). With the average cost of a year in a nursing home costing over $70,000, income and assets enable someone to access and pay for long term care. While on the other end of the spectrum, Medicaid will pay for certain LTC expenses once poverty, age, disability, income, assets and other eligibility requirements are met. Similarly, having long term care insurance may also enable someone to anticipate being able to utilize nursing home care. In a study of 595 low income older adults, those seventy years of age and older and those in poor health had a greater expectation that their adults children would be providing them with assistance as compared to their younger respondents or those in better health (Seelbach & Sauer, 1977). As a whole, lower income groups have higher expectations of nursing home use than their wealthier counterparts (Holden et al., 1997).

Hypotheses

By examining the relationship between family structure and expected nursing home use, this study will contribute to the literature in several ways. First, it will use several unique measures of family structure, including co-residential children and co-residential parents. These two variables illustrate the phenomenon known as the sandwich generation, a more complex family structure in which adults are increasingly likely to be caring for their children and their aging parent simultaneously, due to the intersection of later childbearing and increasing longevity of aging parents (Spillman and Pezzin, 2000). It will also include measures of the number of children as well as current marital status (including cohabitation, divorce, widowhood, and never married) and an accounting of previous divorce or separation in order to see how expectations change based on broader measures of family structure.

I hypothesize that my addition of broader measures of family structure will explain more variation in expected nursing home use than previous studies have done. I anticipate that those with co-residential children and/or co-residential parents may expect a lower likelihood
of nursing home use due to societal expectations for familial caregiving. I also expect differences in perceptions of nursing home use based on marital status. I expect that those who are married will have the lowest expectation of nursing home admittance, while those who have never been married will have the highest expectation for nursing home use. It is less clear, due to lack of previous research, what the expectations will be for those who are widowed or divorced. I expect that these individuals will have higher expectations for use than those who are married, due to not having a spousal caregiver, but lower expectations for use than those who are never-married, due to familial networks established via their previous marriages. It is also not clear whether those who are cohabiting will expect their partner to potentially provide the same type of care as those who are married, and therefore I expect that cohabiters may evidence a higher expectation of using nursing home use than those who are married. Finally, I expect those with no children or with fewer children to perceive a higher chance of nursing home use than those with more children.

**Methods**

**Data**

I use data from the 2006 wave of the Health and Retirement Study (HRS). The HRS is a nationally representative study of adults ages 50 and above and contains oversamples of Blacks and Hispanics. There are 18,469 respondents participating in the 2006 Wave of this longitudinal study of older adults in the United States. There are several benefits to using the HRS for this study, including the large sample size, the sampling of minority groups other than Blacks and the wide range of family structure questions that the HRS uses in its 2006 core. This includes household membership, long term care insurance, continuing care retirement communities and multiple marital status variables. In addition to the 2006 wave of the HRS, I am also using several variables from the RAND HRS data including variables pertaining to total income, all assets, number of living brothers, number of living sisters, number of marriages, and ever being divorced or widowed. The RAND HRS data files contain cleaned and created variables and several model-based imputations, such as for income and wealth (RAND Center for the Study of Aging, 2009).

My dependent variable, nursing home use expectation, was only asked of those 65 years old and over or those interviewed for the first time who were not already residing in a nursing home. Of the original 18,469 respondents, 749 (4%) did not respond to the question about expectations of nursing home use. Only those 65 and over with valid data on the dependent variable are included in the analyses. Therefore, my final sample consists of 9,255 respondents.

**Measures**

**Dependent Variable.** The dependent variable used in the analysis is expected nursing home use. The HRS question asks, “What is the percent chance that you will move to a nursing home in the next five years?” Responses can range from 0 (absolutely no chance) to 100 (absolutely certain). The dependent variable was heavily weighted towards the absolutely no chance category; however after this first grouping I was able to group the categories into ten-and twenty-percent increments. To address the clustering around certain probabilities, the dependent variable was recoded into 5 categories (see distribution in Table 1). The first category includes the 46.2% of the sample that indicated there was a 0% chance of entering a nursing home, the second accounts for 19.6% percent that reported a 1 to 10 % chance, the third includes 12.7% who report a 11 % to 49% chance, the fourth represents 11.2% of
respondents reporting a 50% to 74% chance, and the fifth includes 10.3% percent of the sample reporting a 75% to 100% chance. This clustering was created in an attempt to maintain some of the ratio-level measurement of the variable while collapsing categories with too few respondents.

**Family Structure Variables.** The independent variables used to measure family structure include past and present marital status, living relatives, household structure, proximity of family, as well as gender of and number of children. Marital status incorporates both current and previous marital status. Marital status is measured by a series of mutually exclusive dichotomous variables: *first marriage* (used as the reference category in multivariate analysis), *remarriage, cohabitation, divorced/separated, widowed and never married*. Beyond the presence of a spouse in the household, other household members may also influence a respondent’s expectations for long term care use. Household structure was assessed using the HRS household roster that takes a count of everyone living in the respondents’ home. *Parent in household, child in household, and grandchild in household* are each dichotomous variables coded (1) if the respondent has the co-resident in their household and (0) otherwise.

In addition to co-residential children, it is important to assess the total number of children and gender of children. Using the child roster, dichotomous variables indicate *daughters* and *sons*, coded (1) if the respondent has any daughters or any sons, respectively; stepsons and stepdaughters were added into the respective percentages of sons and daughters measure. *Living brothers* and *living sisters* are dichotomous variables indicating that the respondent has any living brothers or living sisters, respectively. Similarly, having *local family* is a dichotomous variable coded (1) if the respondent reports having relatives near the respondents’ residence and (0) otherwise.

**Sociodemographic Control Variables.** Based on previous research, a number of sociodemographic variables are important to include as controls in the multivariate analysis. *Female* is a dichotomous variable coded (1) if the respondent is female and (0) otherwise. *Age* is a continuous variable representing the respondent’s age in years. Race is categorized into four mutually exclusive dichotomous variables (*Black, White, Hispanic and Other*) to indicate the respondent’s race-ethnicity. *Education* is coded as the respondent’s total number of years of education and ranges from no education (0) to seventeen or more years (17). The constructed RAND measure of *income* is the total household income in dollars and the total *assets* variable is created using net worth minus one’s total amount of debt. Both income and assets are logged for use in multivariate analysis to minimize the effect of skewness.

Other variables such as health and experience with health-related systems were used as independent variables in the analysis. *Health* is a self-rated measure of health that asks the respondent, “Would you say your health is excellent, very good, good, fair or poor?” Responses to the question are reverse coded so that they range from 1 (poor) to 5 (excellent). Additionally, a measure of *activities of daily living (ADL) limitations* is used to measure functional limitations. The ADL measure is a six-item index. The HRS asks respondents if they had any difficulty getting in or out of bed, walking, dressing, bathing, toileting, or eating. If respondents indicate any difficulty with one of these activities, it is coded (1). Responses are then added together to form the index, ranging from no limitations (0) to six limitations (6). *Long term care insurance* is a dichotomous variable coded (1) if the respondent has long term care insurance, and (0) if not. *Living in a continuing care retirement community (CCRC)* is a
A dichotomous variable coded (1) if the respondent is currently living in a CCRC and (0) if not. Similarly, *previous stay in a nursing home* is a dichotomous measure of whether respondent has been a patient overnight in a nursing home in the past two years, and is coded (1) if the respondent has had a nursing home stay and (0) otherwise.

**Missing Data.** Overall there is very little or no missing data for the independent variables. The largest missing percentage came from the question of whether a respondent had long term care (LTC) insurance, for which 1.1% of the sample was missing data. Though there is very little missing data, listwise deletion is not a preferable strategy. Instead, the “impute” command in Stata used hotdeck imputation techniques to assign a value for the missing data based on patterns found in the other independent variables used in this analysis.

**Plan of Analysis**

The data are analyzed using bivariate analysis to examine the means of all variables. Then, OLS regression models examine whether family structure differences are related to nursing home use expectations even after controlling for various sociodemographic factors. Interaction terms between the respondent’s gender and the family structure variables are also tested to examine whether the relationship between family and long term care expectations may differ for men and women. A respondent-level weight is available in the HRS and this weight is used in univariate analyses to adjust for oversampling of Blacks and Hispanics; however, it is not advisable to use in multiple regression due its potential to introduce bias and the fact that weights are not a function of the dependent variable in this analysis (DeMaris, 2004). I use the “svy” commands in Stata to apply the cluster weights available in the HRS, which adjust for the complex, multi-stage clustered sampling design of the study. Additionally, income and assets are logged when used in regression analysis to minimize the effect of outliers.

**Results**

**Bivariate Results**

The weighted means and standard errors of all variables are shown in Table 1. The mean for my dependent variable, expected nursing home use, is 2.21, which is between the categories of 1 to 10% chance (2) and 11 to 49% chance (3). Approximately 58% of the sample is female, the average age for this sample is about 75 years, and respondents in the sample average about 12 years of education. As far as race is concerned, 86% of respondents are White, 7% are Black, 5% are Hispanic and 1% are of another race-ethnicity. The average total income is almost $51,300 and average assets are approximately $624,000. As far as health, average self-rated health is approximately 3 (which is the “good” ranking in the scale). As may be expected, average total ADL limitations is low, with a mean of 1.37. Approximately 15% of the sample has long term care insurance. On average, only 5% of the sample is residing in a CCRC, and about 7% have had a previous nursing home stay. It is important to note that while the average income, assets, and LTC insurance holders are accurate depictions of this sample they are higher than the national average.

With regard to marital status, approximately 40% of the sample is in their first marriage, 15% remarried, 2% cohabiting, 9% divorced or separated, 30% widowed and 3% never married. Only about 1% of respondents have a parent living in the household, 16% have a child living in the household, and 6% have a grandchild in the household. On average about 78% of the respondents in the sample have one or more living daughters and 80% have one or more sons.
About 54% of the sample has a living brother while 61% of the sample has a living sister. Finally, about 29% of the sample reports that they have friends or family living locally.

**Multivariate Results**

Table 3 shows the results of the regression of expected nursing home use net of family structure and sociodemographic factors. Model 1 shows the regression with only the sociodemographic factors. Five variables are significantly related to expectations of nursing home use. Women, on average, expect a higher chance of entering a nursing home. Second, as age increases the expected chance of nursing home admittance increases as well. Health is also significant; as self-rated health decreases, expected chance of entering a nursing home increases, and as ADL limitations increase so does expected nursing home utilization. Finally, Model 1 shows that those who have long term care insurance expect a higher chance of entering a nursing home, on average. This is consistent with previous research finding that women, older individuals, and those in poorer health all expect greater use as well as have greater actual rates of nursing home utilization. With respect to long term care insurance, those who purchase long term care insurance are likely those who have the greatest expectation for use and are thus planning accordingly by purchasing LTC insurance.

Model 2 of Table 3 regresses expected nursing home use on just the family structure variables. Here, six of the variables are significantly related to expected nursing home use. Those who are widowed expect greater chances of expected nursing home entry, on average, than those in a first marriage. Having a parent in the household or a child in the household is related to a lower chance of nursing home entry, on average. Results also show that having a daughter is related to a lower expectation of nursing home use. Having a son has no impact on expected nursing home use and is statistically the same as having no child at all in terms of the way it is related to nursing home use expectations. Finally, those who have living siblings – whether a brother or a sister – report a slightly lower expectation of nursing home admittance, on average. Supplemental analysis (results not shown) also tested number of daughters and sons and number of brothers and sisters but found no significance.

Model 3 regresses nursing home use on both the family structure variables as well as the sociodemographic control variables. As was the case in Model 1, the same sociodemographic variables -- being female, age, self reported health, ADL limitations and long term care insurance -- are significantly related to nursing home use expectations. However, when accounting for the sociodemographic variables, only three family structure variables are significant. After controlling for the sociodemographic variables, having a parent in the household, having a child in the household and having a daughter are negatively related to expected nursing home use. After controlling for the sociodemographic variables in Model 3, several of the family structure variables that were significantly related to nursing home expectations in Model 2 are no longer significant; being widowed, and having living brothers or living sisters are not significantly related to expectations of nursing home use. Specifically, controlling for age reduces all of these coefficients to non-significance. It is because people who are widowed or who do not have living brothers or sisters are older, on average, than those who are not widowed and who have living brothers and sisters that their nursing home expectations are higher. In sum, the full model (Model 3) shows that having a parent or child in the household or having at least one living daughter are important for older individuals’ expectations of needing nursing home care. Further, some of the variables that are not
significant in this model provide important information. None of the measures of marital status, having a living brother or sister, having a son or having family locally are significant.

After regressing nursing home expectations on both sociodemographic and family structure variables in the full model, I tested interaction terms for gender and family structure in subsequent models. These models examined whether the relationship between family structure and nursing home expectations might be different for men and women. Interaction terms for each of the family structure variables were tested in separate models, but only one interaction term was significant; this is shown in Model 4 of Table 3. Interaction terms between current marital status and gender are added in Model 4, and results show a significant interaction between female and cohabitation. This interaction tells us that women cohabiting expect a lower chance of nursing home use than men who are cohabiting. It is unclear why this is the case, and, to my knowledge, this is the first study examining the role of cohabitation in either expected or actual nursing home use. This may suggest that men do not expect the same type of care from their cohabiting partner that women do.

Discussion

I use data from the 2006 Wave of the Health and Retirement Study to investigate the ways in which family structure is related to nursing home use expectations. My first hypothesis that having parents and/or children in the household would decrease expected nursing home use is supported. Both Models 2 and 3 show that having a parent and/or child in the household is related to lower expected nursing home use. This could be a result of familial caregiving dynamics and a sense of obligation as I had previously suggested. Perhaps the respondent, who is taking care of an aging parent in the household, expects the same support from their family members if they were to need care.

My hypothesis that marital status would be related to expected nursing home utilization receives little support. Specifically, I hypothesized that those who were married would have the lowest expectation of nursing home admittance, while those who have never been married will have the highest expectation for long term care use. I also expected that those who were divorced or widowed would have higher expectations for use that those who are married (due to not having a spousal caregiver) but lower expectations for use than those who are never-married (due to familial networks established via their previous marriages). In Model 2, including only the family structure variables, being remarried or widowed (versus being married) was significantly related to nursing home use expectations. However, once the sociodemographic variables are controlled, none of the marital status variables are significantly associated with expected nursing home utilization. Specifically, controlling for age reduces the coefficients to non-significance. It is because people who are widowed are older, on average, than those who are not widowed that their nursing home expectations are higher. This is in contrast to Holden et al.’s (1997) study, which found that current availability of a spouse did impact expectations, but that this was primarily for men. The lack of significance for marital status is very important. Those who are remarried, divorced, widowed, or never married do not expect significantly different chances of needing nursing home care than do those in first marriages. Research on actual nursing home use shows that spouses are the “first line” of caregiving when someone needs long term care, but expectations for care do not seem to reflect considerations of the availability of this factor. This offers caution to the suggestion in previous research that individuals form their expectations based on rational assumptions and
knowledge of factors that predict actual use; older adults may not be attentive enough to the implications of their marital status for future nursing home placement.

When running the interaction term for gender the only significant variable found in this study is cohabitation. The interaction tells us that women cohabiting expect lower chances of nursing home use than women in first marriages, but men in cohabiting relationships expect greater chances of nursing home use than men in their first marriage. Also, gender may play another role in this dynamic in that while men are more likely to be married and view their spouse as a primary caregiver, women are more likely to be the caregiver than are married men (Holden et al., 1997). I think it is important to note that though marital status has not appeared to play a significant role in nursing home use expectations within this sample, previous research finds that married older persons have about half the risk of actual nursing home admission of unmarried persons (Freedman, 1996). I paid special attention to cohabition in my hypotheses and had expected that cohabiters might evidence a higher expectation of using nursing homes than those who are married. However, Model 2 and Model 3 did not find any significant relationship between cohabitation and expected nursing home use. This may be in part due to the small number of cohabitors in the sample. Yet my interaction term did acknowledge a difference between men and women cohabiters and found that women expected a lower chance of nursing home use and men a higher chance of nursing home risk than their counterparts in a first marriage. This may be in part due to women seeking out healthier partners for cohabitation while men find themselves in cohabiting situations with less healthy or less obligated partners.

Finally, I hypothesized that children would be related to lower expected nursing home use. This hypothesis is supported only for daughters. Having at least one daughter does appear to lessen expected nursing home use, but only marginally. Having sons is not significantly related to expectations of nursing home utilization. Here the literature and the analysis align in acknowledging the importance of having a daughter to care for older adults. The separating of children based on gender is important based on the research that indicates that women (daughters and daughter-in-laws) are more often caregivers (Silverstein, 2006). Results of this study underscore the importance of accounting for gender of the child. Holden et al. (1997) found that expectations of nursing home use decrease as number of children increase. In supplemental analyses I tested count variables for numbers of sons and number of daughters, but these were not significantly. Instead, expectations of nursing home use for both men and women seem most significantly impacted by the presence of at least one living daughter.

Limitations

While this study provides valuable information on how family structure may be related to expectations of long term care use, there are several limitations. First, the dependent variable, expected chance of entering a nursing home, may not be ideal. The question is worded to only apply to nursing home expectations in the next five years. However when asked of new respondents in the HRS the question asks about expected nursing home use ever; making it hard to distinguish individuals’ interpretations. For this study, they ideal language would have asked about expected nursing home use ever. Further, the question could have made a distinction between long term nursing home stays and short term nursing home stays for rehabilitation purposes; it is hard to know what the respondent is thinking of when they hear the term “nursing home.” The dependent variable question may have also been easier to
work with had the answers not been anything from 0 to 100 percent chance. The vast majority of respondents estimate chances in five- and ten-year increments, resulting in an uneven distribution. And, there was particularly an abundance of respondents who chose zero percent.

There are several other factors that could have been included in this study, such as marital happiness. With measures of only current and past marital status there is an assumption that all married adults estimate their nursing home expectations similarly. Yet those in unhappy marriages may not expect long term care from their spouse, increasing both their expectations for and actual use of nursing home care. Future research might also benefit from using other measures of health and functional status in addition to ADL limitations and self rated health. A more thorough investigation of the role of disability and how it interacts with these family structure variables to influence long term care expectations would be both interesting and informative. Ideally, future research should also include an examination of other diverse family structures such as step-family situations and same-sex couples. Finally, future research should link expected use to actual nursing home use in order to understand how well these family structure factors and expectations translate into actual utilization.

Policy Implications

My analysis is consistent with previous studies finding that expectations are influenced by age, gender, self-rated health, ADL limitations and having long term care insurance. These expectations may result in planning or a lack of planning. If someone is expecting that they will need a nursing home they may plan accordingly by saving, moving to a CCRC, or purchasing different insurance plans. With about 1.44 million Americans living in nursing facilities there is a lot at stake in terms of policy implications (Houser et al., 2009). If an individual is expecting nursing home use then they may save more during their working years, choose less physically demanding occupations, or plan ahead by moving close to daughters if they are indeed acknowledging the importance of children (and the child’s gender) for caregiving. Individuals may also go as far as investing in Medicaid-exempt assets such as purchasing and maintaining more expensive housing, or even begin the transfer of assets to children at a much earlier time.

My analysis shows that, when it comes to family structure, the most significant variables to influence nursing home expectations are having a parent in the household, having a child in the household and having a daughter. Having a parent in the household could be a reflection of familial obligation and an assumption that, just as they have cared for their parents, their children will do the same in return. Having a child in the household could speak to the same familial obligation, or may also indicate quality of the parent-child relationship. Children who remain in a parent’s household (particularly young adult children) or who move to co-reside with their parents may do so because they have a good relationship with the parent; this strong relationship may be reflected in an expectation that these children will provide care for the parent in later life, thereby decreasing their expectation for nursing home care. While having daughters is related to lower expectations of nursing home use, the effect size is not large, and having sons is not significant. Yet children are a predominant source of care in later life. This is notable, as having children does not seem to be as closely related to expectations of nursing home use as it is for actual use.

This disconnect between expectations and actual utilization may be most important to policy. While previous work on actual nursing home utilization clearly indicates that marital status along with number and gender of children is important, the respondents in this study are
not taking these factors strongly into account. This could mean that if they are not expecting nursing home use then they are not saving for it either, even when the data shows that their expectations often underestimate actual utilization rates. So who will foot the bill if respondents aren’t planning accordingly? These are cumbersome policy issues that will need to be addressed. For example, programs may need to be designed to raise older adults’ awareness of factors that make nursing home use more or less likely. This disconnect between expectations and actual usage rates is important in planning how policy should be predicting both the demand for formal-long term care and for designing public policy that is aimed at ensuring adequate long term care alternatives.

Conclusion

The results of this study have a number of important implications. Most noteworthy is that, while the literature shows that daughters and daughter-in-laws are primary caregivers and that for as far back as 1965 studies find that those with a spouse or living children are far less likely to enter a nursing home (Townsend, 1965), expectations of nursing home use do not reflect this research. Specifically, children and marital status have much less of an impact on expected nursing home usage than research on actual nursing home usage would suggest. However, results show that several measures of family structure do matter for nursing home expectations: having at least one daughter or having parents or children in the household is related to lower expectations of nursing home use.

There have been changes in nursing home use that may not be fully grasped by older adults. While nursing homes were previously viewed as places for long term stays, there is a growing usage of nursing homes for rehabilitation today, with relatively short comparable stays. It is hard to know if the respondents in this sample where factoring this in to their estimation of nursing home use. However, due to the average age of the sample being 75 and the fact that almost 50% of the sample indicated a 0% chance of nursing home use in the next two years, it can be hypothesized that rehabilitation and short term stays have yet to be factored into the expectations of this sample. The HRS does not distinguish between long-term and short-term nursing home stays in the question on expected nursing home use and therefore there are some limitations in knowing how respondents were interpreting the question on expected nursing home usage.

In conclusion, sociodemographic factors such as health, gender, and age appear more salient to individuals’ perceptions of their expected nursing home usage than do marital status and family structure variables. Results of this study are instructive for programs and policies designed to aid people in planning effectively for long term care. Further research should aim to incorporate more diverse models of family structure, such as step-family dynamics, and to explore long term stay expectations versus short-term nursing home stay expectations. Future research should also further examine the role of family structure in explaining discrepancies between expected use and actual use.
Table 1. Frequency Distribution of Expected Chance of Nursing Home Use

<table>
<thead>
<tr>
<th>Value</th>
<th>Percent Chance of Nursing Home</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>46.26</td>
</tr>
<tr>
<td>2</td>
<td>1 - 10</td>
<td>19.64</td>
</tr>
<tr>
<td>3</td>
<td>11 - 49</td>
<td>12.69</td>
</tr>
<tr>
<td>4</td>
<td>50 - 74</td>
<td>11.15</td>
</tr>
<tr>
<td>5</td>
<td>75 - 100</td>
<td>10.27</td>
</tr>
</tbody>
</table>

Note: N= 9,255
Data source: 2006 Health and Retirement Study
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected Nursing Home Use (1-5)</td>
<td>2.21 (0.02)</td>
</tr>
</tbody>
</table>

### Sociodemographic Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.58 (0.00)</td>
</tr>
<tr>
<td>Age</td>
<td>74.63 (0.12)</td>
</tr>
<tr>
<td>Education</td>
<td>12.43 (0.08)</td>
</tr>
<tr>
<td>White $^1$</td>
<td>0.86 (0.01)</td>
</tr>
<tr>
<td>Black</td>
<td>0.07 (0.01)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.05 (0.01)</td>
</tr>
<tr>
<td>Other Race-Ethnicity</td>
<td>0.01 (0.00)</td>
</tr>
<tr>
<td>Health</td>
<td>3.11 (0.02)</td>
</tr>
<tr>
<td>ADL Limitation</td>
<td>1.37 (0.01)</td>
</tr>
<tr>
<td>Long Term Care Insurance</td>
<td>0.15 (0.01)</td>
</tr>
<tr>
<td>Ever in CCRC</td>
<td>0.05 (0.00)</td>
</tr>
<tr>
<td>Previous Nursing Home Stay</td>
<td>0.07 (0.00)</td>
</tr>
<tr>
<td>Total Income (Dollars)</td>
<td>51296.80 (1936.53)</td>
</tr>
<tr>
<td>Total Assets (Dollars)</td>
<td>623862.40 (34836.62)</td>
</tr>
</tbody>
</table>

### Family Structure Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean (S.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Marriage $^1$</td>
<td>0.40 (0.01)</td>
</tr>
<tr>
<td>Remarriage</td>
<td>0.15 (0.00)</td>
</tr>
<tr>
<td>Cohabitation</td>
<td>0.02 (0.00)</td>
</tr>
<tr>
<td>Divorced/Seperated</td>
<td>0.09 (0.00)</td>
</tr>
<tr>
<td>Widowed</td>
<td>0.30 (0.01)</td>
</tr>
<tr>
<td>Never Married</td>
<td>0.03 (0.00)</td>
</tr>
<tr>
<td>Parent in Household</td>
<td>0.01 (0.00)</td>
</tr>
<tr>
<td>Child in Household</td>
<td>0.16 (0.01)</td>
</tr>
<tr>
<td>Grandchild in Household</td>
<td>0.06 (0.00)</td>
</tr>
<tr>
<td>Have Daughter(s)</td>
<td>0.78 (0.01)</td>
</tr>
<tr>
<td>Have Son(s)</td>
<td>0.80 (0.01)</td>
</tr>
<tr>
<td>Living Brother</td>
<td>0.54 (0.01)</td>
</tr>
<tr>
<td>Living Sister</td>
<td>0.61 (0.01)</td>
</tr>
<tr>
<td>Have Family local</td>
<td>0.29 (0.01)</td>
</tr>
</tbody>
</table>

N=9,255

$^1$Reference category

Data source: 2006 Health and Retirement Study
Table 3. Regression of Expected Nursing Home Use Net of Family Structure Factors

<table>
<thead>
<tr>
<th>Sociodemographic Factors</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.028 *</td>
<td>0.022 *</td>
<td>0.022 *</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-0.196</td>
<td>-0.138</td>
<td>-0.666</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>0.581</td>
<td>0.271</td>
<td>0.250</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.848</td>
<td>0.833</td>
<td>0.452</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>-0.688</td>
<td>-0.805</td>
<td>-0.501</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td></td>
</tr>
<tr>
<td>ADL Limitations</td>
<td>0.010 **</td>
<td>0.008 **</td>
<td>0.003 **</td>
<td></td>
</tr>
<tr>
<td>Long Term Care Insurance</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td>0.000 ***</td>
<td></td>
</tr>
<tr>
<td>Ever in CCRC</td>
<td>0.322</td>
<td>0.437</td>
<td>0.323</td>
<td></td>
</tr>
<tr>
<td>Previous Nursing Home Stay</td>
<td>0.439</td>
<td>0.407</td>
<td>0.284</td>
<td></td>
</tr>
<tr>
<td>Total Income</td>
<td>0.738</td>
<td>0.788</td>
<td>0.554</td>
<td></td>
</tr>
<tr>
<td>All Assets</td>
<td>-0.278</td>
<td>-0.208</td>
<td>-0.256</td>
<td></td>
</tr>
</tbody>
</table>

| Family Structure                          |         |         |         |         |
| Remarried                                 | -0.059 | -0.115 | -0.083 |         |
| Cohabiting                                | -0.696 | 0.679 | 0.783 |         |
| Divorced/Separated                        | -0.360 | -0.218 | 0.964 |         |
| Widowd                                    | 0.000 ***| -0.877 | -0.899 |         |
| Never Married                             | 0.712 | 0.916 | 0.799 |         |
| Parent in Household                       | 0.000 ***| -0.004 ** | -0.003 **|         |
| Child in Household                        | -0.017 | -0.015 * | -0.029 |         |
| Grandchild in Household                   | -0.466 | -0.283 | -0.218 |         |
| Daughter                                  | -0.044 * | -0.046 * | -0.115 |         |
| Son                                       | -0.454 | -0.807 | -0.690 |         |
| Living Brother                            | -0.001 ** | -0.403 | -0.465 |         |
| Living Sister                             | -0.013 | -0.284 | -0.587 |         |
| Have family local                         | 0.058 | 0.269 | 0.280 |         |

| Interaction Terms                         |         |         |         |         |
| Female * Remarriage                       |         |         |         | 0.886   |
| Female * Cohabiting                       |         |         |         | -0.031 *|
| Female * Divorced/Separated               |         |         |         | -0.258  |
| Female * Widowed                          |         |         |         | -0.960  |
| Female * Never Married                    |         |         |         | 0.959   |

| F                                         | 31.73 ***| 4.47 ***| 23.97 ***| 23.09 ***|
| Constant                                  | 0.58     | 2.36    | 0.89     | 0.41     |
| R²                                        | 0.05     | 0.01    | 0.05     | 0.06     |

Significant predictor:  *p < 0.05   **p < 0.01   ***p < 0.001

Note: N= 9,255
References


