ABSTRACT

Title of Dissertation: ELDERLY PARENTS' EXPECTATIONS AND REALIZATIONS OF INFORMAL CARE FROM ADULT CHILDREN: AN ECONOMIC PERSPECTIVE

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Over the next 50 years, the U.S. will see a tremendous growth in the elderly population due to the aging baby boomers and rising life expectancies. Currently, forty-five percent of seniors need assistance with activities of daily living. Medicare and Medicaid provide little coverage for these services, leaving the elderly to rely on informal care. While previous research has examined who provides care and the process by which children and parents arrange care, I use the Study of Assets and Health Dynamics among the Oldest Old (AHEAD) to examine parents' expectations about future care from children and the implications of those predictions after the onset of a disability.

Using a probit framework, I examine who anticipates care from children among non-disabled households and who actually receives care among disabled households. The household characteristics correlated with anticipating future care differ from those

correlated with the true probability of receiving care. For example, an additional daughter increases the probability that an elderly household expects future care, however an additional daughter is not statistically significantly related to the true probability of receiving care. Conversely, parents' socioeconomic status is not statistically significantly related to the probability of expecting future care, but lower socioeconomic households are more likely to receive care.

I directly evaluate the accuracy of parents' predictions using the panel nature of the data. Among households that expect future care from children, over 60 percent do not receive care after the initial onset of a disability and nearly 50 percent still do not receive care after living with disabilities for five years. Among households that do not anticipate care from children, approximately 25 percent unexpectedly receive care after the initial onset of a disability, while slightly more than 50 percent receive care after needing help for five years. Further analysis reveals that inaccurately predicting care from children is associated with some economic and psychological costs, whereas unexpectedly receiving care is correlated with some economic and psychological benefits.

# ELDERLY PARENTS' EXPECTATIONS AND REALIZATIONS OF INFORMAL CARE FROM ADULT CHILDREN: AN ECONOMIC PERSPECTIVE

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## 1. Introduction

A major challenge of the coming decades will be to provide care to the rapidly growing elderly population in our country.[1] If future provision of care follows current patterns, children of the disabled elderly will provide much of this care. Previous literature concerning informal care[2] of the elderly by their adult children has focused on describing who provides care and who receives care. Some research has moved beyond these descriptive analyses and attempted to model the decision-making process among disabled parents and their adult children. In this dissertation, I address a relatively unexplored aspect of informal care – parents' expectations about future care from their children. I first examine whether parents' expectations are based on child and parent characteristics that are correlated with the true probability of receiving care. Using panel data, I then investigate the accuracy of parents' predictions. Because expectations about informal care are potentially important determinants of households' consumption and savings decisions, I also estimate the economic and psychological impacts of inaccurate predictions.

Forty-five percent of the elderly population needs assistance with personal care activities such as eating, bathing, and preparing meals. And although the federal government provides health insurance to 97 percent of the elderly through Medicare and Medicaid, these programs generally do not cover services related to personal care unless

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[1] An individual is classified as disabled if she needs assistance performing one or more activity of daily living (ADL) or instrumental activity of daily living (IADL). ADLs include: walking, getting in and out of bed, dressing, eating, toileting, and bathing. IADLs include: managing finances, making phone calls, taking medication, grocery shopping and preparing meals.

[2] Informal care is defined as assistance administered by individuals who are not associated with medical service organizations, such as spouses, children, or friends. This dissertation and most previous studies measure informal care as assistance with ADLs or IADLs.

the beneficiary has a condition requiring care from a skilled health care professional. Some states do cover personal care services under Medicaid, but these policies provide coverage for only four percent of the disabled elderly population. Consequently, most disabled elderly must purchase formal care or rely on informal care providers for the assistance they need performing every-day tasks.

When an elderly person uses formal care, the cost may be extreme. The most comprehensive care for an elderly person is administered in skilled nursing facilities. The estimates for the annual cost for nursing home care range from $52,195 to $61,320 in 2002.[3] These costs are high given that in 2000 the median net worth and income for households headed by a person 65 years or older was only $108,885 and $28,147, respectively (Orzechowski and Sepielli, 2003 and U.S. Census Bureau).[4] The elderly who do not need constant medical care may opt for assisted living facilities. These facilities provide assistance with activities of daily living but only minimal medical services, thus lowering the cost. The costs are still high, however, ranging from $22,680 to $28,680 annually.[5] For elderly individuals who want to remain in their homes, the cost of care varies depending on the type of provider. If an elderly person receives only 10 hours of care per week, the estimated annual cost ranges from $12,032 to $19,240 for a licensed practical nurse and $7,829 to $9,360 for a home health aide.[6]

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[3] The MetLife Market Survey on Nursing Home and Home Care Costs in 2002 (MetLife) provides these estimates for the annual cost a semi-private and private room, respectively.

[4] The median net worth excluding home equity is only $23,369.

[5] The first estimate is produced by the National Center for Assisted Living using the 2000 Survey of Assisted Living Facilities. The Assisted Living Federation of America constructed the second estimate. Both estimates include a basic room and basic services.

[6] The National Association of Home Care and Hospice (NAHC) and the Hospital and Healthcare Compensation Service (HCS) estimate that the median hourly cost for a licensed practical nurse is $14.66,

Due to the low income and wealth of elderly households and the high cost of formal care, informal care from spouses, children, and other relatives is a potentially important determinant of an elderly household's well-being. Seventy-nine percent of the disabled elderly live in the community, not in skilled nursing facilities (Agency for Healthcare Research and Quality, 2000). In addition, two-thirds elderly persons living in the community rely entirely on informal care providers (Lui, Manton, and Aragon, 2000).

Over the next 50 years, the importance of informal care will increase due to aging Baby Boomers and the increased life expectancy of the elderly in the U.S (Committee on Ways and Means, 2000). In 2000, 12 percent of the U.S population was 65 years or older and 1.5 percent were 85 years or older (Hetzel and Smith, 2001). These figures are anticipated to change dramatically as the Baby Boomers reach retirement. The U.S. Census Bureau predicts that by 2030, the year after the last baby boomers reach age 65, 20 percent of the population will be 65 and older. The population 85 years and older is anticipated to increase to 2.4 percent by 2030 and to 4.6 percent in 2050 (Day, 1996).

In Chapter 2, I review the existing literature on the use of informal care. While this work thoroughly investigates which elderly parents receive care from their adult children and who provides care to disabled elderly parents, few have examined elderly parents' expectations about future care from children, the accuracy of those predictions, or the effect of inaccurate predictions on the well-being of elderly parents. In this chapter I also outline the data requirements necessary to address these issues and demonstrate that data from the Study of Assets and Health Dynamics among the Oldest Old (AHEAD) meet these requirements. The AHEAD survey was first administered in 1993 with

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while MetLife estimates an average hourly cost of $37. NAHC/HCS estimates that the median hourly cost for a home health aide is $9.77, while MetLife estimates that the average hourly cost is $18.

follow-up surveys given in 1995, 1998, and 2000. Initially, 6,222 households with at least one household member born prior to 1924 were surveyed. The sample size of the AHEAD survey, the questions asked, and its longitudinal nature allow me to contribute to the existing literature on informal care by examining parents' expectations about future care from their adult children.

In Chapter 3, I use the first wave of the AHEAD survey to examine the child and household characteristics that non-disabled parents incorporate when predicting whether their children will provide care in the future. Previous research indicates that female children and children who live near to their parents are more likely to provide informal care to a disabled parent. This literature also identifies which of the parents' characteristics are correlated with the probability that a disabled parent actually receives care. I divide the 1993 AHEAD sample into two groups: disabled and non-disabled households. The sample of disabled households provides an opportunity to confirm the results from previous research regarding which characteristics are correlated with the probability that a disabled household actually receives care. I use the sample of non-disabled households to investigate who parents think will provide them with informal care (if needed) in the future.

Sociologists and economists propose complementary theories regarding who provides care. Sociologists stress the importance of socialization and gender roles in determining behavior, while economists focus on the importance of specialization of labor and opportunity costs. Gender role theory predicts that daughters are more likely to care for the disabled parents because girls are socialized to act as nurturers and caregivers. While economists may also predict that women are more likely to care for

aging parents, the explanation of this conclusion is different. Economists predict that people with the highest comparative advantage in providing care will do so. Children with low opportunity costs are more likely to have an advantage in providing care since their time is less valuable. Increasing returns to specialization and the biological characteristics of women have lead to a higher probability of non-market labor among women. This specialization of women towards non-market work has led to lower investments of human capital among women and contributed to their lower market wages relative to men. Consequently, daughters are likely to provide care to elderly parents due to lower opportunity costs. The analysis in Chapter 3 provides evidence that parents overestimate the probability that daughters will provide care and underestimate the importance of opportunity costs when assessing the likelihood that their children will provide care in the future. These results suggest that elderly parents' predictions about future care may not be accurate.

In Chapter 4, I use the panel nature of the AHEAD data to examine whether parents' predictions about informal care are accurate and whether inaccurate predictions impact the economic and psychological well-being of disabled elderly parents. Using the 1993 sample of non-disabled parents, this chapter begins with an examination of how the disability levels change over time and how these changes affect the likelihood that parents receive informal care from their adult children. After the initial onset of a disability, over 60 percent of elderly households that expected care from children do not receive care. Even after five consecutive years of needing help, nearly 50 percent of households that predicted help from children still do not receive any assistance from their adult children. Conversely, among households that did not predict future care from

children, approximately 25 percent unexpectedly receive care after the initial onset of a disability. After needing assistance for five consecutive years, the percentage of households receiving unexpected care is slightly more than 50 percent.

These results raise two important questions. First, which households are more likely to incorrectly predict care? This question is important because of the potential financial consequences of not receiving informal care. If elderly households that inaccurately predict care from their children have high income and wealth, then paying for formal care may not create a financial hardship or psychological stress. If, however, households that inaccurately predict care have low income and little savings, then the hardships they confront may be substantial. While households with low educational attainment are less likely to inaccurately predicting care from children, educational attainment is not related to the probability of unexpectedly receiving care. Other measures of socioeconomic status are not related to either probability. The results suggest that an additional IADL limitation decreases the probability of inaccurately predicting care and increases the probability of unexpectedly receiving care, providing further evidence that children provide care when the cost is low. Furthermore, married households are less likely to receive care regardless of their predictions. Finally, transfers from parents to children, such as deeding a house to a child and caring for grandchildren, increase the probability of unexpectedly receiving care, but such transfers are not related to the probability of inaccurately predicting care.

The high probability of inaccurate predictions raises another question: What are the economic and psychological consequences of inaccurate predictions? This question is addressed using information about elderly parents' saving and spending behavior,

whether they have experienced depression, and their subjective probabilities about the. Among households that expected future care from children, households that do not receive care are more likely to incur economic and psychological costs relative to households that do receive care. These costs include a higher probability of spending assets after the initial onset of a disability, a lower probability of saving after the initial onset of a disability, a higher probability of depression in the long-run, and lower subjective life expectancies. Among households that do not expect future care from children, households that nevertheless receive the care are more likely to enjoy economic and psychological benefits relative to households that do receive care. These benefits include a lower probability of experiencing food insecurity and higher subjective life expectancies.

The research reported here adds to the literature on informal care in four important ways: (1) It studies whether parents' expectations incorporate child and parent characteristics that are important determinants of the probability of actually receiving care; (2) It assesses the accuracy of parents' predictions about future informal care from adult children; (3) It examines the changes in the likelihood that parents receive informal care as their disability status changes; (4) It investigates the implications of inaccurate predictions on the well-being of elderly parents.

## 2. Literature Review and Description of the Data

### A. Literature Review

Who provides informal care? Who receives informal care? What motivates the caregiver? What are the effects of not receiving informal care on the elderly who need such care? These are among the most interesting questions in gerontology and they have important implications for policies designed to deal with the social and economic impacts of a rapidly aging population. Informal care includes any assistance provided by individuals not associated with professional medical or care organizations, such as spouses, children, or friends.

The majority of previous research has focused on determining who provides care. The bulk of this work demonstrates that women are more likely to provide care. The ratio of daughters to sons who act as primary caregivers to disabled parents is three to one (Stone and Kemper, 1990). Various social science disciplines provide competing explanations for this result. Sociologists and psychologists tend to explain this finding using gender role models in which women are socialized into nurturing roles and social structures and norms encourage them to supply care to family members in need (Walker, 1992). From the perspective of gender role research, social norms and structures place the burden of care for elderly parents disproportionately on daughters rather than sons. For example, feminist scholar Nancy Hooyman (1990) writes that in the most basic sense, the domestic sphere (of women) is culturally linked to expressivity, nurturing, and emotion. Women are socialized to form empathic relationships and to respond to the needs of others. "The burdens for women as caregivers of the elderly are thus best

understood within the broader context of the costs created by the primacy and nature of women's caregiving roles throughout their lives." (Hooyman, 1990, p. 229).

In contrast, standard economic analyses emphasize specialization of labor and opportunity costs to account for the greater prevalence of women among caregivers. From this perspective, women are more likely to act as caregivers for two reasons. First, married women may specialize in non-market activities including care for family members. Second, their opportunity costs are lower than adult males in their household (Byrne, Goeree, Hiedemann, and Stern, 2002). While opportunity costs are usually measured in terms of wages, opportunity costs also include other uses of a potential caregivers' time, such as caring for a spouse, caring for children, or maintaining a home.

Studies examining who provides informal care to disabled parents find that children who are female, who live close to their parents, who do not work, who are not married, and who have fewer children are more likely to provide care. Dwyer and Coward (1991) provide one of the first analyses of the impact of gender on the probability that a child provides informal care while controlling for other child characteristics. The large and positive impact of being female on the probability of providing care is replicated in all subsequent studies (Stern, 1995; Henretta, Hill, Li, Soldo, and Wolf, 1997; Wolf, Freedman, and Soldo, 1997; McGarry, 1998; Hiedemann and Stern, 1999; Engers and Stern, 2000; Holmes and Van Houtven, 2002). Byrne, Goeree, Hiedemann, and Stern (2002), however, provide evidence that this result is attributable to differences in wages between men and women.

Distance to a parent is an obvious impediment to providing care. As the distance between a parent and child increases, the time a child must expend to provide care and

thus the cost of providing care increases. Numerous studies include measures of a child's proximity to her parents. The closer a child lives to a disabled parent the greater the probability that the child provides care (Dwyer and Coward, 1991; Stern, 1995; McGarry, 1998; Hiedemann and Stern, 1999; Neuharth and Stern, 2000; Engers and Stern, 2000). Because children or parents may move closer to each other in order to provide or receive care, the relationship between proximity and care is potentially endogenous. Stern (1995) controls for this potential problem using two-stage least squares (2SLS) and a lagged measure of distance between parents and children as an instrument. Even after applying this technique, the relationship between the probability that a child provides care and the distance between a child and parent remains statistically significant and positive.

In addition to the cost associated with traveling, children who provide care also incur opportunity costs when they provide care. Wages are an ideal measure of opportunity costs, however wage data is often unavailable and even when it is available it is censored because individuals who do not work will not have data. As a result, the relationship between providing informal care and working in the labor market is examined more often. This relationship, however, is potentially endogenous. Children who do not work or only work part-time may be more likely to provide care because they have more leisure time available. Alternatively, providing care may induce a child to reduce time spent in the labor market or quit altogether. Several papers have examined the relationship between labor force participation and the probability that a child provides care while controlling for the potential endogeneity. Stern (1995) and Ettner (1995) find evidence of a negative relationship between caregiving and labor force participation, whereas Wolf and Soldo (1994) do not find a statistically significant relationship. Two

additional papers use imputed wages to estimate the impact of wages on the probability that a child provides care (Sloan, Picone and Hoerger, 1997; Bryne, Goeree, Hiedemann, and Stern, 2002). These studies also find that the probability of providing care decreases as wages increase.

While children may face a trade-off between labor market participation and providing care, they may alternatively provide care at times when they would otherwise participate in non-market activities, such as doing household chores or caring for children or a spouse. Couch, Daly, and Wolf (1999) investigate this proposition using a two-stage model that simultaneously estimates children's money transfers to elderly parents, time transfers to parents, time spent in the labor market, and time spent working in the home. They find evidence that as married adult daughters increase time spent providing assistance to parents, they decrease time spent working in the home not time spent in the labor market.

Time spent working in the home may include spending time with a spouse and caring for children. Several studies include a child's marital status as a covariate when estimating the probability that a child provides care. Most of these articles find a negative relationship between being married and the probability of providing care to an elderly parent (Dwyer and Coward, 1991; Stern, 1995; Neuharth and Stern, 2000; Holmes and Van Houtven, 2002).[7] A few studies also include as a covariate whether the adult children have children of their own. Dwyer and Coward (1991) and Holmes and Van Houtven (2002) both find that an additional child decreases the probability an adult child provides assistance, however Couch, Daly, and Wolf (1999) do not find a

statistically significant relationship. These results support the theory that children with lower opportunity costs are more likely to provide care.

Moving beyond opportunity costs, several economists have investigated the relationship between the probability that a child provides care and the receipt of inter-vivos transfers from their parents. There are several theories explaining the motivation for transfers between parents and children (Lillard and Willis, 1997). Two of these theories provide an explanation for the relationship between inter-vivos transfers and informal care provision. The old age security hypothesis suggests that parents transfer wealth to children due to a lack of trust in other forms of retirement savings (Willis, 1980). Parents invest in their children by transferring financial assets to them early in life with the expectation of extracting their investment later in the form of informal care. On the other hand, Becker and Tomes (1976) suggest that capital markets arise within families because imperfect capital markets often prevent young people from borrowing against future earnings. Financial transfers from parents to children allow children to invest in human capital and these loans are then repaid in the form of informal care from children in later years.

Several empirical studies test the theories linking informal care and inter-vivos transfers. Henretta, Hill, Li, Soldo, and Wolf (1997) find a positive relationship between the inter-vivos transfers and the provision of care within a fixed-effects conditional logit model. In addition, McGarry (1998) illustrates a positive relationship between the probability that a child provides care and two types of inter-vivo transfers, parents deeding a home to a child and listing a child as abeneficiary on a life insurance policy.

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[7] Henretta, et al (1997) include marital status in their model, but do not find a statistically significant

Finally, Norton and Van Houtven (2002) examine whether providing informal care increases the probability that a child receives a financial transfer in the future. They also find a positive relationship after controlling for the potential endogeneity between receiving transfers and providing care using 2SLS.[8]

Recent contributions to the informal care literature by economists have focused on the decision-making process among parents and their adult children using strategic bargaining models (Hiedemann and Stern, 1999; Neuharth and Stern, 2000; Engers and Stern, 2000; Byrne, Goeree, Hiedemann, Stern, 2002). Because siblings are obvious alternative care providers, this work focuses on the importance of sibling characteristics in the choice of caregivers. While previous research has focused on the importance of child characteristics, some research has also examined whether the presence of siblings impacts the probability that a child provides care. These models demonstrate that children are participating in the decisions about informal care for their elderly parents. Several studies provide evidence that the probability that a child provides care decreases as the number of siblings increases (Coward and Dwyer 1991, Sloan, Picone, and Hoerger, 1997; Couch, Daly, and Wolf, 1999; Neuharth and Stern, 2000). In addition, Holmes and Van Houtven (2002) find evidence that a child who does not expect any of her siblings to provide care is more likely to provide care.

Related to the presence of siblings, sociological theories of socialization in the family suggest that birth order may also be an important determinant of whether or not a child provides care. These theories contents that first-born children are socialized to

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relationship between marital status and the probability that a child provides care.

[8] They use a child's gender, marital status, birth order, and a parent's health status as instruments

adopt traditional roles by their parents. The complete attention of parents leads first born children to be "more adult-oriented, attitudinally more traditional, more likely to agree with their parents, and likely to internalize parental aspirations" (Edwards and Klemmack, 1973 p.619). Rossi (1965) goes further and suggests that parents socialize first born sons and daughters differently. While first born sons are encouraged to develop a self-image for the world outside the family in accordance with parents' expectations, first born daughters are expected to focus on her roles within the family. These theories of socialization suggest that first born children, especially daughters, should be more likely to act as caregivers for disabled parents. Empirical results, however, find evidence that oldest daughters are less likely to provide care (Stern, 1995; Engers and Stern, 2000). Alternatively, McGarry (1998) finds that oldest sons are more likely to provide care and the impact of being the oldest daughter is not statistically significant.

While not as extensive as the literature investigating who provides care, several studies also examine the characteristics of who receives care. The results from this research suggest that parents are more likely to receive care from children if they lack alternative care options and have more severe disabilities. As one might expect, the availability of alternative care providers decreases the probability that an elderly person receives care. Alternative care providers include a spouse or the financial means of purchasing formal care. Studies consistently find that the probability of receiving care is lower for married disabled parents (Stern, 1995; McGarry, 1998; Hiedemann and Stern, 1999; Neuharth and Stern, 2000; Engers and Stern, 2000). While few studies have good measures of wealth and income, there is evidence that the probability of care is higher among elderly with low educational attainment. In this literature, education levels are

assumed to be proxy variables for wealth. While early studies found a positive relationship between education and receiving care, more recent research consistently finds a negative relationship (Crimmins and Ingegneri, 1990; McGarry, 1998; Hiedemann and Stern, 1999; Engers and Stern, 2000). Stern (1995) did not, however, find a statistically significant relationship between these two variables.

The extent of a parent's disability may also influence the probability of receiving care. Disability status is usually determined by whether a parent needs assistance performing activities of daily living (ADL) and instrumental activities of daily living (IADL).[9] McGarry (1998) finds evidence that an additional IADL limitation increases the probability that an elderly household receives care, however the impact of an additional ADL limitation is not statistically significant. Two other articles indirectly examine the impact of ADL limitations on the probability that a household receives care from a child by estimating the relationship between limitations and the probability of living alone. The alternative to living alone is living in a nursing home or receiving care from children. Hiedemann and Stern (1999) find that the coefficient associated with needing help bathing decreases the probability of living alone, but the coefficients on other ADL limitations are not statistically significant. Engers and Stern (2000), however, find that all ADL limitations are negatively related to the probability that a disabled elderly parent lives alone. These two studies provide evidence that ADL limitations increase the probability of living in a nursing home and receiving informal care from children.

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[9] ADL limitations include: walking across a room, dressing, bathing, eating, getting in and out of bed, and toileting. IADL limitations include: preparing meals, shopping for groceries, making telephone calls, taking medications, and managing money/personal finances.

A parent's gender and race are often included as covariates in models estimating the probability that an elderly disabled person receives care. Mothers are more likely to receive care relative to fathers (Stern, 1995; McGarry, 1998; Hiedemann and Stern, 1999; Neuharth and Stern, 2000). The results regarding race, however, are mixed. Speare and Avery (1993) find that black parents are more likely to receive care, while Stern (1995) and McGarry (1998) find the opposite result.

As this literature review demonstrates, the characteristics of children who are likely to provide care and the characteristics of parents who are likely to receive care are well established. Little research, however, has examined parents' expectations about future care from children and no research has evaluated the impact of inaccurate predictions of elderly parents' expectations about future care. As discussed earlier, this is an important subject because parents may make consumption and savings decisions based on these expectations. Consequently, the accuracy of their predictions may impact the economic and psychological well-being of elderly adults after the onset of a disability.

While economists have not examined the informal care expectations of elderly parents, the gerontology literature includes one article that addresses this issue. Peek, Coward, Peek and Lee (1998) examine a longitudinal sample of non-institutionalized persons aged 65 and older living in four northern counties of Florida. The authors limit the sample to individuals who need assistance with at least one ADL or IADL in all waves of the survey. They measure future care as the number of times a respondent indicates that she will turn to a child when she needs to talk, needs transportation to the doctor, needs help paying a medical bill, or needs someone with whom to live due to failing health. The questions regarding future care are asked in the first wave of the

survey. These authors measure the amount of care received as the total number of activities for which the elderly person reports receiving care during three consecutive interviews (conducted six months apart).

Using a weighted least-squares model, the authors find that expecting future care from children is positively and statistically significantly related to receiving care from children. There are two problems with the design of the analysis. First, the survey asks respondents about potential future help at a time when respondents already need help. Presumably, these respondents adjust their original expectations to reflect whether or not they currently receive or previously received care from their children. Consequently, the coefficient on expected care is likely to be upwardly biased. In addition, the measures for anticipated care and received care are different. The former is based on general forms of care, whereas the latter is based on assistance with specific ADL and IADL limitations. These issues cast doubt on the validity of the results.

**B. Data Description**

To investigate elderly parents' expectations about future care from children, the accuracy of their predictions, and the economic and psychological impact of inaccurate predictions, a data set must include several key features. First, the data must include information on non-disabled elderly parents' expectations about future informal care from children. Second, the data must also include child and parent characteristics that are likely to be correlated with parents' expectations about future care. These characteristics are likely to be the same characteristics that are correlated with the true probability of receiving care after the onset of a disability. Third, the data set must be longitudinal.

The elderly persons who report their expectations about future care must be interviewed again after the onset of a disability to investigate the accuracy of their expectations. Finally, information about the elderly person's economic and psychological well-being after the onset of a disability must also be available. This data is required to assess the impact of inaccurate predictions. The Study of Assets and Health Dynamics among the Oldest Old (AHEAD) meets all of these requirements.

The AHEAD survey is a nationally representative longitudinal survey of 6,047 elderly households initially conducted in 1993 with follow-up surveys in 1995, 1998, and 2000.[10] Each surveyed household contains at least one non-institutionalized person born before 1924. This person and her spouse/partner, if present, are interviewed. The survey gathers information on each respondent's health status and the structure and characteristics of the household's family including income and wealth. Respondents report on their current health condition, medical history, health care usage, and insurance coverage. The survey also collects detailed information about the household's financial status including income, assets, homeownership, life insurance policies, pensions, and interfamilial transfers. Each household provides the name and birth order for each for their children, regardless of whether the child lives in the elderly person's home. In addition to basic age information, each household also provides demographic data for each of their children and all other persons living in the household's home. Each of the follow-up surveys collects information about current health and financial status and changes that occurred since the previous wave. The follow-up survey also updates the demographic information for current household members and all children.

[10] Beginning in 1998, the AHEAD sample was combined with the HRS sample for surveying purposes.

The analyses that follow are performed at the household level for several reasons. First, within married households, decisions about current and future care affect both spouses and therefore are likely to be made jointly. Second, married households that require care confront the same set of potential helpers. Third, if both spouses are included in a regression analysis, the errors will be correlated leading to underestimated standard errors. Finally, the survey questions used to assess whether a household expects future care necessitates a household level analysis. Chapter 3 discusses the survey questions in detail.

Throughout this dissertation, an elderly person is classified as disabled if she requires assistance with at least one activity of daily living (ADL) or instrumental activity of daily living (IADL). The survey inquires about six ADL limitations: walking across a room, dressing, bathing, eating, getting in and out of bed, and toileting. Requiring assistance with an ADL is defined as getting help most of the time to perform the ADL, requiring equipment to perform the ADL (only applies to walking and getting in and out of bed), or having difficulty performing the ADL without help. The survey also collects information for the following IADL limitations: preparing meals, shopping for groceries, making telephone calls, taking medications, and managing money/personal finances. A respondent requires assistance with an IADL if she is unable to complete the IADL without help or never attempts the IADL due to health problems. Given that this analysis is performed at the household level, a household is designated as disabled if either spouse in a married household requires assistance with one or more ADL or IADL limitations.

Chapter 3 examines what characteristics the non-disabled elderly households incorporate when assessing the probability that they will receive care from children in the

future if needed. Parents should include characteristics that are statistically significantly related to the probability that a disabled household actually receives care. To address these questions, I use data from the 1993 panel of the AHEAD survey after I implement several sample restrictions.

If a parent cannot recall a child's gender, that child is unlikely to be involved in the parents' lives and therefore is not a viable care provider. Consequently, I omit children for whom gender is missing. This restriction omits 240 children from the 1993 analysis, approximately 1.5 percent of the child sample. At the household level, I limit the sample to households reporting at least one living child for whom gender is reported because the research questions specifically address informal care from children. This restriction omits 991 households. Because a married household's disability status requires the disability status of both spouses and individual disability status is only available if the respondent completes an interview, married households with a missing spouse interview are omitted from the analysis. The restriction omits an additional 91 households. Finally, whether or not a household anticipates future care from a child is based on a series of questions asked of each non-disabled respondent. These questions will be discussed in detail in Chapter 3. Due to an error in the surveying process, however, these questions were erroneously skipped for some non-disabled respondents. This analysis omits an additional 66 households in which one or both non-disabled respondents were not asked the questions about future care providers. The final 1993 sample used in Chapter 3 consists of 4,899 households.

In Chapter 4 I examine the accuracy of parents' predictions and the implications of inaccurate predictions. To address these issues I use data from three follow-up

surveys. In each wave, children with missing information on gender are omitted for the reasons described above. In addition, households without children are also omitted. Since these chapters examine the accuracy of parents' predictions, the samples in each follow-up year are limited to households that were not "disabled" in 1993, had complete interviews in all waves, and were asked about future care providers in 1993. In addition, households that separated, divorced, or remarried after 1993 are omitted from the analysis because the household predictions in 1993 may not apply to households in which spouses have changed. The sample sizes for each wave are explained in more detail in Chapter 4.

## 3. Who Do Parents Think Will Help and Who Actually Helps?

In the previous chapters, we documented the large number of seniors who already receive informal care from their children or other family members and the high fraction of people who can expect to need this care at one point in their life. Economists conjecture that households base their consumption and savings decisions on current information and expectations about the future. Expectations about future care from children are potentially important when parents make savings decisions due to the high cost of formal care. Parents may save less or drawn down savings faster if they anticipate that their children will provide informal care in the future. Likewise, parents may transfer resources to children in order to encourage them to provide informal care. Consequently, the economic well-being of parents after the onset of a disability may depend on the accuracy of these predictions. Since parents have invested time, resources, and emotions into their children, the accuracy of their prediction may also have psychological repercussions.

Despite the potential importance of informal care, little research has examined parents' expectations about future care from children. This chapter addresses this topic by assessing the child and parent characteristics that influence the probability that non-disabled households anticipate future care from children.[11] First, I estimate what characteristics are related to the probability that disabled households actually receive care. I then examine whether parents incorporate these same characteristics when they assess whether their children will provide future care.

Previous research on informal care has concentrated on the characteristics of the caregivers. Are they more likely to be female? Do they live close to the disabled parent? This research departs from this work by focusing on elderly households. Are households with more daughters more likely to expect care? Are households with more children living close more likely to receive care? Since I am interested in the well-being of the disabled elderly rather then the caregivers, the characteristics of the elderly household provide the relevant information.

The first section of this chapter describes the percentage of non-disabled households that anticipate care and the percentage of disabled households that receive care. Given the importance of a child's gender and opportunity costs in determining the probability that a child provides care, I also examine these percentages for households with different types of children. For example, does the percentage of households anticipating care vary by how many children a household has? In the second section, I examine this issue in a multivariate context by using a probit model to estimate the probability that a non-disabled household anticipates care and the probability that a disabled household receives care. In the final section, I restrict the sample of non-disabled households to those anticipating future care from a child. I then estimate a conditional logit framework to evaluate the child characteristics that influence the probability that a particular child is named as the future care provider among households that predict care from children. For comparison, I use the same model to estimate the probability that a child acts as the primary care provider for disabled households that receive care from children.

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[11] As mentioned in Chapter 2, this analysis is conducted at the household level. A household is classified

The 1993 AHEAD panel provides data for these analyses. The sample used in this chapter consists of 4,899 elderly households with at least one child. Approximately 49 percent of these households do not need assistance with ADL or IADL limitations, while the remaining households include at least one elderly person who requires assistance with at least one limitation.

Individuals who do not require ADL or IADL assistance at the time of the 1993 survey are asked about potential future care providers.[12] Specifically, the survey asks, "Suppose in the future, you [or your spouse/partner] needed help with basic personal care activities like eating or dressing. Do you have relatives or friends [besides your spouse/partner] who would be willing and able to help you over a long period of time?" The survey also asks whether this anticipated care provider is a relative or someone else. The coding of these data placed children, children's spouses, and grandchildren in the same category. Throughout this dissertation, I will refer to an individual or household that predicted care from someone in this category as predicting care from a child. If the anticipated care provider is in this category, the respondent also identifies the name of that child.[13]

As mentioned earlier, the fact that the question includes the phrase "you (or your spouse) needed help" necessitates a household level analysis. Consequently, I create a household level variable indicating whether the household anticipates future care from a

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as disabled if at least one elderly respondent reports needing assistance with at least one ADL or IADL.

[12] The survey questionnaire indicates that respondents who do not need help with ADLs or IADLs should be asked about potential future care providers. The data, however, reveal that a problem occurred in the CADI system because some respondents who were supposed to be asked about future care providers were not actually asked these questions. Consequently, the analysis of non-disabled households in 1993 only includes households in which at least one spouse was asked the question about future care.

child. If either spouse in a married household predicts that a child will provide future care, that household is coded as predicting future care from a child, regardless of the other spouse's response. This coding strategy assumes that a positive response from one spouse contains information relevant to the other spouse's expectation. Fifty-five percent of married households coded as predicting future care from a child include two spouses that reported expecting care.

This question, however, is not ideal for several reasons. First, whether a parent expects future care from a child may depend on the type of care the parent anticipates needing. While the question mentions eating and dressing, these tasks are far less onerous than other ADLs such as helping a parent use the toilet and far more onerous than IADLs such as helping prepare food. Different parents may have different types of assistance in mind when they answer this question. In addition, the assistance the parent needs in the future may differ from the type of care the parent was anticipating when she answered the question. Second, the interpretation of this question for married respondents is unclear. While the question specifies a caregiver other than a spouse, it is not clear whether the question is asking about future caregivers who will provide care in addition to a spouse or as an alternative to spousal care. In addition, the question asks about care for the respondent or spouse, which allows for different interpretations. One respondent may answer in reference to care for himself while another may answer in reference to care for his spouse. An ideal question would specify what kind of assistance is needed (ADL versus IADL assistance), clarify whether the help would be in addition to or in absence of spousal care, and would only ask about help for the respondent. In this

[13] If the anticipated helper is a spouse or grandchild, the respondent identifies the child related to the

analysis, however, I assume respondents interpret this question such that they name a future caregiver who will provide care for any ADL or IADL, provide care in addition to any spousal care received, and provide care to either spouse in a married household.

Individuals who report needing help with an ADL or IADL are asked whether they receive assistance performing each task. If the individual receives assistance, the survey also collects the name and relationship of the helper who assists most often. Again, a married household is coded as receiving help from a child if either spouse reports receiving help from a child.

**A. Expected Care and Actual Care**

Table 3.1 illustrates the percentage of non-disabled households in 1993 that predict future help from children (column 1) and the percentage of disabled households in 1993 receiving care from children (columns 2 and 3). Column 2 illustrates the percentage of all disabled households that receive at least some care from a child. The sample of households used in the third column, however, excludes married households in which only one spouse needs assistance.

As we see in Table 3.1, approximately half of non-disabled households anticipate future care from their children. This prediction may be overly optimistic. Among households in which at least one respondent requires assistance, only 33 percent receive at least some care from a child. Among households in which all elderly respondents require assistance, 47 percent receive some assistance from a child. These figures

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proposed helper.

suggest that elderly parents may overestimate the likelihood that their children will provide care.[14]

Table 3.1 also provides the percentage of households predicting and receiving care by family size. The percent of non-disabled households that predict future care from children increases as the number of children increases. Among households with only one child, 36 percent predict future help from children, while 63 percent of households with four or more children predict future care. This result is not surprising as each additional child is an alternative care provider. The difference in the percentage of disabled households actually receiving care is not as dramatic. Forty-two percent of disabled households with only one child receive care, whereas 57 percent of disabled households with four or more children receive care. These results suggest that parents may overestimate the importance of the number of children when predicting of future care.

Table 3.1 also allows us to examine the influence of the number of daughters. Chapter 2 demonstrated that women are more likely than men to provide care to ailing family members**.** If parents are aware that female children are more likely to provide care, non-disabled households with a greater number of daughters will be more likely to expect care relative to households with fewer daughters. Similarly, it is reasonable to expect that disabled households with a larger number of daughters will have a higher probability of receiving care. While Table 3.1 provides evidence that parents believe the

[14] The sample used in the second column of Table 3.1 may not be a good comparison group because the question about future care providers excludes the possibility of care from spouses. Consequently, I will focus on the third column as a more conservative estimate of the percentage of households receiving care from children.

number of daughters is a determinant of the likelihood of receiving care, the importance of daughters in determining the probability of receiving care is less clear.

One way to examine the importance of daughters is to compare the percentage of households anticipating care among households with varying numbers of daughters and varying number of sons. Thirty percent of non-disabled households without daughters predict future help from children, while 67 percent of households with three or more daughters predict future help. Conversely, the percentage of non-disabled households anticipating care does not vary as greatly by the number of sons. Fifty percent of non-disabled households without sons predict future care, while 60 percent with three or more sons predict future care. These results suggest that non-disabled parents believe that gender is related to the probability that children will provide care in the future.

Turning to disabled households, 42 percent of households without daughters receive care, whereas 57 percent of households with three or more daughters receive care. Similarly, 44 percent of disabled households without sons receive care from children and 59 percent of households with three or more sons receive care. The probability of receiving care increases by a similar magnitude as the number of daughters and the number of sons increases. This result suggests that the probability of receiving care rises due to a larger number of children, regardless of their gender. While previous research found a strong correlation between being female and providing informal care, the results shown in Table 3.1 suggest that the number of daughters does not affect on the probability that a household receives care from a child.

The above results indicate that parents may overestimate the importance of daughters when predicting whether children will provide future care. Examining

households with all daughters relative to households with all sons substantiates this conclusion. Among non-disabled households, 50 percent of households with all daughters predict future care from children, whereas only 30 percent of households with all sons predict future care. The comparison among disabled households, however, is much less striking. Among disabled households, 44 percent of households with all daughters and 42 percent of households with all sons receive care.

The literature review in Chapter 2 also demonstrates the important role of opportunity costs in determining whether an adult child provides care to their elderly parents. If parents recognize the importance of opportunity costs, non-disabled households with a larger number of children with low opportunity costs should be more likely to predict future care from children. Similarly, if these previous results at the child level hold true at the aggregate level, disabled households with a larger number of children with low opportunity costs should be more likely to receive care from children. The simple comparisons in Table 3.1 suggest that opportunity costs may be important when determining whether children actually provide care, however there is less evidence that parents consider children's opportunity costs when assessing the availability of future caregivers.

The opportunity costs of providing care to disabled parents are theoretically lower for children who live close to their parents, do not work, are not married, and do not have children of their own. Among non-disabled households, 36 percent of households without a child living within 10 miles predict future care from children and 72 percent of households with three or more children living close predict care. Similarly, 46 percent of non-disabled households without children who do not work predict care, whereas 66

percent of households with two or more children who do not work predict care. These results provide evidence that parents consider children's opportunity costs when assessing the likelihood that they will receive future care. Among disabled households, only 17 percent of households without a child living close receive care, whereas 62 percent of households with three or more children living close receive care. In addition, 37 percent of disabled households without children who do not work receive care, while 66 percent of households with two or more children who do not work receive care. These results suggest that parents may underestimate the importance of children with low opportunity costs when formulating predictions about future care.

**B. Characteristics that Influence Expectations and Realizations of Informal Care**

This dissertation examines the accuracy of elderly parents' expectations concerning future informal care from children. Although economists have developed many theoretical models of uncertainty, they have had very little to say about how people actually form expectations. There is no economic model that suggests how expectations are formed when the event is personal interaction with a family member such as elder care. In contrast, social psychologists do address how attitudes, beliefs, and expectations about other people are formed. Berger, Fisek, Norman, and Zelditch formulated the primary theory related to expectations in 1977: The Theory of Expectation States. Participants, in this case elderly parents and their adult children, are differentiated based on status characteristics such as position in the family, age, birth order among children, and gender. Cultural and social norms lead participants to associate characteristics with different roles and tasks. Parents formulate their expectations for each child's future

performance -- the likelihood that a child will provide care in the future -- based on these status characteristics. For example, social norms/gender roles suggest that daughters will act as caregivers. Parents' beliefs about status characteristics associated with caregiving in the larger world around them are essentially transposed to people in their family.

Driskell (1982) hypothesize two types of status characteristics: diffuse and specific. Diffuse characteristics yield general expectations. Gender is an example of a diffuse characteristic. When assessing the future behavior of a child, parents recognize the gender of the child and the fact that women are more likely to be employed in caregiving occupations and wives rather than husbands are more likely to stay at home to raise children. Consequently, parents conclude that a daughter is more likely to provide care in the future. Alternatively, specific characteristics may only be associated with expectations about certain tasks. For example, a child who is employed as a nurse may be expected to care for aging parents because the child's occupation involves caregiving. On the other hand, knowing that a child is employed as a bus driver does not illicit any expectations about caregiving.

More recently, social psychologists have expanded the hypothesized components that determine expectations to include sentiments. "A sentiment is an affective relation between two actors … composed of various types of social ties such as love/hate and liking/disliking." (Shelly p74). An individual is related to another person by the person's qualities, such as being courteous or being pessimistic, and the person's capacities, such as being able to fix things or intelligence. Sentiments, such as liking or disliking someone, are constructed based on qualities. Information about capacities is then assumed based on sentiments. Based on Heider's consistency principle (1958), a parent

who has positive sentiments toward a child will positively assess the capabilities of that child and formulate idealized expectations about the future behavior of that child. Alternatively, if a parent has negative sentiments toward a child, she may underestimate the child's capabilities when formulating expectations (Shelly, 2001). Although the empirical models in this dissertation control for all available status characteristics of the elderly households and their children, the AHEAD data does not provide information about parents' sentiments towards their children.

While the previous section provides evidence that non-disabled parents may overestimate the importance of the number of daughters and underestimate the importance of their children's opportunity costs, these simple bivariate analyses do not control for other household characteristics. In this section, I employ a probit framework to control for other household characteristics and more rigorously examine the findings from the previous section. The goal of this chapter is to determine whether the household characteristics that parents incorporate when assessing whether child will provide future care from children are correlated with the true probability of receiving care. Since the outcome of interest is a dichotomous variable, I also use a probit model.

Equation 1 illustrates the basic probit model used to analyze the probability that non-disabled households anticipate care and the probability that disabled households receive care, where $\Phi$ represents the standard normal cumulative distribution function. $X_i$ includes the following variables: marital status of the household,[15] race, age of the oldest household member,[16] education level of the most educated household member,

[15] The marital status variable is divided into two variables based on whether one or both spouses have ADL or IADL limitations.

[16] The model includes the age of the oldest disabled spouse when analyzing married households.

type of housing payment,[17] income, and the number of children living within 10 miles of the elderly parents. To capture the impact of family size and gender composition, $X_i$ also includes the number of children and the number of daughters. The model estimating the probability that disabled households receive care also controls for the number of ADL limitations and the number of IADL limitations.[18] Table 3.2 presents the results from the two models estimating the probability of expecting care among disabled households and the probability of receiving care among disabled households. This format allows us to easily compare the statistical significance of the covariates across both models.

(1) $\Pr(Y_i = 1) = \Phi(\alpha + \beta X_i)$

I estimate four additional models for each sample. These models, shown in Tables 3.3 through 3.5, confirm that the results from the basic model are not sensitive to model specification. They also examine the statistical significance of other covariates that previous research found to be important. The first alternative specification contains measures of opportunity costs other than proximity to parents. These variables include: number of unmarried children, number of children without children of their own, and number of children not working. This specification also includes an indicator for whether the household's oldest child is a daughter. While this is not an opportunity cost measure, this child characteristic has received attention in previous work (Stern 1995; McGarry

[17] Type of housing payment is divided into a set of indicator variables for owning a home, renting a home, living in a home deeded to someone else, or missing. Renting a home is the excluded category.

[18] The disability level of the household is captured with two variables: the number of ADL limitations for which the household needs assistance and the number of IADL limitations for which the household needs assistance. If the household contains two respondents who need assistance, the number of ADL (IADL) limitations equals the sum of the ADL (IADL) limitations for both spouses. The model is also estimated using the interaction between these two variables. The marginal effect on the interaction is insignificant and small, therefore it is not included in the final specification.

1998; and Engers and Stern 2002). The results from these models are displayed in Table 3.3.

Table 3.3 also includes the results from an additional model that can only be estimated for households that currently need assistance. The cost to children of providing care depends, in part, on whether children can easily schedule a time to administer assistance. To test whether ease of scheduling is important, I regroup ADL and IADL limitations based on whether children can easily schedule time to provide assistance for each limitation. Based on this criterion, I classify all IADL limitations as schedulable limitations. Among ADL limitations, I also code bathing, eating, and dressing as schedulable. The remaining ADL limitations (toileting, getting in and out of bed, and walking) are designated as unschedulable. The last column of Table 3.3 provides the results from the model that excludes the number of ADL and IADL limitations and instead includes the number of schedulable and unschedulable limitations.

Table 3.4 provides the results from alternative specifications that include additional measures of parents' health status. Several structural analyses discussed in Chapter 2 examine the relationship between health status and the receipt of care. While the non-disabled parents cannot anticipate their future health status, their current health status may affect their expectations about future care from children. For example, parents who generally feel ill or suffer from a chronic illness may not yet need assistance with ADL or IADL, but their conditions may cause them to be more pessimistic about the future, decreasing the probability that they anticipate future care. Given that health is correlated with many of the control variables, excluding these measures may also lead to an omitted variable bias. To capture health status, I use two different specifications. The

first specification includes the self-reported health status of the least healthy household respondent and the second includes indicators for whether any household respondent has ever been diagnosed with one of six chronic diseases. These diseases include: cancer, heart disease, high blood pressure, lung disease, diabetes, and stroke.

As seen in Chapter 2, previous theoretical and empirical research finds a positive relationship between the probability that a child provides informal care and the receipt of inter-vivos transfers. To account for previous and future transfers from parents to children, the model in Table 3.5 includes the following variables: an indicator for whether the elderly household gave $5,000 or more to any of their children in the last 10 years, an indicator for whether the elderly household deeded a house to any of their children in the last 10 years, an indicator for the elderly household naming their children in their will, and an indicator for whether a grandchild ever lived in the elderly household's home for a year or longer.

$$(2) \qquad ME_k^C = \left.\frac{\partial \Phi(X\beta)}{\partial X_k}\right|_{X=\overline{X}} = \varphi(\overline{X}\beta)b_k$$

$$(3) \qquad Var\left(ME_k^C\right) = G\varepsilon G' \quad \text{where}: \quad G = \varphi(\overline{X}\beta)\left[I - (\overline{X}\beta)(\beta\overline{X})\right]$$

I present the results from each model as marginal effects for ease of interpretation. The marginal effect of a continuous covariate k ($ME_i^C$) and the corresponding variance are calculated based on equations 2 and 3 (StataCorp). $\Phi$ represents the standard cumulative normal distribution function and $\varphi$ represents the probability density function for the standard normal distribution. X is the (1 x m) vector of covariates and $\beta$ is the

corresponding (m x 1) vector of parameter estimates. The variance-covariance matrix associated with β is denoted by ε.

$$(4) \qquad ME_j^D = \Phi(\overline{X}_1\beta) - \Phi(\overline{X}_0\beta)$$

$$(5) \qquad Var\left(ME_j^D\right) = g\varepsilon g' \quad \text{where}: \quad g = \varphi(\overline{X}_1\beta)\overline{X}_1 - \varphi(\overline{X}_0\beta)\overline{X}_0$$

Similarly, the marginal effect of a dichotomous covariate j ($ME_j^D$) and the corresponding variance are calculated using equations 4 and 5 (StataCorp). For this calculation, $\overline{X}_1$ and $\overline{X}_0$ equal $\overline{X}$ except for the $j^{th}$ discrete element of $\overline{X}_1$ and the $j^{th}$ discrete element of $\overline{X}_0$. The $j^{th}$ element of $\overline{X}_1$ equals one and the $j^{th}$ element of $\overline{X}_0$ equals zero.

**i. Results from the Basic Model**

Table 3.2 provides the basic probit model results. The first column displays the marginal effects and corresponding standard errors associated with the probability that a non-disabled household predicts future care from children in 1993. The second column illustrates the same statistics for the model estimating the probability that disabled households in 1993 receive care.

The table confirms that non-disabled parents may overestimate the importance of the number of daughters when assessing the availability of future care providers. As seen in the first column, an additional daughter increases the probability of predicting future care from children by 7 percentage points, a 14 percent increase in the average probability. The second column indicates, however, that an additional daughter is not

statistically significantly related to the probability that a disabled household actually receives care. Non-disabled parents more accurately assess the importance of the number of children living within a 10-mile radius. An additional child living close increases the probability that a non-disabled household anticipates future care by 9 percentage points (a 17 percent increase). This is very similar to the marginal effect of an additional child living close on the actual increase in the probability that a disabled household receives care. That increase is 8 percentage points, a 25 percent increase.

Table 3.2 also illustrates two interesting differences between factors that parents think are important indicators of receiving care and factors that actually influence the probability of receiving care.[19] Living in a home deeded to someone else increases the probability that a non-disabled household predicts care from a child by 19 percentage points (a 38 percent increases). Since a majority of deeded homes are deeded to children, this marginal effect may arise because parents assume that their inter-vivos transfers to children will be "repaid" in the form of future care. The marginal effect of living in a deeded home on the probability that a disabled household receives care is not, however, statistically significant. This marginal effect suggests that children are not more likely to provide care if parents provided financial transfers in the past, contradicting previous work discussed in Chapter 2. These results together suggest that while parents may view inter-vivos transfers as a commitment device, inter-vivos transfers do not increase the true probability that parents receive care.

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[19] The table also shows an inconsistency in the marginal effect of being married on the probability that non-disabled households predict future care and the probability that disabled households receive care. The positive correlation among non-disabled households may be an artifact of the coding of the indicator for predicting future care from child. A married household is coded as predicting future help if either spouse anticipates future care from children. The negative relationship between being married and receiving care

The marginal effects associated with education and income provide evidence that parents may underestimate the importance of their socioeconomic status when assessing the likelihood of receiving future care from children. Table 3.2 shows that neither low educational attainment nor low relative to high income are statistically significantly related to the probability that a non-disabled household anticipates future care from children. Among disabled households, however, the marginal effects of both variables are statistically significant and economically meaningful. Households in which the most educated spouse did not complete high school are 8 percentage points more likely to receive care relative to households with a high school graduate (a 23 percent increase in the average probability). In addition, having an annual income less than $10,000 increases the probability of receiving care from a child by 10 percentage points (a 29 percent increase) relative to households earning more than $20,000 annually. These results suggest that children are more likely to provide care to disabled parents when their parents do not have the means of purchasing formal care. Non-disabled parents, however, do not consider the importance of their socioeconomic status when appraising the likelihood that children will provide care in the future.

The final two rows of Table 3.2 provide the marginal effects of the number of ADL and IADL limitations on the probability that disabled households receive care from their children. An additional IADL limitation increases the probability of receiving care by 13 percentage points (a 41 percent increase), whereas the effect of an additional ADL limitation is not statistically significantly. These results are consistent with the previous research discussed in Chapter 2. Because providing assistance with IADL limitations is

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has been documented in previous research and is probably due to the fact that spouses can easily act as caregivers for married disabled parents.

less onerous and more easily scheduled, this positive marginal effect may reflect the willingness of children to provide care when the costs are low.

**ii. Results from Alternative Specifications**

The first two columns of Table 3.3 display the marginal effects for the models that include additional measures of opportunity costs and an indicator for having an oldest child who is a daughter.[20] The results indicate that none of these additional variables are statistically significantly related to either the probability that non-disabled households anticipate care from their children or the probability that disabled households receive care from children.[21] While previous research at the caregiver level finds that unmarried children, children without children of their own, and children who do not work are more likely to provide care to disabled parents, at the aggregate household level these characteristics are not related to the probability that a disabled household receive care from children. The final section of this chapter reexamines the opportunity costs of children using an alternative sample and model.

The model in the third column of Table 3.3 estimates the probability that disabled households receive care from children. The specification, however, regroups ADL and IADL limitations to address the costs to children associated with providing care. The results support the conjecture that lower costs to children increase the probability that a household receives care. The marginal effect of an additional schedulable limitation

[20] These variables that measure opportunity costs include: the number of unmarried children, the number of children without children of their own, and the number of children who do not work.

[21] The marginal effect of having a daughter as the oldest children is not statistically significantly related to the probability that non-disabled elderly parents anticipate care or the probability that disabled households receive care. This result is consistent with previous research.

increases the probability of receiving care by 9 percentage points (a 28 percent increase). An additional unschedulable limitation, however, decreases the probability of receiving care by 3 percentage points (a 10 percent decrease).

The models in Table 3.4 include additional measures of parents' health status. While non-disabled households do not meet the ADL or IADL requirements to be designated disabled, households with poorer health may be more pessimistic about the future and therefore may be less likely to anticipate future care from children. Disabled parents with worse health may be more likely to receive care because parents may complain louder and longer when in poorer health, thus causing children to oil the squeaky wheel.

The models in the first two columns of Table 3.4 include dummy variables for self-reported health status: excellent/very good, good, fair, and poor. The omitted category is excellent/very good health. For married households, the self-reported health status of the least healthy individual is included. As seen in the first column, reporting fair health decreases the probability that non-disabled households predict future care from children by 11 percentage points (a 21 percent decrease) relative to households reporting excellent/very good health. Similarly, reporting poor health decreases the probability of predicting future care from children by 12 percentage points (a 24 percent decrease) relative to households reporting excellent/very good health. This negative marginal effect may reflect a general pessimism among households that feel ill. The second column of Table 3.4 indicates that poor self-reported health status increases the probability that disabled households receive care from children by 10 percentage points (a 32 percent increase) relative to households reporting excellent/ very good health. This

result provides evidence that parents are more likely to receive care when they confront extensive health challenges.

The last two columns of Table 3.4 include a different measure of health status: indicators for whether household respondents have ever been diagnosed with one of six chronic diseases.[22] Only lung disease has a statistically significant impact on the probability that a disabled household predicts future care from children. On average, households with at least one respondent with lung disease are 9 percentage points less likely to predict future care from children. This negative marginal effect may reflect the fact that these households do not currently receive help for this illness and therefore they do not anticipate future care. Among disabled households, only diabetes has a statistically significant marginal effect. Having diabetes increases the probability of receiving care from children by 6 percentage points. This positive marginal effect is reasonable because these respondents are likely to need daily insulin shots for their illness. The results in the last two columns support the findings in the first two columns of Table 3.4: non-disabled parents with poorer health are less likely to anticipate care, while disabled parents in poorer health are more likely to receive care.

The model in Table 3.5 examines the importance of previous and future transfers from parents to children.[23] The results in Table 3.2 suggest that parents overestimate the importance of deeding their home to a child. The marginal effect of living in a deeded home increases the probability that a non-disabled household anticipates care, but it does

[22] These diseases include: cancer, a heart condition, high blood pressure, lung disease, diabetes, and stroke.

[23] These variables include: an indicator for whether the elderly household gave $5,000 or more to any of their children in the last 10 years, an indicator for whether the elderly household deeded a house to any of their children in the last 10 years, an indicator for the elderly household naming their children in their will, and an indicator for whether a grandchild ever lived in the elderly household's home for a year or longer.

not have a statistically significant impact on the probability that a disabled household receives care. Previous literature discussed in Chapter 2, however, finds statistically significant positive relationship between inter-vivos transfers and the probability that a child provides care to a disabled parent.

As seen in the first column of Table 3.5, this multivariate analysis indicates that none of these additional measures of transfers from parents to children are statistically significantly related to the probability that non-disabled households anticipate care. Among disabled households, however, the marginal effect of providing care to grandchildren increases the probability of receiving care by 3 percentage points, an 8 percent increase in the average probability. This result indicates that parents may underestimate the importance of previous transfers of time to children when assessing the availability of future care providers.

The analysis in this section confirms that parents overemphasize the importance of an additional daughter when assessing the likelihood that children provide future care. This section, however, contradicts the findings from the bivariate analysis in the first section regarding the opportunity costs of children. While the bivariate results indicate that children may underestimate the importance of opportunity costs, this multivariate analysis finds that parents understand the importance of opportunity costs when making predictions about future care. An additional child living close is statistically significantly related to the probability of anticipating care and the probability of receiving care. The other measures of opportunity costs, however, are not statistically significant in either model. The next section uses an alternative model to examine opportunity costs at the child level.

This section also reveals several additional inconsistencies between parents' expectations about future care and the realization of care. First, parents may underestimate the importance of their low socioeconomic status. Although low education and low income increase the probability of receiving care, they are not related to the probability of anticipating care. Second, parents may overemphasize the importance of deeding a home to a child when formulating expectations about future care. Finally, there is evidence that parents may underestimate the importance of previously caring for grandchildren when estimating the availability of future care providers. The marginal effect of living with a grandchild for a year or more is not statistically significantly related to the probability of anticipating care, but it is positively related to the probability of receiving care.

**C. From Which Child Do Parents Expect Care and Who Actually Provides It?**

In Chapter 2, we noted that previous research has established that children with lower opportunity costs of time are more likely to provide informal care to parents. The analysis in the two previous sections aggregates child characteristics at the household level and does not reveal statistically significant effects of children's opportunity costs when estimating the probability that a household receives care, with the exception of the number of children living close to their parents. For example, a greater number of children who do not work does not increase the probability that a disabled household receives care, however a child is more likely to provide care if she does not work.

To explore how child characteristics influence which child is expected to provide care and which child actually provides care, I employ a conditional logit model. This model incorporates the fact that potential child caregivers for an elderly household are

clustered into sibling groups. One drawback of this model is that the sample of non-disabled households are restricted to those that anticipate future care from a child and the sample of disabled households is restricted to those that receive care from a child.

The conditional logit model can be motivated by utility theory. The following description is based on the model estimating the probability that a child is named the future care provider, however it can be modified to apply to the model estimating the probability that a child acts as the primary care provider among siblings. I assume that a household expects to gain utility from receiving care from each child in the future. The household chooses a particular child as the future care provider if, and only if, the household anticipates the greatest level of utility from that child relative to the utility levels associated with each of their other children. Consequently, the probability that a particular child is chosen as the future care provider equals the probability that the utility associated with care from that child exceeds the utility associated with care from each of the child's siblings. The utility associated with care from a particular child is a function of both the child's observed and unobserved characteristics. This analysis includes the following child characteristics as control variables: gender, work status, marital status, home ownership, whether a child has children, proximity to parents, educational attainment, and indicators for being the oldest and youngest sibling.[24] The assumption regarding the distribution of the unobserved characteristics determines the type of

[24] A child's work status and whether the child lives within ten miles of his parents are potentially endogenous when estimating the probability that a child acts as the primary care provider. As discussed in Chapter 2, Stern (1995) corrects for this potential endogeneity through the use of instrumental variables. His instruments are the lagged values of these two variables from the prior period when the elderly parent did not require assistance. After correcting the potential endogeneity, he finds that the estimated impact of work status is not statistically different from zero and the impact of distance between a child and parent is lower in magnitude but still statistically significant. This analysis does not attempt to correct for the potential endogeneity.

discrete choice model. The conditional logit model assumes that the unobserved characteristics are distributed iid extreme value (Train).

Given the difficulty interpreting the estimated coefficients from the conditional logit model, I transform them into marginal effects. The predicted probability of being named the future care provider ($P_{n,j}$) is calculated using equation 6 where $\beta$ is the vector of parameter estimates. The subscript j refers to the $j^{th}$ child and the subscript n refers to the $n^{th}$ household. $X_{n,j}$ is the vector of child characteristics for child j in household n. The number of children in household n is represented by m.

$$(6) \qquad P_{n,j} = \frac{\exp(X_{n,j}'\beta)}{\sum_{l=1}^{m} \exp(X_{n,l}'\beta)}$$

Equation 7 provides the formula used to calculate the marginal effect. For example, to calculate the marginal effect of being female on the probability of being named the future care provider, the predicted probability of being named the future care provider ($P_d$) is estimated for each daughter in the sample. Next, a synthetic predicted probability is constructed by assuming that the daughter is a boy rather than a girl ($P^*_d$). The marginal effect of being female is estimated by averaging the difference between the original predicted probability ($P_d$) and the alternative predicted probability ($P^*_d$) across all daughters in the sample (D).

$$(7) \qquad \text{Marginal Effect} = \frac{1}{D} \sum_{d=1}^{D} (P_d - P_d^*)$$

Since the marginal effect is a non-linear function of the parameter estimates, I use the delta method to calculate the standard error associated with each marginal effect based on equations 8, 9, and 10. In these equations, $\varepsilon$ is the estimated variance-

covariance matrix corresponding to β. G is the derivative of the marginal effect with respect to β, derived by equation 9. Equation 10 is the formula for the derivative of predicted probability with respect to the $k^{th}$ element of β. The subscript d is an index for the child j in family n.

(8) $\text{Var(Marginal Effect)} = G' \varepsilon G$

(9) $$\frac{\partial ME}{\partial \beta} = \frac{1}{D} \sum_{d=1}^{D} \left( \frac{\partial P_d}{\partial \beta} - \frac{\partial P_d^*}{\partial \beta} \right)$$

(10) $$\frac{\partial P_d}{\partial \beta_k} = \frac{\partial P_{n,j}}{\partial \beta_k} = X_{k,n,j} P_{n,j} - P_{n,j} \left( \sum_{l \neq j}^{m} X_{k,n,l} P_{n,l} \right)$$

I replicate this procedure to determine the marginal effect and standard errors for each of the covariates except the indicators for the oldest and youngest sibling. Because a child in each household must always be designated as the oldest and another must be designated the youngest, the procedure to calculate the marginal effect of these covariates is slightly different. When calculating the synthetic probability of being named the future care provider, the true oldest is not coded as the oldest. Instead, the next oldest child in the household is designated as the oldest. In two children households, the birth order of the oldest and youngest children is switched. This same procedure is used to calculate the marginal effect of being the youngest child.

When estimating either the probability of being named the future care provider or the probability of acting as the primary care provider, the sample is limited to households with two or more children. Because each spouse in a married non-disabled household is asked about future care providers, some households may name two different children. When this occurs, one of the two children is randomly chosen as the future care

provider.[25] When estimating the probability that a child acts as the primary care provider, the child who provides the most care per week relative to her siblings is designated as the primary caregiver.[26] If the disabled respondent's spouse, other relative, or friend provides more care than that particular child, the child is still designated as the primary care provider for this analysis.

Table 3.6 provides the marginal effects and standard errors for the conditional logit models estimating the probability that a child is named the future care provider among children of non-disabled parents (column 1) and the probability that a child acts as primary caregiver among children of disabled parents (column 2). Consistent with the results in the previous two sections, there is evidence that parents may overestimate the importance of gender when assessing a probable future care provider. A daughter is 20 percentage points more likely to be chosen as the anticipated future care relative to a son. Among children with disabled parents, however, daughters are only 13 percentage points more likely to act as primary caregivers relative to sons.

The statistically significant relationship between gender and the probability of acting as the primary caregiver confirms the results from previous research at the child level. Numerous studies have found a large and statistically significant coefficient on being female when estimating the probability that a child provides care to disabled parents. The conditional logit model reveals that daughters are more likely to act as the primary care providers among households that receive at least some care from children. The probit model, however, suggests that having a greater number of daughters does not

[25] Both spouses name a specific child in 36 percent of married households that anticipated future care from a child. Among these households, 79 percent name the same child. Consequently, a child was randomly chosen between two named children in 21 percent of these married households.

increase the probability that a household receives care from a child. This difference arises because the models use two different samples. The probit model estimates the probability of receiving care from at least one child among all elderly households that need care. Conversely, the conditional logit model limits the sample to households that receive care from at least one child and then estimates the probability that a particular child acts as the primary caregiver.

The conditional logit models also include several measures of a child's opportunity costs, including time spent at work, caring for a spouse, caring for children, and maintaining a home. While wages are the ideal measure of opportunity costs, the AHEAD dataset does not collect information on children's incomes. I include a child's educational attainment as a proxy for wages. These models also include whether a child lives within 10 miles of the elderly household.

Working and caring for a spouse increase the cost to a child of providing care and should therefore decrease the predicted probability that a child provides care. The marginal effect of working on the predicted probability of being named as the future care provider is not statistically significant. But, working is negatively related to the predicted probability that a child acts as the primary care provider. This marginal effect is only 3 percentage points and it is only statistically significant at the 10 percent level. In addition, this estimate may be biased upward due to endogeneity.[27] These results suggest that parents may underestimate the importance of whether or not their children work when choosing an anticipated care provider. Similarly, the marginal effect of being

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[26] Chapter 2 provides a detailed description of how hours of care per week are calculated.

[27] Children who do not work or only work part-time may be more likely to provide care because they have more leisure time available. Alternatively, providing care may induce a child to reduce time spent in the labor market or quit altogether.

married on the probability that a child is named the future care provider is not statistically significant, whereas the marginal effect of being married is statistically significant and negative when estimating the probability that a child acts as the primary care provider. Being married decreases the predicted probability of acting as the primary care provider by 4 percentage points. These results suggest that parents may underestimate the relevance of a child's work and martial status when assessing a child's availability for providing assistance.

The theory of opportunity cost also suggests that owning a home should decrease the predicted probability of providing care due to the responsibilities associated with maintaining a home. Among children of non-disabled parents, owning a home increases rather than decreases the predicted probability of being named as a future helper by 4 percentage points. The effect, however, is only statistically significant at the six percent level. On the other hand, the marginal effect of owning a home decreases the predicted probability that a child acts a primary care provider, but the result is not statistically significant. These results suggest that parents may view home ownership as a signal of individual responsibility and financial stability that increases the child's ability to provide care.

As discussed previously, the cost to children of providing care is lowered when children live close. The previous section of this chapter provides evidence that parents accurately assess the importance of proximity when assessing the availability of caregivers. Table 3.6 provides additional support for this finding. Living within 10 miles of elderly parents increases the predicted probability that a child is named the future caregiver by 26 percentage points. Similarly, living within 10 miles of elderly parents

increases the predicted probability of acting as primary caregiver by 28 percentage points.

While Table 3.6 reveals statistically significant marginal effects of education on both the predicted probability of being named as the future caregiver and the predicted probability of acting as the primary caregiver, the sign of the effects only partially coincides with the theory of opportunity costs. Higher levels of education are associated with greater wages. Consequently, children with lower levels of education should provide care to their disabled parents. In these models, education is divided into three categories: less than a high school degree, a high school degree or some college coursework, and a college degree or more. Since the omitted category is less than a high school degree, the marginal effect of the two remaining education levels should be negative. Both models, however, estimate positive marginal effects for these variables. The smaller marginal effect of having a college degree relative to only a high school diploma, however, provides some evidence consistent with opportunity cost theory. The marginal effects for both the predicted probability that a child is named as the future caregiver among non-disabled households and the predicted probability that a child acts as the primary caregiver for disabled households are similar. This result suggests that while the sign of the education effect is not expected, non-disabled parents seem to understand the importance of education when assessing the child most likely to provide care in the future.

Table 3.6 includes two additional covariates unrelated to opportunity costs: indicators for whether a child is the oldest or youngest. As discussed in Chapter 2, some theoretical research suggests that birth order may be an important determine of informal

care provision among children. As seen in the first column of Table 3.6, being the oldest increases the predicted probability of being named the future care provider by 8 percentage points, while being the youngest decreases the predicted probability by 6 percentage points. These results suggest that parents believe that the oldest child is more likely to provide care relative to younger children. The lack of statistically significant marginal effects of being the oldest or youngest when estimating the probability that a child provides the most care suggests that birth order is not an important determinant of which child actually provides care.

**D. Summary**

The first two sections of this chapter examine the probability that non-disabled households expect future care from children and the probability that disabled households actually receive care from children. The results support several conclusions. First, households with more daughters are more likely to expect care from their children; however, an additional daughter does not increase the true probability of receiving care. Second, parents are more likely to expect and receive care when they live within 10 miles of their children. Third, a greater number of children with low opportunity costs does not affect the probability of expecting or receiving care. Fourth, parents do not consider their socioeconomic status when assessing the probability of receiving future care, yet households with low socioeconomic status are more likely to receive care. Finally, parents who have previously deeded a house to a child are more likely to expect future care from their children, but previously deeding a house does not increase the true probability of receiving care. Caring for grandchildren, however, does increase the

probability of actually receiving care, but parents who provide child care are not more likely to expect care.

The third section of this chapter addresses a different question. Limiting the sample to households that expect future care, I examine the probability that a child is named the future care provider. I also estimate the probability that a child acts as the primary care provider among disabled households that receive at least some care from children. The results suggest that daughters are both more likely to be named the future care provider and are more likely to act as the primary care provider. While daughters are more likely to provide the most care in households receiving at least some care from children, the previous section shows that a greater number of daughters does not increase the probability of receiving care from children. Children living close to parents are more likely to be named future care providers and are more likely to act as a primary care provider. In addition, parents do not account for a child's marital and work status when naming a future care provider, yet these child characteristics are important determinants of whether a child acts as a primary caregiver. Alternatively, parents believe that oldest children are more likely than younger children to act as future care providers, but birth order is not a statistically significant determinant of whether a child acts as a primary care provider. Taken together, these results suggest that parents' expectations about future care from children may not coincide with the realization of care after the onset of a disability.

## Table 3-1: Bivariate Analysis

| | Percentage of Non-Disabled Households That Predict Future Care | Percentage of Disabled Households that Receive Care | |
|---|---|---|---|
| | | At Least 1 Respondent Needs Help | All Respondents Need Help |
| Full Sample | 50.19 | 32.98 | 46.68 |
| | | | |
| Singles | 47.02 | 49.27 | 49.27 |
| Married | 55.99 | 12.99 | 34.27 |
| Both Need Help | | 34.27 | |
| One Needs Help | | 5.66 | |
| Number of Children | | | |
| 1 | 35.61 | 31.04 | 41.54 |
| 2 | 45.37 | 25.91 | 40.67 |
| 3 | 53.68 | 32.68 | 44.77 |
| 4+ | 63.08 | 41.07 | 56.94 |
| Number of Daughters | | | |
| 0 | 30.00 | 29.13 | 42.11 |
| 1 | 48.95 | 29.66 | 42.54 |
| 2 | 58.02 | 33.74 | 48.03 |
| 3+ | 66.83 | 42.71 | 57.45 |
| Number of Sons | | | |
| 0 | 50.10 | 31.75 | 44.11 |
| 1 | 46.04 | 30.37 | 43.02 |
| 2 | 49.91 | 29.66 | 44.64 |
| 3+ | 60.10 | 44.14 | 59.35 |
| Gender of Oldest Child | | | |
| Female | 54.19 | 33.36 | 46.96 |
| Male | 46.12 | 32.60 | 46.38 |
| Number of Children Living Close | | | |
| 0 | 35.60 | 10.65 | 17.41 |
| 1 | 52.67 | 40.43 | 54.43 |
| 2 | 64.43 | 40.54 | 56.82 |
| 3+ | 72.24 | 50.00 | 62.45 |
| Number of Kids Who Don't Work | | | |
| 0 | 46.44 | 22.90 | 36.73 |
| 1 | 51.66 | 34.68 | 45.62 |
| 2+ | 66.06 | 54.99 | 65.50 |
| Number of Unmarried Children | | | |
| 0 | 48.47 | 29.98 | 43.10 |
| 1 | 47.02 | 30.38 | 43.87 |
| 2+ | 59.54 | 42.11 | 56.62 |
| Number of Kids With No Children | | | |
| 0 | 49.69 | 34.24 | 46.88 |
| 1 | 48.93 | 32.86 | 47.52 |
| 2+ | 55.16 | 25.93 | 42.76 |

**Table 3-2: Basic Probit Model Results**

Marginal Effects and Standard Errors

| | Probability that Non-Disabled Households Predict Future Care | Probability that Disabled Households Receive Care |
|---|---|---|
| Married | 0.103 | |
| | (0.025)** | |
| Married - Both Spouses Need Help | | -0.226 |
| | | (0.017)** |
| Married - One Spouse Needs Help | | -0.378 |
| | | (0.019)** |
| Nonwhite | -0.031 | -0.003 |
| | (0.030) | (0.024) |
| High School Dropout | 0.016 | 0.077 |
| | (0.026) | (0.023)** |
| Age of Oldest | -0.000 | 0.004 |
| | (0.002) | (0.002)** |
| Home Ownership Status (Rent Omitted) | | |
| Own Home | 0.010 | -0.017 |
| | (0.031) | (0.025) |
| Home Deeded | 0.190 | 0.048 |
| | (0.077)* | (0.066) |
| Home Status Missing | 0.081 | 0.037 |
| | (0.047) | (0.036) |
| Income (20k Plus Omitted) | | |
| Less than 10 k | 0.052 | 0.095 |
| | (0.033) | (0.035)** |
| 10 –20 k | -0.002 | 0.030 |
| | (0.027) | (0.033) |
| Missing | -0.034 | 0.067 |
| | (0.045) | (0.054) |
| Number of Daughters | 0.071 | -0.014 |
| | (0.013)** | (0.011) |
| Number of Children | -0.007 | -0.001 |
| | (0.010) | (0.008) |
| Number Living Close | 0.086 | 0.082 |
| | (0.011)** | (0.010)** |
| Number of ADL Limitations | | 0.009 |
| | | (0.006) |
| Number of IADL Limitations | | 0.134 |
| | | (0.009)** |
| Observations | 2413 | 2486 |
| Average Probability | 50.2 | 33.0 |

** Significant at 1% level
* Significant at 5% level
+ Significant at 10% level

**Table 3-3: Probit Model Results with Variables Capturing Opportunity Costs**

Marginal Effects and Standard Errors

| | Probability that Non-Disabled Households Predict Future Care | Probability that Disabled Households Receive Care | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Married | 0.102 | | |
| | (0.025)** | | |
| Married - Both Spouses Need Help | | -0.225 | -0.208 |
| | | (0.017)** | (0.018)** |
| Married - One Spouse Needs Help | | -0.377 | -0.367 |
| | | (0.019)** | (0.019)** |
| Nonwhite | -0.017 | 0.003 | 0.008 |
| | (0.031) | (0.026) | (0.024) |
| High School Dropout | 0.011 | 0.072 | 0.075 |
| | (0.026) | (0.023)** | (0.023)** |
| Age of Oldest | -0.000 | 0.004 | 0.006 |
| | (0.002) | (0.002)* | (0.002)** |
| Home Ownership Status (Rent Omitted) | | | |
| Own Home | 0.009 | -0.014 | -0.015 |
| | (0.031) | (0.025) | (0.025) |
| Home Deeded | 0.183 | 0.052 | 0.031 |
| | (0.078)* | (0.067) | (0.064) |
| Home Status Missing | 0.077 | 0.044 | 0.049 |
| | (0.047) | (0.036) | (0.036) |
| Income (20k Plus Omitted) | | | |
| Less than 10 k | 0.051 | 0.093 | 0.101 |
| | (0.033) | (0.035)** | (0.035)** |
| 10 –20 k | -0.002 | 0.029 | 0.036 |
| | (0.027) | (0.033) | (0.033) |
| Missing | -0.036 | 0.064 | 0.077 |
| | (0.045) | (0.054) | (0.054) |
| Number of Daughters | 0.061 | -0.012 | -0.014 |
| | (0.016)** | (0.014) | (0.011) |
| Number of Children | 0.006 | -0.005 | -0.001 |
| | (0.011) | (0.010) | (0.008) |
| Number Living Close | 0.088 | 0.084 | 0.084 |
| | (0.011)** | (0.010)** | (0.010)** |
| Number of ADL Limitations | | 0.009 | |
| | | (0.006) | |
| Number of IADL Limitations | | 0.134 | |
| | | (0.009)** | |
| Number of Schedulable Limitations | | | 0.094 |
| | | | (0.006)** |
| Number of Unschedulable Limitations | | | -0.032 |
| | | | (0.012)** |
| Oldest Child is a Girl | 0.032 | 0.004 | |
| | (0.026) | (0.032) | |
| Number Unmarried Children | -0.027 | -0.012 | |
| | (0.014) | (0.043) | |
| Number Children without Kids | -0.005 | 0.016 | |
| | (0.015) | (0.024) | |
| Number Children Not Working | 0.006 | 0.048 | |

| | | | |
|---|---|---|---|
| | (0.015) | (0.035) | |
| Observations | 2413 | 2486 | 2486 |
| Average Probability | 50.2 | 33.0 | 33.0 |

** Significant at 1% level
* Significant at 5% level
+ Significant at 10% level

**Table 3-4: Probit Model Results with Variables Capturing Health Status**

Marginal Effects and Standard Errors

| | Probability that Non-Disabled Households Predict Future Care (1) | Probability that Disabled Households Receive Care (2) | Probability that Non-Disabled Households Predict Future Care (3) | Probability that Disabled Households Receive Care (4) |
|---|---|---|---|---|
| Married | 0.123 | | 0.118 | |
| | (0.025)** | | (0.026)** | |
| Married - Both Spouses Need Help | | -0.229 | | -0.232 |
| | | (0.016)** | | (0.016)** |
| Married - One Spouse Needs Help | | -0.382 | | -0.387 |
| | | (0.019)** | | (0.019)** |
| Nonwhite | -0.021 | -0.002 | -0.046 | -0.000 |
| | (0.030) | (0.024) | (0.030) | (0.025) |
| High School Dropout | 0.031 | 0.071 | 0.019 | 0.075 |
| | (0.026) | (0.023)** | (0.026) | (0.023)** |
| Age of Oldest | -0.000 | 0.005 | -0.000 | 0.006 |
| | (0.002) | (0.002)** | (0.002) | (0.002)** |
| Home Ownership Status (Rent Omitted) | | | | |
| Own Home | 0.004 | -0.015 | 0.011 | -0.017 |
| | (0.031) | (0.025) | (0.031) | (0.025) |
| Home Deeded | 0.194 | 0.047 | 0.186 | 0.044 |
| | (0.077)* | (0.066) | (0.078)* | (0.066) |
| Home Status Missing | 0.070 | 0.043 | 0.080 | 0.033 |
| | (0.048) | (0.036) | (0.047) | (0.036) |
| Income (20k Plus Omitted) | | | | |
| Less than 10 k | 0.061 | 0.081 | 0.054 | 0.087 |
| | (0.033) | (0.035)* | (0.033) | (0.035)* |
| 10 –20 k | 0.005 | 0.023 | 0.000 | 0.026 |
| | (0.028) | (0.033) | (0.028) | (0.033) |
| Missing | -0.027 | 0.064 | -0.030 | 0.067 |
| | (0.046) | (0.054) | (0.046) | (0.054) |
| Number of Daughters | 0.073 | -0.014 | 0.071 | -0.013 |
| | (0.013)** | (0.011) | (0.013)** | (0.011) |
| Number of Children | -0.008 | -0.001 | -0.007 | -0.002 |
| | (0.010) | (0.008) | (0.010) | (0.008) |
| Number Living Close | 0.086 | 0.083 | 0.086 | 0.082 |
| | (0.011)** | (0.010)** | (0.011)** | (0.010)** |
| Number of ADL Limitations | | 0.003 | | 0.007 |
| | | (0.006) | | (0.006) |
| Number of IADL Limitations | | 0.131 | | 0.137 |
| | | (0.009)** | | (0.009)** |
| Health Status (Excellent/Very Good omitted) | | | | |
| Good | -0.033 | 0.020 | | |
| | (0.025) | (0.035) | | |
| Fair | -0.106 | 0.025 | | |
| | (0.029)** | (0.034) | | |
| Poor | -0.121 | 0.104 | | |
| | (0.050)* | (0.039)** | | |
| Ever Diagnosed with | | | | |

| | | | | |
|---|---|---|---|---|
| Cancer | | | -0.040 | 0.027 |
| | | | (0.028) | (0.028) |
| Heart Condition | | | -0.023 | 0.006 |
| | | | (0.023) | (0.021) |
| High Blood Pressure | | | -0.007 | 0.020 |
| | | | (0.022) | (0.021) |
| Lung Disease | | | -0.085 | 0.056 |
| | | | (0.032)** | (0.030) |
| Diabetes | | | 0.043 | 0.061 |
| | | | (0.032) | (0.027)* |
| Stroke | | | -0.003 | -0.045 |
| | | | (0.042) | (0.025) |
| Observations | 2413 | 2486 | 2413 | 2486 |
| Average Probability | 50.2 | 33.0 | 50.2 | 33.0 |

** Significant at 1% level
* Significant at 5% level
+ Significant at 10% level

**Table 3-5: Probit Model Results with Variables Capturing Transfers from Parents**

Marginal Effects and Standard Errors

| | Probability that Non-Disabled Households Predict Future Care | Probability that Disabled Households Receive Care |
|---|---|---|
| Married | 0.102 | |
| | (0.025)** | |
| Married - Both Spouses Need Help | | -0.225 |
| | | (0.017)** |
| Married - One Spouse Needs Help | | -0.378 |
| | | (0.019)** |
| Nonwhite | -0.041 | -0.002 |
| | (0.031) | (0.026) |
| High School Dropout | 0.010 | 0.079 |
| | (0.026) | (0.023)** |
| Age of Oldest | 0.000 | 0.004 |
| | (0.002) | (0.002)** |
| Home Ownership Status (Rent Omitted) | | |
| Own Home | 0.014 | -0.023 |
| | (0.031) | (0.026) |
| Home Deeded | 0.205 | 0.052 |
| | (0.079)** | (0.069) |
| Home Status Missing | 0.084 | 0.036 |
| | (0.047) | (0.036) |
| Income (20k Plus Omitted) | | |
| Less than 10 k | 0.038 | 0.098 |
| | (0.034) | (0.037)** |
| 10 –20 k | -0.012 | 0.031 |
| | (0.028) | (0.034) |
| Missing | -0.043 | 0.069 |
| | (0.046) | (0.055) |
| Number of Daughters | 0.071 | -0.015 |
| | (0.013)** | (0.011) |
| Number of Children | -0.007 | -0.001 |
| | (0.010) | (0.008) |
| Number Living Close | 0.086 | 0.082 |
| | (0.011)** | (0.010)** |
| Number of ADL Limitations | | 0.009 |
| | | (0.006) |
| Number of IADL Limitations | | 0.135 |
| | | (0.009)** |
| Gave 5K+ to Kids (Last 10 Yrs) | -0.039 | -0.014 |
| | (0.026) | (0.025) |
| Deeded House to Kids (Last 10 Yrs) | -0.040 | -0.017 |
| | (0.055) | (0.011) |
| Children Named in Will | -0.009 | 0.003 |
| | (0.025) | (0.014) |
| Lived with Grandchild 1+ Years | 0.048 | 0.026 |
| | (0.040) | (0.011)* |
| Observations | 2413 | 2486 |
| Average Probability | 50.2 | 33.0 |

** Significant at 1% level

* Significant at 5% level

+ Significant at 10% level

## Table 3-6: Conditional Logit Model Results

Marginal Effects and Standard Errors

| | Child Named as Future Care Provider | Child Acts as Primary Caregiver |
|---|---|---|
| Child Characteristics: | | |
| Female | 0.198 | 0.129 |
| | (0.014) ** | (0.014) ** |
| Works | 0.010 | -0.029 |
| | (0.019) | (0.016)+ |
| Married | 0.011 | -0.043 |
| | (0.019) | (0.017)* |
| Owns a Home | 0.037 | -0.027 |
| | (0.019)+ | (0.019) |
| Has Children | 0.022 | -0.032 |
| | (0.022) | (0.021) |
| Lives within 10 Miles of Parents | 0.259 | 0.283 |
| | (0.014) ** | (0.011) ** |
| Education Level | | |
| Less than a High School Degree | Omitted Category | Omitted Category |
| High School Diploma or Some College | 0.066 | 0.082 |
| | (0.030)* | (0.021) ** |
| College Degree or More | 0.052 | 0.073 |
| | (0.032) | (0.026) ** |
| Oldest | 0.075 | -0.007 |
| | (0.023) ** | (0.022) |
| Youngest | -0.061 | 0.017 |
| | (0.023) ** | (0.024) |

** Significant at 1% level
* Significant at 5% level
+ Significant at 10 % level

## 4. Can Parents Accurately Predict Informal Care from Children and Are there any Consequences of Inaccurate Predictions?

As seen in the previous chapter, the characteristics that parents incorporate when assessing the likelihood that their children will provide future care differ from those characteristics that predict the receipt of care, suggesting that parents' expectations about informal care may not be accurate. Given that parents may have made previous consumption and savings decisions based on these predictions, parents may experience economic and psychological hardships if they do not receive care they anticipated. Alternatively, parents who unexpectedly receive care from children may experience economic and psychological gains. This chapter investigates three questions: (1) Are parents' expectations accurate; (2) What household characteristics are correlated with experiencing inaccurate predictions; and (3) Are there economic or psychological consequences for parents whose predictions are not accurate?

To address these questions, I exploit the panel nature of the AHEAD survey and examine the experiences of households as they move from non-disabled to disabled status. The AHEAD sample includes many households that did not report ADL or IADL limitations in the first wave of the survey in 1993. Given their age, many of these households start to need assistance over the next few years. Households that become disabled after 1993 can be used to test the research questions outlined above. The AHEAD follow-up surveys, administered in 1995, 1998, and 2000, provide information on these households over time. This long history also provides an opportunity to examine three research questions over time as parents' disabilities persist. The first section of this chapter describes how the disability status of the non-disabled households

in 1993 changes over time. The remaining sections examine the accuracy of parents' predictions, characteristics associated with experiencing inaccurate predictions, and the economic and psychological impact of inaccurate predictions.

**A. Changes in Disability Status of Households that Did Not Need Assistance in 1993**

Are parents who start reporting disabilities in 1995 initially less disabled relative to households that start reporting disabilities in 2000? Are parents who report disabilities just two years after making their predictions less likely to receive care relative to parents who become disabled later because their characteristics and those of their children are unlikely to have changed since they made their predictions? This dissertation divides households into sub-samples based on when a household first reports a disability and the remaining analyses are performed separately for each sub-sample. Assessing the similarities between the groups will determine whether differences in the results are attributable to pre-existing differences in the groups.

To examine non-disabled households from 1993 over time, I assign each household to three groups based on the year in which the household first reported an ADL or IADL (the 1995, 1998, and 2000 cohorts of newly disabled households).[28] A portion of the households in each newly disabled cohort continues to need help over time while others report limitations for only a period of time. For example, some households that first report a limitation in 1995 continue to need assistance in both 1998 and 2000. By following cohorts of newly disabled households across time, I can examine whether households are more likely to receive care as their disabilities persist and become more

[28] Households that do not report needing assistance in any of the follow-up surveys are excluded from the analysis in this chapter.

extensive. I also determine whether parents' predictions are more likely to be accurate after longer periods of disability and whether the implications of inaccurate predictions change over time.

Figure 4.1 illustrates how households that did not report a disability in 1993 are divided into different groups based on when they first reported a disability. In each of the follow-up years, households are classified into one of four categories: deceased, missing,[29] non-disabled, and disabled. Once a household fails to complete an interview, they are excluded from the diagram for the remaining waves, regardless of whether the household completes an interview in a later wave.

In the upper right-hand corner of Figure 4.1, we see that 2,483 households did not need assistance with an ADL or IADL in 1993. By the 1995 follow-up survey, four percent of these households die and seven percent do not complete interviews. The majority of households (69 percent) continue to meet their personal care needs without assistance, while the remaining 20 percent constitute the 1995 cohort of newly disabled households.

The eight columns on the right side of the Figure 4.1 trace the 1995 cohort of newly disabled households over time. By the 1998 survey, 11 percent of these 500 households die and an additional four percent do not complete interviews. Nearly a third of the 1995 cohort no longer needs assistance by 1998, however 54 percent continue to require care, creating a sub-sample respondents that requires assistance for two consecutive waves. By the 2000 follow-up survey, 16 percent of these 271 households die and an additional two percent do not complete interviews. Eighteen percent no longer

need assistance, while the majority of households (63 percent) continue to need care. These 172 households constitute the sub-sample of the 1995 newly disabled cohort that requires care for three consecutive waves.

Returning to the upper right corner of Figure 4.1, we see that 1,711 households do not need help in 1993 or 1995. By the 1998 follow-up interview, the majority of these households (78 percent) still do not need assistance. Eighteen percent, however, first report an ADL or IADL limitation during the 1998 interview. These 304 households constitute the 1998 cohort of newly disabled households. Among the newly disabled in 1998, 50 percent continue to need assistance in 2000, comprising the sub-sample of the 1998 newly disabled cohort that requires care for two consecutive waves. Finally, among the 1,235 households that do not need assistance in 1993, 1995, or 1998, 16 percent begin to need help by the 2000 follow-up survey. These 196 households constitute the 2000 cohort of newly disabled households.

Tables 4.1 through 4.6 provide descriptive statistics about the disability level of these three newly disabled cohorts over time. Each row corresponds to a newly disabled cohort (1995, 1998, and 2000) and the columns indicate the number of waves in which the cohort reports needing assistance. For example, the first row corresponds to households that start reporting a disability in 1995. The first column of the first row corresponds to the 500 newly disabled households in the 1995 newly disabled cohort, while the second and third columns correspond to the households in the 1995 newly disabled cohort that continue to need assistance in the following two waves. Reading

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[29] A married household is classified as missing if one or both spouses refuses to complete a survey because disability status cannot be assessed without self-reported information from both spouses.

across a row traces how a cohort changes over time, while reading down a column compares cohorts after the same length of time reporting a disability.

Table 4.1 displays the percentage of each cohort that needs assistance with only one ADL or IADL limitation, while Table 4.2 shows the percentage of each cohort that needs assistance with five or more limitations. These two statistics summarize the distribution of disabilities within each cohort over time. Similarly, Tables 4.3 and 4.4 present the percentage of each cohort with no ADL limitations and the percentage with three or more ADL limitations, respectively. Tables 4.5 and 4.6 display the same statistics for IADL limitations.

Since I observe the 1995 cohort of newly disabled households for the longest period, I summarize how their disability levels change over time. The 1998 cohort follows a similar pattern; however, the magnitude of the changes varies. As expected, the average disability level among households in the 1995 cohort increases over time as their disabilities persist. As seen in Tables 4.1 and 4.2, 51 percent need help with only one ADL or IADL limitation in 1995, while only 13 percent need help with five or more limitations. Among households that continue to require care in the next wave, however, a third requires care performing one limitation and a third require help with five or more limitations. By the 2000 follow-up survey, the percentage requiring assistance with only one limitation drops to 21 percent, while the percentage with five or more limitations rises to 41 percent.

A similar pattern emerges when examining ADL and IADL limitations separately. Table 4.3 reveals that 28 percent of newly disabled households in 1995 report no ADL limitations. This percentage decreases to 26 percent in 1998 and 17 percent in 2000.

Table 4.4 illustrates that the proportion of the 1995 cohort with three or more ADL limitations rises dramatically over time from only 15 percent in 1995 to 28 and 40 percent in the following two waves. Similarly, Tables 4.5 and 4.6 show that over time the percentage of households with no IADL limitations declines, while the percentage of households with three or more IADL limitations rises. Forty-four percent of newly disabled households in 1995 report no IADL limitations and that percentage drops to 31 and 22 percent in the following two interviews. The percentage of households with three or more IADL limitations increases from 13 percent in 1995 to 27 percent in 1998 and then to 39 percent in 2000.

Tables 4.1 through 4.6 also illustrate how disability levels vary across newly disabled cohorts. The first column of each table describes each cohort during the wave in which they first reported a disability. As seen in Table 4.1, the percentage of households with only one limitation is consistent across newly disabled cohorts at approximately 50 percent. The percentage with five or more limitations is also relatively similar ranging from 13 to 18 percent, as shown in Table 4.2. Tables 4.3 through 4.6 demonstrate that the results for ADL and IADL limitations are also similar across newly disabled cohorts.

The second column of each table describes the 1995 and 1998 newly disabled cohorts during the second consecutive wave in which households need help. The tables suggest that the 1995 newly disabled cohort may be less disabled relative to the 1998 newly disabled cohort after two consecutive waves of needing help. As seen in Table 4.1, 33 percent of the 1995 newly disabled cohort compared to 25 percent of the 1998 newly disabled cohort reports only one limitation. Table 4.2, on the other hand, reveals that 30 percent of the 1995 newly disabled cohort reports five or more limitations

compared to 38 percent of the 1998 newly disabled cohort. The 1995 newly disabled cohort also has a higher percentage of households with no ADL limitations and no IADL limitations relative to the 1998 newly disabled cohort and a lower percentage with three or more ADL limitations and three or more IADL limitations. These results suggest that among households that need assistance for two consecutive waves, the 1998 newly disabled cohort may be more disabled than the 1995 newly disabled cohort.

The figure and tables in this section illustrate that during each follow-up survey approximately 16-20 percent of previously non-disabled households begin to report a disability. Across cohorts of newly disabled households, the initial disability level is similar. Two years after initially reporting a disability approximately 50 percent of the 1995 and 1998 cohorts of newly disabled households still need assistance. The level of disability increases as disabilities persist. There is, however, some evidence that the 1998 newly disabled cohort may experience faster progression of disabilities relative to the 1995 cohort.

**B. Are Parents' Expectations about Future Care from Children Accurate?**

Chapter 3 suggests that the child and parent characteristics correlated with whether parents anticipate care from their children are not always the same characteristics that are correlated with the true probability of receiving care. This inconsistency may lead to a high rate of inaccurate predictions among parents. This section examines the accuracy of parents' predictions using the cohorts of newly disabled households described above.

Table 4.7 displays the percentage of households in each newly disabled cohort that predict future care from children, while Table 4.8 shows the percentage of

households in each cohort that receive care from children. As seen in Table 4.7, the percentage of households predicting future care from children remains fairly constant across newly disabled cohorts and within cohorts over time. In Table 4.8, however, we see that while the percentage of disabled households receiving care is similar across cohorts of newly disabled households, within each newly disabled cohort the percentage receiving care increases over time. Approximately one third of newly disabled households receive care from children and this percentage increases after each consecutive wave. Among households that need help for two consecutive waves, 41 to 44 percent receive care from children, whereas 53 percent of the 1995 newly disabled cohort receives care after three consecutive waves with disabilities.

The percentage of newly disabled households expecting future care exceeds the percentage receiving care, regardless of the newly disabled cohort examined. Approximately 50 percent of newly disabled households predict care from children in 1993, but only a third actually receive care. Among households that need assistance for two consecutive waves, however, the difference in these two percentages is smaller. Fifty percent of these households anticipate care and 41 to 44 percent receive care. Among households in the 1995 newly disabled cohort that need assistance of three consecutive waves, 44 percent predict care and 53 percent receive care. These comparisons suggest that parents' predictions may be more accurate as disabilities persist.

The analysis above, however, does not capture whether the same households that predict care actually receive it. To address this question, I divide households into two groups: households that anticipated care from children in 1993 and households that did

not. Each group is further divided by whether their predictions are true. Households that predict future care from children and receive care after the onset of a disability are labeled as experiencing a *true positive*. Households that inaccurately predict future care from children are classified as experiencing a *false positive.* Similarly, among households that do not predict future care from children, those that do not receive care experience a *true negative,* whereas households that receive assistance experience a *false negative*. I assess the accuracy of parents' predictions by examining the false positive rates in Table 4.9 and the false negative rates in Table 4.10.

As seen in Table 4.9, the false positive rates are extremely high among newly disabled households. While the rates decline as disabilities persist, they are still high among households that report disabilities for three consecutive waves. Among the newly disabled households that predict future care from children in 1993, the false positive rate is 68 percent for the 1995 newly disabled cohort and 64 percent for the 1998 and 2000 newly disabled cohorts. The false positive rate decreases somewhat among households that require assistance for two consecutive periods to approximately 50 percent. Among households in the 1995 newly disabled cohort that continue to need help for three consecutive waves, the false positive rate drops to 47 percent.

Turning to the households that did not predict future care from children, Table 4.10 displays the false negative rates across cohorts and time. Among the newly disabled households, about one quarter of the 1995 and 1998 newly disabled cohorts experience a false negative. The rate among the 2000 cohort is slightly higher, 29 percent. Among households that need assistance for two consecutive waves, the false negative rate increases to 41 percent for the 1995 newly disabled cohort and 32 percent for the 1998

newly disabled cohort. After three consecutive waves of needing help, over half of the 1995 newly disabled cohort that did not anticipate care nevertheless receives care.

My use of household level data rather than individual data may over state the false positive and false negative rates. Given the less than ideal AHEAD question regarding expectations, a married household is coded as expecting care if either the husband or the wife reported expecting future care from a child. Consequently, this analysis may erroneously classify a household as a false positive or a false negative. For example, suppose a wife expected future care, but her husband did not. This household is coded as expecting care. Now suppose that the husband becomes disabled and does not receive care from a child. Under the current specifications, the household is classified as experiencing a false positive. If, however, the analysis were performed at the individual level, the husband would be classified as a true negative. An investigation of the false positive and false negative rates at the individual level compared to the household level reveals that approximately 11 to15 percent of the false positive rates among newly disabled households would not occur if assessed at the individual level. Similarly, among married households that needed assistance for two consecutive periods, 13 to 20 percent are inaccurately assigned as false positives, whereas ten percent of married households that needed assistance for three consecutive periods are misclassified. Among households experiencing a false negative, the rate of inaccurate classification is much lower, ranging from zero to five percent across all newly disabled cohorts and over time.

A considerable majority of households that anticipate future care from children find themselves without such care after the initial onset of a disability and the false positive rate is still nearly 50 percent after three consecutive waves of needing assistance.

Conversely, among households that do not anticipate care from children, the false positive rate is only 25 to 30 percent after the initial onset of a disability; however, it rises to over 50 percent after three consecutive waves of needing assistance. Examining Tables 4.9 and 4.10 together reveals an interesting pattern. Among newly disabled households, 40 percent of households that anticipated care receive care, whereas 25 percent of households that did not anticipate care nevertheless receive care. As disabilities persist, however, the percentage receiving care is nearly equal for households that predicted care from children and those that did not, suggesting that over time the accuracy of parents' predictions declines.

**C. Which Households Make Inaccurate Predictions?**

The previous section documents that elderly households' are likely to make errors when predicting about future care from children. Who experiences a false positive and who experiences a false negative? If low socioeconomic households are more likely to inaccurately predict care, they may not have the means of purchasing formal care. This situation may lead to higher Medicaid costs and lower quality of life for the elderly. If, however, the households who do not receive expected care are married, their spouse may provide care and they may consequently confront no reduction in quality of life. The importance of this finding depends in part on who is disappointed and who is pleasantly surprised.

To assess which households are more likely to make prediction errors, I estimate the probability of a false positive among households that expect care and the probability of a false negative among households that do not anticipate care across newly disabled cohorts and time. In all cases, I model the dichotomous outcome with a probit model and

include controls for the number of ADL and IADL limitations, marital status, race, age of the oldest disabled respondent, educational attainment of the most educated household respondent, number of children, number of daughters, number of children living within 10 miles, household income, and whether the household owns their home. I also test whether the results are sensitive to the model specification by including variables that capture additional characteristics about each household's children, the elderly household's health status, and previous transfers to children.

**i. What Predicts a False Positive?**

Table 4.11 reports the marginal effects and standard errors from the basic probit model estimating the probability of a false positive among households that predicted future care from children in 1993.[30] In each newly disabled cohort and each wave, an additional IADL limitation decreases the probability of a false positive. The magnitude of the marginal effect ranges from 20 to 34 percentage points. The marginal effect on an additional ADL limitation, however, is not statistically significantly related to the probability of a false positive. These results confirm the findings in Chapter 3 that parents are more likely to receive care when the assistance needed is less onerous or more easily scheduled by children. Table 4.11 also indicates that married households are more likely to experience a false positive. This result suggests that children are less likely to help when their disabled parent has a spouse who can provide care.

Turning to measures of socioeconomic status, there is some evidence in Table 4.11 that low educational attainment decreases the probability of a false positive after the initial onset of a disability. Among the newly disabled households in 1995 and 1998,

households in which the most educated respondent did not finish high school are less likely to experience a false positive. Low educational attainment decreases the probability of a false positive by 22 and 30 percentage points, respectively. The marginal effects of income and home ownership, however, are not statistically significant. These results provide limited evidence that socioeconomic status is related to the probability of a false positive.

Table 4.12 provides the results for the models that include the number of schedulable and unschedulable limitations rather than the number of ADL and IADL limitations. This alternative specification more precisely addresses whether the ability of children to schedule time to help parents decreases the probability of a false positive. An additional schedulable limitation decreases the probability of a false positive by 11 to 28 percentage points. The relationship between the probability of a false positive and an additional unschedulable limitation is not consistent across cohorts and it is not always statistically significant. An additional unschedulable limitation increases the probability of a false positive among the newly disabled households in 2000, but decreases it among households in the 1998 newly disabled cohort that need assistance for two consecutive waves. Under this alternative specification, the results for the other covariates remain largely the same. This specification provides further evidence that households are more likely to receive care when the costs to children are lower.

[30] Chapter 3 provides a description of how these marginal effects and standard errors are calculated.

The model in Table 4.13 returns to the ADL and IADL specification and includes additional characteristics of the households' children.[31] These variables are included because of the findings in Chapter 3 and other work that suggests that a child's opportunity costs are correlated with the probability that the child provides care. As in Chapter 3, when children's opportunity costs are aggregated to the household level, they are not statistically significantly related to the probability that a household receives care. The marginal effects of the original covariates in the model remain basically the same after these additional variables are included.

The results in Tables 4.14 through 4.16 correspond to model that include additional variables measuring the health status of household members. As seen in Chapter 2, previous research suggests that a parent's health status and the probability of receiving care are related. While ADL and IADL limitations capture some aspects of an elderly person's health status, these measures do not necessarily incorporate how an individual views her own health, the existence of chronic diseases, or cognitive impairment. Table 4.14 includes the self-reported health status of the least healthy household respondent. Among newly disabled households in 2000, the marginal effect of poor health status relative to excellent/very good health decreases the probability of a false positive. Among households in the 1995 newly disabled cohort that need assistance for two or three consecutive waves, however, the marginal effect of fair health is positive. The first result supports previous research, while the second does not.

[31] These variables includes an indicator for whether the household's oldest child is a daughter, the number of children who do not work, the number of children who are unmarried, and the number of children without children of their own.

Table 4.15 includes indicators for whether any household respondent has been previously diagnosed with various chronic diseases.[32] The results show a negative relationship between experiencing a stroke and the probability of a false positive in two newly disabled cohorts. Having high blood pressure and diabetes, however, are positively correlated with the probability of experiencing a false positive among households in the 1995 newly disabled cohort that need assistance for three consecutive waves. These results are somewhat inconsistent with the fact that the false positive rate declines as disabilities persist, given that high blood pressure and diabetes are persistent conditions. Finally, the marginal effect of a cancer diagnosis is negative in one cohort and positive in another. Overall, these results do not reveal a consistent relationship between the probability of experiencing a false positive and previous diagnoses of chronic diseases.

The models in Table 4.16 control for whether any household respondent is cognitively impaired.[33] The marginal effect of cognitive impairment is not statistically significant for any cohort. Taken together, Tables 4.14 through 4.16 suggest that health status beyond the number of disabilities is not statistically significantly related to the probability of a false positive. In addition, these additional variables do not substantially alter the results from the basic model in Table 4.11.

[32] These chronic diseases include: cancer, heart disease, high blood pressure, ling disease, diabetes, and stroke

[33] Individuals are classified as cognitively impaired if they score 8 or higher on the Total Cognition Score, described in detail in the data appendix.

Table 4.17 includes indicators for whether the household previously transferred money or time to their children.[34] Theoretical and empirical research, discussed in Chapter 2, suggests that transferring assets to children and receiving care are positively related. The marginal effects for these additional variables, however, are not statistically significantly related to the probability of a false positive with one exception. Households in the 1998 newly disabled cohort that need assistance for two consecutive waves and named their children in their will are less likely to experience a false positive. Children may be more likely to provide care when they believe a future bequest is at stake. Contrary to the theories describe in Chapter 2, these results suggest that providing assistance to children does not decrease the probability of experiencing a false positive. The marginal effects associated with the variables originally included in the model do not change substantially after controlling for previous transfers.

Overall, this statistical analysis of the probability of a false positive supports three conclusions. First, an additional IADL limitation decreases the probability of a false positive. Since IADL limitations are less onerous than ADL limitations, this result suggests that children are more likely to provide care when the costs are lower. Second, married households are more likely to experience a false positive. Children may be less likely to provide care when a parent can rely on a spouse for assistance. Finally, there is some evidence that elderly households with low educational attainment are less likely to experience a false. Assuming households with lower educational attainment have less income and wealth relative to households with more education, this result indicates that

[34] These variables include: ever giving financial assistance to children, ever deeding a house to children, naming children in a will, and ever caring for a grandchild.

households with fewer resources are more likely to receive the care they anticipated. The marginal effects of income and home ownership are not statistically significant.

**ii. What Predicts a False Negative?**

Tables 4.18 through 4.24 estimate the probability of a false negative based on the same models used in the previous sub-section. Table 4.18 provides the results for the basic model estimating the probability of a false negative. An additional IADL limitation increases the probability of a false negative for all newly disabled cohorts in all waves. The magnitude of the marginal effect ranges from 16 to 55 percentage points. Among newly disabled households in 1995 and 2000, an additional ADL limitation decreases the probability of a false negative by 8 and 32 percentage points, respectively. These results suggest that parents are more likely to receive unexpected care if they need help with less onerous IADL limitations and parents are less likely to receive unexpected care if they need help with more onerous ADL limitations. Among the newly disabled households in 1995 and 1998, an additional child living close increases the probability of a false negative by 7 and 8 percentage points, respectively. The marginal effect among the 1998 newly disabled cohort, however, is only statistically significant at the 10 percent level. These results are consistent with evidence in Chapter 3 suggesting that children are more likely to provide care when the travel cost is lower. Finally, the probability of a false negative is lower among married households probably because a spouse is available to provide care.

Turning to the variables capturing socioeconomic status, the marginal effect associated with low educational attainment is not statistically significant. In addition, the marginal effect of income is statistically significant for only one newly disabled cohort.

Among newly disabled households in 1998, earning less than $12,000 annually increases the probability of a false negative relative to households earning more than $24,000. This finding suggests that lower socioeconomic households are more likely to receive unexpected care, but this result is not replicated in other newly disabled cohorts. In contrast, among newly disabled households in 2000, households that own a home are more likely to receive unexpected care. Table 4.18 does not support a consistent relationship between socioeconomic status and the probability of a false negative.

Table 4.19 provides results for the model that includes the number of schedulable and unschedulable limitations rather than the number of ADL and IADL limitations. Across all newly disabled cohorts, there is strong evidence that an additional schedulable limitation is positively related to the probability of a false negative. There is also considerable evidence that an additional unschedulable limitation is negatively related to the probability of a false negative. In addition, the positive marginal effect of an additional child living close is now statistically significant for three sub-samples. These results add further support to the conjecture that children are more likely to provide care when the costs are lower. While the marginal effect of other original covariates remains largely the same, the relationship between the probability of a false negative and low educational attainment is now statistically significant for households in the 1995 newly disabled cohort that need assistance for three consecutive waves. This specification provides some evidence that among households that have been disabled for many years, a lower socioeconomic status increases the probability of receiving unexpected care.

Table 4.20 includes variables that capture additional information about the households' children. Among the new covariates, only the marginal effect of an

additional child who does not work is statistically significant. The sign of the marginal effect, however, is not consistent across cohorts. Among newly disabled households in 1998, an additional child who does not work decreases the probability of a false negative. Among households in the 1995 newly disabled cohort that need assistance for two consecutive waves, however, an additional child who does not work increases the probability of unexpectedly receiving care. As in Chapter 3, measures of children's opportunity costs aggregated at the household level are not statistically significantly related to the probability of receiving care.

Additional health status variables are included in the models described in Tables 4.21 through 4.23. As seen in Table 4.21, self-reported health status of the least healthy respondent in the household is not statistically significantly related to the probability of a false negative. Table 4.22 include indicators for the six chronic diseases. While the marginal effect of each disease, except high blood pressure, is statistically significant in one of the sub-samples, no consistent relationship emerges across sub-samples. Finally, the probit models in Table 4.23 control for cognitive impairment among respondents in each household. While the marginal effect of cognitive impairment is statistically significant for two cohorts, the signs are opposite. Including additional variables to capture a households' health status does not alter the marginal effects for the variables originally included and these additional variables are not statistically significantly related to the probability of a false negative.

The models displayed in Table 4.24 include variables capturing previous transfers from parents to children. While the marginal effects of variables originally included in the model are essentially unchanged, several of the new variables have statistically

significant marginal effects. Among the newly disabled households in 2000, previously deeding a house to a relative increases the probability that a household receives unexpected care from children. In addition, among households in the 1995 newly disabled cohort that continue to need assistance for three consecutive waves, previously providing child care for grandchildren increases the probability of a false negative. These results suggest that among households that did not anticipate care from children, previous generosity of parents increases the likelihood that they will receive unexpected care. These results, however, are not replicated in other newly disabled cohorts.

Table 4.24 also shows that two other variables have statistically significant marginal effects with unexpected signs. Among households in the 1995 newly disabled cohort that continue to need care in 1998, naming children in a will decreases the probability of receiving unexpected care. This negative relationship may occur because having a will is a proxy for wealth and wealthy households may be less likely to receive informal care because they can afford formal care. Finally, among the newly disabled in 2000, previously giving financial assistance to children is negatively related to the probability of a false negative. Previous giving may also be an indicator of parents' wealth and higher wealth may increase the probability of using formal rather than informal care.

Separately analyzing households that expect care from children and households that do not expect care from children reveals several characteristics that impact the probability of receiving care in the similar ways for both groups. An additional IADL limitation increases the probability that that both types of households receive care from children. Similarly, being married decreases the probability of receiving care for both

groups. Among the households that expect care, parents with lower educational attainment are more likely to receive care, whereas educational attainment is not statistically significant in models estimating the probability of a false negative. Conversely, among households that do not expect care, an additional child living close increases the probability of a false negative and an additional ADL limitation decreases the probability of false negative. These marginal effects are not statistically significant for households that anticipate care.

**D. Impact of Parents' Inability to Predict Care from Their Children**

Assuming parents are rational and forward-looking, economic theory suggests that a household's saving and spending pattern depends in part on their expectations about future care from their children. Households that do not anticipate care from children may spend less and save more in the early part of their lives relative to households that expect care because they anticipate higher formal care costs in the future. As a result of these potential savings patterns, the economic well-being of the households after the onset of a disability may vary based on the accuracy of their predictions. Those households that experience a false positive may be worse off relative to households that experience a true positive. These households theoretically saved in similar patterns based on their assumption that their children would provide future care. Households that do not receive care, however, are more likely to experience financial strain when they must unexpectedly purchase formal care. In contrast, households that experience a false negative are likely fare better financially relative to households that experience a true negative. Both groups, theoretically, saved at similar levels, but the households that

unexpectedly receive care do not need to spend their savings or current income on formal care.

To explore the economic consequences of inaccurate predictions, I employ several household-level models estimating the probability that a household spent assets, added assets, and experienced food insecurity over the previous two years. Since households that do not receive care from children are likely to need alternative care which may be financially costly, this sub-section also estimates the probability of receiving different types of formal care. These outcomes include: residing in a nursing facility, receiving community-based formal care, and receiving community-based services that are not fully covered by insurance.[35]

Elderly parents are also emotionally invested in their children. Parents who do not receive the care they expected may question how much their children care for them. Alternatively, parents who unexpectedly receive care may be elated by their children's concrete expression of love. The AHEAD survey provides an opportunity to examine whether elderly parents' inability to accurately predict care from their children impacts their psychological well-being, specifically the likelihood that an elderly person experiences depression. Depression is an important outcome measure for two reasons. First, depression decreases an elderly person's quality of life (Doraiswamy, Khan, Donahue, and Richard, 2002). Second, depression may lead to higher healthcare costs. The strong correlation between depression and ADL and IADL limitations is well documented (Hays, Saunders, Kaplan, and Blazer, 1997; Hybels, Blazer, and Pieper,

[35] Community-based formal care includes in-home medical care and care from special facilities or providers such as adult care centers, a social workers, an outpatient rehabilitation programs, or transportation/meals for the elderly.

2001; Ormel, Rijsdijk, Sullivan, van Sonderen, and Kempen, 2002). While the causality of the relationship is unclear, there is some evidence that depression increases the probability of functional limitations, and functional limitations increase healthcare costs by increasing the frequency of doctor visits and hospital stays (Mor, Wilcox, Rakowski, and Hiris, 1994; Stump, Johnson, and Wolinsky, 1995). The second sub-section examines whether experiencing a false positive or a false negative impacts the probability that disabled parents are currently receiving treatment for a psychological disorder and the probability that parents report symptoms of depression.

In addition to clinical measures of psychological well-being, the accuracy of parents' predictions may also impact their outlook on the future. Parents who unexpectedly receive care may be more optimistic about the future and therefore report longer life expectancies. In contrast, parents who do not receive expected care may be more pessimistic and believe they will soon move into a nursing home. In the final sub-section, I use a series of subjective probability questions to examine an elderly parent's outlook on the future. These events include: living to a certain age, moving into a nursing home in the next five years, giving major financial assistance to family members in the next 10 years, receiving major financial assistance from family members in the next 10 years, and leaving a financial inheritance.[36] These types of variables are useful outcome measures for two reasons. First, subjective probabilities provide some indication of whether an individual has a positive or negative outlook on the future. Second, Bassett and Lumsdaine (1999) find that an individual's self-reported probability

[36] Each respondent rates the probability that an event will occur on a scale from 0 to 100. A zero response indicates that the respondent believes that there is no chance that the event will occur, whereas a 100 indicates that the respondent believes the event will definitely occur.

that a particular event will occur is correlated with the true probability that the event takes place in the future. The authors estimate the probability that each of the following events occurs between the first two waves of the AHEAD survey: the respondent dies, moves into a nursing home, gives financial assistance, and receives financial assistance.[37] They find that an individual's subjective probability of an event is statistically significantly related to the true probability that the event occurs in the next wave. I examine the relationship between the accuracy of parents' predictions and their subjective probabilities of certain events using a standard OLS framework at the individual level with clustered standard errors.

The models for each of the outcomes described above include a set of dummy variables to distinguish between households that experience a true positive, false positive, true negative, or false negative. Experiencing a true negative is the omitted category. Each model also controls for age, marital status, race, gender, educational attainment, income, number of ADL limitations, number of IADL limitations, number of children living close, total number of children, and number of daughters. Models estimating economic outcomes also include indicators for whether the household holds various types of assets, including real estate other than a primary or secondary residence, a business or farm, IRAs, stocks, bonds, or CDs. Models estimating whether a financial outcome occurred over the previous two years include asset indicators from the prior wave. Models estimating subjective probabilities about the future, however, include asset indicators for the current wave. When health or healthcare outcomes are modeled, I also include indicators for self-reported health status and cognitive impairment.

[37] The authors did not analyze the accuracy of the other subjective probabilities.

For each outcome, I am interested in two relationships: the effect of a false positive relative to a true positive and the effect of a false negative relative to a true negative. These comparisons answer the following question: What is the effect of receiving care (or not receiving care), conditional on expectations? Conditioning on expectations provides the best counterfactual under which to evaluate the impact of inaccurate expectations on the well-being of elderly parents. Alternatively, the analyses in this section could also be used to examine the impact of expectations conditional on receiving care. For example, among parents who do not receive care, are the parents who expected care worse off relative to those households that did not expect care. This comparison may be interesting from a policy standpoint. If the well-being of elderly parents who do not get care is the same, regardless of their expectations about future care from children, expectations may not be important from a policy perspective.

The effect of a false negative relative to a true negative can be assessed by examining the marginal effect or coefficient on the false negative indicator because the omitted category is experiencing a true negative. To examine the impact of a false positive relative to a true positive, I test the hypothesis that the coefficient associated with a false positive equals that for a true positive. For the probit models, I test this hypothesis using a Chi square test, whereas I use an F-test for the OLS models.

Tables containing all the marginal effects and standard errors for each outcome model are displayed in the data appendix. This section, however, only includes a single table for each set of outcomes: economic, psychological, and subjective probabilities about the future. For each outcome, the tables include four statistics: the difference in the marginal effects associated with experiencing a false positive and a true positive, the

corresponding Chi Square or F statistic, the marginal effect of a false negative relative to a true negative, and the corresponding standard error.

**i. Economic Impact**

Due to high formal care costs, elderly households that do not receive expected care from children may be more likely to spend their assets relative to households that receive the care. Alternatively, these households may be less likely to add to their assets for the same reason. The additional costs associated with formal care may also limit the resources available to pay for other necessities such as food. Conversely, among households that do not anticipate care, those that receive care may be less likely to incur formal care costs. Thus, they may be less likely to spend assets relative to households that do not receive care. These households that unexpectedly receive care may also be more likely to save and less likely to have difficulty paying for other necessities for the same reason.

The first panel of Table 4.25 describes the impact of a false positive and a false negative on the probability that a household spent assets in the last two years. Among newly disabled households in 1998, experiencing a false positive relative to a true positive increases the probability of spending assets by 30 percentage points. This result is consistent with the conjecture described above, but it is not replicated in other newly disabled cohorts or across time. The impact of a false negative relative to a true negative is not statistically significant for any newly disabled cohort.

The second panel of Table 4.25 examines the probability that a household added to their assets in the previous two years. As expected, among households in the 1995 newly disabled cohort that need assistance for two consecutive waves, experiencing a

false positive relative to a true positive decreases the probability of saving by 17 percentage points. This result, however, is not replicated over time or for other newly disabled cohorts. Among households in the 1995 newly disabled cohort that need assistance for three consecutive waves, experiencing a false negative relative to a true negative decreases the probability of adding assets. This result contradicts the conjecture outlined above, but it is only statistically significant at the 10 percent level.

In addition to questions regarding savings and spending behavior, the AHEAD survey asks two questions related to a specific type of economic security – sufficient income to buy food. The survey asks each household, "In the last two years, have you always had enough money to buy the food you need?" For respondents who answer no, refuse to answer, or respond that they do not know, the survey asks, "At any time in the last two years, have you skipped meals or eaten less than you felt you should because there was not enough food in the house?" If a household reports no to the first question or yes to the second question, the household is coded as experiencing food insecurity.

The impact of a false positive and a false negative on the probability of experiencing food insecurity are shown in the third panel of Table 4.25. Given the low percentage of households with this problem, the model cannot be estimated for the newly disabled households in 2000 or households in the 1998 newly disabled cohort that need assistance for two consecutive waves. The effect of experiencing a false positive relative to a true positive is not statistically significantly related to the probability of experiencing food insecurity. Consistent with the conjectures discussed above, there is some evidence that experiencing a false negative relative to a true negative decreases the probability of experiencing food insecurity. Among the newly disabled households in 1998 and

households in the 1995 newly disabled cohort that continue to need assistance in 1998, experiencing a false negative decreases the probability of experiencing food insecurity by 9 percentage points.

The results from the first three panels of Table 4.25 provide some evidence of an economic cost to experiencing a false positive relative to a true positive and an economic benefit to experiencing a false negative relative to a true negative. The evidence, however, is not strong in either case. Experiencing a false positive increases the probability of spending assets among newly disabled households in 1998 by 30 percentage points. Households that do not receive the care they anticipated from children may use assets to purchase formal care. Alternatively, these households may not receive care from children because they are wealthy enough to purchase care for themselves. Experiencing a false positive relative to a true positive lowers the probability of saving by 17 percentage points among households in the 1995 newly disabled cohort that needed assistance for two consecutive waves. These households may not save due to the high costs of formal care. Turning to households that do not expect care from children, experiencing a false negative decreases the probability of experiencing food insecurity by 9 percentage points in one sub-sample of newly disabled households and in one sub-sample of households needing assistance for two consecutive waves.

While the previous three outcomes directly address the finances of elderly households' finances, the economic impact of receiving or not receiving care from children is due in large part to the high cost of alternative care. The remaining panels of Table 4.25 directly examine the use of formal care. The most comprehensive type of formal care is provided by skilled nursing facilities. The fourth panel of Table 4.25

provides the results from models estimating the probability that a member of the household resides in a skilled nursing facility. Disabled elderly persons may alternatively receive community-based formal care. The AHEAD survey includes two questions about the use of formal care other than skilled nursing facilities: "In the last two years, has any medically-trained person come to your home to help you?" and "In the last two years, did you use any special facility or service which we haven't talked about, such as: an adult care center, a social worker, an outpatient rehabilitation program, or transportation or meals for the elderly or disabled?" If an elderly person responds yes to either of these questions, the household is designated as receiving community-based formal care. The fifth panel of Table 4.25 provides the results from the models estimating the probability that a household receives community-based formal care.

Because Medicare and Medicaid cover some types of community-based formal care, the accuracy of a household's predictions may not affect the probability of receiving community-based formal care. Households that do not receive the care they anticipated, however, may be forced to purchase community-based formal care as an alternative, regardless of whether the cost is covered by insurance. Consequently, I create an indicator to capture whether a household receives community-based care that is not fully covered by insurance. This variable is constructed from two additional survey questions. If a respondent indicates that she received in-home care in the previous two years, the survey also asks, "Were the costs of your home medical care completely covered by Medicare, Medicaid, or other health insurance, partly covered by insurance, or not covered at all by insurance?" In addition, if a respondent reports receiving either type of formal care, the survey asks, "About how much did you pay out-of-pocket for (in-home

medical care/special facilities or services) in the last two years?" The final panel of Table 4.25 provides the results from the models estimating the probability that a household receives community-based formal care that is not fully covered by insurance.

Formal care may be a substitute for informal care from children. If children providing care seek alternative care for their parents to relieve part of their responsibilities, however, formal care may be a compliment to informal care. The last three panels of Table 4.25 provide some empirical evidence as to whether informal care from children and formal care are substitutes or compliments.

As seen in the fourth panel of Table 4.25, among newly disabled households in 1998, experiencing a false positive relative to a true positive increases the probability of living in a nursing home by 11 percentage points. This result suggests that formal care is a substitute for informal care, but the result is not replicated for other newly disabled cohorts. The marginal effect of a false negative varies over time. Among the newly disabled households in 2000, experiencing a false negative decreases the probability of residing in a nursing home by 12 percentage points relative to households experiencing a true negative. This result provides evidence that care from children is a substitute for nursing home care in the after the initial onset of a disability. Among households in the 1995 newly disabled cohort that continue to need help in 1998, however, experiencing a false negative increases the probability of residing in a nursing home by 16 percentage points relative to households experiencing a true negative. This marginal effect suggests that formal and informal care become compliments as the households' disability persists. While care from children in the initial stages of a household's disability may alleviate the

need for nursing home care, as disabilities persist, children who provide care may seek to lower their care responsibilities by helping arrange for nursing home care.

The fifth panel of Table 4.25 provides the results for the probability of using community-based formal care. Among newly disabled households in 1998, experiencing a false positive relative to a true positive decreases the probability of using community-based care, suggesting that informal and formal care are compliments. The impact of a false negative is not statistically significantly related to the probability of using community-based care for any newly disabled cohort.

The final panel of Table 4.25 displays the impact of the accuracy of parents' predictions on the probability that a household receives community-based formal care that is not fully covered by insurance. The impact of a false positive is mixed. Among newly disabled households in 1998, the probability of using community-based care not fully covered by insurance is lower for households experiencing a false positive. Among newly disabled households in 2000 newly disabled cohort, however, there is a positive marginal effect associated with experiencing a false positive. Among households in the 1998 newly disabled cohort that need assistance for two consecutive waves, the probability of using community-based care not fully covered by insurance is higher among households that unexpectedly receive care. This result provides further evidence that informal and formal care are compliments as disabilities persist. This marginal effect, however, it is only statistically significant at the 10 percent level.

The final three panels of Table 4.25 support a consistent story for households experiencing a false negative, but the results for households experiencing a false positive are mixed. Among newly disabled households, there is some evidence that a false

positive increases the probability of nursing home care, but decreases the probability of community-based care. Among households in the 1995 newly disabled cohort that need assistance for three consecutive waves, however, a false positive relative to a true positive increases the probability of receiving community-based care not fully covered by insurance. Among households that unexpectedly receive care from children, formal and informal care appear to be substitutes in the early stages of disability, but the two types of care become compliments as the disabilities persists. Among newly disabled households in 2000, a false negative decreases the probability of living in a nursing home relative to households experiencing a true negative. Among households that need assistance for two consecutive waves, however, experiencing a false negative increases the probability of receiving formal care not fully covered by insurance. This may occur because the children seek alternative care providers for their parents after extended periods of providing care. Children may seek this formal care because they are tired of providing care or because the care requirements of their parents have become more serious and children lack the skills necessary to meet their parents' needs.

**ii. Psychological Impact**

The AHEAD survey provides several measures of psychological disorders. First, the survey asks, "Do you now get psychiatric or psychological treatment for your problems?" and "Do you now take tranquilizers, antidepressants, or pills for nerves?" I combine the responses to these two questions to create an indicator for currently receiving treatment or medication for a psychological disorder. This measure, however, is problematic because the decision to pursue medical treatment for psychological disorders may be inhibited by the existence of a disorder and the financial costs

associated with diagnosis and treatment. In addition, these variables measure all psychological disorders, not just depression. For these reasons, the AHEAD survey includes the shortened version of the Center for Epidemiologic Studies of Depression scale (CES-D). The CES-D measures symptoms of psychological distress including anxiety and depression. While the CES-D scale is not as accurate as an evaluation by a trained mental health professional, research has demonstrated that the scale is strongly correlated with clinically diagnosed depression. This research is discussed in more detail in the data appendix.

I use a probit framework to estimate the probability of each outcome at the individual level. These models and all the remaining models in this chapter only include individuals who did not need help in 1993 and whose spouses (if present) did not need help in 1993. The sample does include spouses from the same household when both spouses need assistance. To adjust for the potentially correlated error terms among respondents in the same household, the standard errors in each of the models are clustered by household. Assuming parents who receive care from children are likely to be happier and more secure about the future relative to parents who do not receive care, I expect that parents who experience a false positive to be more likely to have psychological disorders and depression relative to those parents experiencing a true positive. Similarly, I anticipate that parents experiencing a false negative relative to a true negative to be less likely to experience depression because their children have unexpectedly shown concern by providing care.

The first panel of Table 4.26 shows the impact of a false positive and a false negative on the probability that a parent currently receives medication or treatment for a

psychological disorder. The probability of currently receiving treatment, however, is not statistically significantly related to the accuracy of future care predictions.

As discussed earlier, this measure of psychological well-being requires that an individual seek assistance for the disorder. The final panel of Table 4.26 shows the relationship between the probability of scoring a four or higher on the shortened CES-D scale and experiencing a false positive or a false negative. As discussed earlier, this scale provides a more accurate assessment of depression because it does not rely on individuals to recognize that they have psychological problems and it does not require that the individual seek medical attention.

Table 4.26 shows the relationship between the probability of scoring a four or higher on the shortened CES-D scale and experiencing a false positive or a false negative. Among newly disabled households in 1998, experiencing a false positive, relative to a true positive, decreases the probability of meeting the CES-D criterion for depression by 22 percentage points. This result contradicts my a priori expectations. Among households in the 1995 newly disabled cohort that need assistance for two consecutive waves, however, experiencing a false positive increases the probability that an individual experiences depression by 24 percentage points. These results suggest that the negative psychological impact of not receiving expected care may appear only after a longer period of disappointment. Turning to households that did not anticipate care from children, there is some evidence that experiencing a false negative decreases the probability of depression by 11 percentage points among newly disabled households in the 1998 newly disabled cohort.

Examining the probability of depression as measured by the CES-D provides some evidence that, among newly disabled individuals, experiencing a false positive decreases the probability of depression. On the other hand, among individuals that need assistance for two consecutive waves, experiencing a false positive relative to a true positive is associated with a higher probability of depression. These results suggest that not receiving expected care may have negative long-run psychological effects, but positive short-run effects. Parents may initially believe that their children do not need to help, but after an extended period of disability the lack of care they may feel like their children do not care. Table 4.26 also provides some evidence that a false negative relative to a true negative decreases the probability of psychological disorders, but the evidence is not strong. A false negative is associated with a lower probability of depression among newly disabled households.

**iii. Impact on Subjective Probabilities about the Future**

As discussed earlier, individuals' optimism about the future as revealed in self-reported subjective probabilities may be related to the accuracy of parents' predictions about future care from children. Table 4.27 provides OLS estimates of the relationship between the subjective probability of five events and experiencing a false positive or a false negative. The first panel corresponds to the self-reported probability of living to a certain age. Previous research finds a strong link between true life expectancy and self-reported life expectancy among AHEAD respondents. Hard, McFadden and Gan (1998) find that, in the aggregate, subjective probabilities about life expectancy in the AHEAD match actuarial tables relatively well with one exception. Respondents age 80 and older overestimate their life expectancy relative to life tables. Hurd, McFadden, and Merrill

(1999) also show that within a probit framework, there is a strong and statistically significant relationship between the probability of dying between the first two waves of the AHEAD survey and subjective life expectancy, even after controlling for wealth, income, demographic characteristics, and health conditions. These results suggest that individuals' projections about the future are important.

The question regarding life expectancy is only included in the 1995 and 2000 follow-up surveys, therefore the model is not estimated for newly disabled households in 1998 or households in the 1995 newly disabled cohort that need assistance in 1998. The question asks each respondent to estimate the probability that they will at least live to a certain age. The defined future age depends on the individual's current age. If an individual is age 69 or less, between 70 and 74, between 75 and 79, between 80 and 84, or 85 and older the age used is 80, 85, 90, 95, and 100, respectively.

The first panel of Table 4.27 reveals no statistically significant relationship between the accuracy of parents' predictions and the subjective probability of living to a certain age among the newly disabled. Among individuals needing assistance for two consecutive waves, however, experiencing a false negative increases the subjective probability of living to a certain age by 24 points. Alternatively, individuals needing assistance for three consecutive waves and experiencing a false positive lowers the predicted probability of living to a certain age by 38 points, on average. These results suggest that not receiving expected care after a substantial period of coping with disabilities decreases a disabled parent's optimism about future, while unexpectedly receiving care increases optimism.

The second panel of Table 4.27 describes the relationship between disabled parents' self-reported probability of moving into a nursing home within the next five years and experiencing a false positive or a false negative. Limited previous research has examined the accuracy of self-reported probabilities of nursing home entry in the AHEAD. Holden, McBride, and Perozek (1997) conclude that a strong correlation exists between predicted risk and actual risk in the HRS. This conclusion, however, is not based on the direct relationship between nursing home use and the subjective probability. The authors show that the average subjective probabilities of various demographic groups roughly match the true lifetime frequencies from the National Mortality Follow-Up Survey. In addition, they illustrate that the covariates that are significantly related to lifetime risk of nursing home use are also significantly related to the self-reported risk. In addition, Bassett and Lumsdaine (1999) find that a one-point increase in the self-reported probability of entering a nursing home in the next five years increases the probability that an individual enters a nursing home between 1993 and 1995 by 0.1 percentage points. The average probability of entering a nursing home is 10 percent. These studies provide some evidence that an individual's subjective probability of entering a nursing home contains some information about the true probability. The second panel of Table 4.27 reveals that the accuracy of a parent's prediction about future care is not statistically significantly related to the self-reported subjective probability of moving into a nursing home. This result is surprising given that a false negative is related to the probability that parents currently reside in nursing homes.

Respondents also provide their subjective probabilities of giving and receiving financial assistance to family members in the next 10 years. As seen in the third panel of

Table 4.27, there is some evidence that experiencing a false positive relative to a true positive increases the subjective probability of giving financial assistance while experiencing a false negative relative to a true negative decreases the subjective probability. Among newly disabled individuals in the 1995 and 1998 newly disabled cohorts, experiencing a false positive, relative to a true positive, increases the subjective probability of providing financial assistance by 8 and 10 points, respectively. Conversely, experiencing a false negative relative to a true negative decreases the subjective probability of giving by 16 points. Initially, I expected parents who receive care from children to be more likely to anticipate giving financial assistance to children as a means of reimbursing children for their time. One potential explanation for the unexpected empirical results may be that the parents who receive care are financially worse-off relative to parents who do not receive care. The previous section provides some evidence that parents who experience a false negative have lower socioeconomic status. Consequently, parents who do not receive care may be more likely to have assets available to give to other family members.

The fourth panel of Table 4.27 displays the impact of a false positive and a false negative on the self-reported probability of receiving financial assistance from family members in the next 10 years. The accuracy of parents' predictions is not statistically significantly related to the subjective probability of receiving care in any newly disabled cohort.

The final panel of Table 4.27 described the relationship between the self-reported probability of leaving a financial inheritance and experiencing a false positive or false negative. In the 1995 survey, this question asks respondents about the probability of

leaving any financial inheritance. The 1998 and 2000 follow-up surveys, however, inquire about the subjective probability of leaving an inheritance of $10,000 or more. Regardless of the structure of the question, the accuracy of parents' predictions is not statistically significantly related to this probability for any cohort.

As seen in Table 4.27, the models estimating the impact of the accuracy of parents' predictions on subjective probabilities reveal only a few statistically significant relationships, however the results tell a consistent story. Inaccurately predicting care from children is associated with a lower subjective probability of living to a certain age, while unexpectedly receiving care is associated with a higher subjective probability of living to a certain age. These results suggest that individuals experiencing a false positive relative to a true positive are less optimistic about the future, whereas individuals experiencing a false negative relative to a true negative are more optimistic. The models estimating the subjective probability of giving financial assistance in the future indicate that individuals experiencing a false positive report higher probabilities relative to those experiencing a true positive. In addition, there is evidence that individuals experiencing a false negative report lower subjective probabilities of giving on average. The evidence in Chapter 3 that parents in greater need of assistance, those without spouses and with lower wealth levels, are more likely to receive care may help to explain these results.

**E. Summary**

The AHEAD data reveals several striking facts about the accuracy of parents' predictions about future care from children. Among households that anticipate future care, over 60 percent do not receive such care after the initial onset of a disability. As disabilities persist the false positive rate drops somewhat, but it is still close to 50 percent

among households that have needed care for five consecutive years. On the other hand, approximately one-quarter of households that did not expect care, nevertheless, receive care from children after the initial onset of a disability. The false negative rate rises to more than 50 percent among households that have needed assistance for five consecutive years.

This chapter also provides some insight as to which elderly households are likely to experience inaccurate predictions. First, less onerous IADL limitations decrease the probability of a false positive and increase the probability of a false negative, indicating that children may be more likely to help when the cost is low. Second, married households are more likely to experience a false positive and less likely to experience a false negative, suggesting that children are less likely to provide care when another parent is available to provide assistance. While there is some evidence that households with lower educational attainment are less likely to experience a false positive, educational attainment is not related to the probability of experiencing a false negative. Finally, transfers from parents to children do not appear to influence the probability of inaccurately predicting care, but households that have deeded a house to a child or cared for a grandchild in the past are more likely to unexpectedly receive care.

While assessing the impact of inaccurate predictions is somewhat limited by the small sample sizes, there are several interesting conclusions. First, among newly disabled households, experiencing a false positive increases the probability of spending assets and decreases the probability of saving. Second, while experiencing a false negative does not affect the spending or savings behavior, it does decrease the probability of experiencing food insecurity. Third, among households that unexpectedly receive care

from children, there is evidence that formal and informal care are substitutes after the initial onset of a disability, but they are compliments after extended periods of disability. Fourth, households that do not receive expected care are more likely to experience depression in the long-run, but in the short-run a false positive decreases the probability of depression. Finally, inaccurately predicting care from children is associated with a lower subjective probability of living to a certain age, while unexpectedly receiving care is associated with a higher subjective probability of living to a certain age. These results suggest that individuals experiencing a false positive relative to a true positive are less optimistic about the future, whereas individuals experiencing a false negative relative to a true negative are more optimistic.

**Table 4-1: Percentage of Disabled Households with One ADL or IADL Limitation**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 51.0 | 33.2 | 20.9 |
| 1998 | 51.6 | 24.5 | |
| 2000 | 53.6 | | |

**Table 4-2: Percentage of Disabled Households with Five ADL or IADL Limitations**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 13.0 | 29.9 | 40.7 |
| 1998 | 17.1 | 38.4 | |
| 2000 | 18.4 | | |

**Table 4-3: Percentage of Disabled Households with No ADL Limitations**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 27.8 | 25.8 | 17.4 |
| 1998 | 33.2 | 19.9 | |
| 2000 | 32.7 | | |

**Table 4-4: Percentage of Disabled Households with Three of More ADL Limitations**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 14.6 | 28.1 | 40.1 |
| 1998 | 15.5 | 33.7 | |
| 2000 | 13.3 | | |

**Table 4-5: Percentage of Disabled Households with No IADL Limitations**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 43.8 | 31.0 | 22.1 |
| 1998 | 34.9 | 24.5 | |
| 2000 | 38.3 | | |

**Table 4-6: Percentage of Disabled Households with Three or More IADL Limitations**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 13.0 | 27.3 | 39.0 |
| 1998 | 17.8 | 35.8 | |
| 2000 | 18.4 | | |

**Table 4-7: Percentage of Disabled Households that Expected Future Care from Children**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 46.0 | 46.1 | 44.2 |
| 1998 | 50.3 | 53.0 | |
| 2000 | 49.5 | | |

**Table 4-8: Percentage of Disabled Households that Receive Care from Children**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 28.6 | 43.9 | 52.9 |
| 1998 | 30.3 | 41.1 | |
| 2000 | 32.7 | | |

**Table 4-9: False Positive Rate Among Households that Expect Future Care from Children**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 68.3 | 52.8 | 47.4 |
| 1998 | 64.1 | 51.3 | |
| 2000 | 63.9 | | |

**Table 4-10: False Negative Rate Among Households that Did Not Expect Future Care**

| | Number of Waves Needed Help | | |
|---|---|---|---|
| Year First Needed Help | 1 | 2 | 3 |
| 1995 | 25.9 | 41.1 | 53.1 |
| 1998 | 24.5 | 32.4 | |
| 2000 | 29.3 | | |

**Table 4-11: Probability of a False Positive – Basic Model**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.045 | -0.023 | 0.028 | -0.051 | -0.081 | 0.029 |
| | (0.024) | (0.047) | (0.040) | (0.040) | (0.050) | (0.042) |
| Number of IADL Limitations | -0.245** | 0.342** | 0.202** | 0.323** | -0.198** | -0.223** |
| | (0.038) | (0.066) | (0.055) | (0.053) | (0.069) | (0.056) |
| Married | 0.343** | 0.505** | 0.261 | 0.314 | 0.780** | 0.456* |
| | (0.066) | (0.112) | (0.138) | (0.192) | (0.112) | (0.188) |
| Nonwhite | -0.146 | -0.097 | -0.173 | 0.101 | -0.244 | -0.007 |
| | (0.097) | (0.141) | (0.202) | (0.184) | (0.265) | (0.197) |
| Age | -0.013* | 0.017 | -0.013 | -0.010 | 0.019 | 0.031 |
| | (0.006) | (0.012) | (0.013) | (0.011) | (0.023) | (0.017) |
| Dropout | -0.221** | -0.298* | 0.008 | -0.057 | -0.143 | 0.131 |
| | (0.083) | (0.119) | (0.135) | (0.142) | (0.183) | (0.186) |
| Number of Children Living Close | -0.042 | 0.010 | -0.041 | -0.116 | 0.047 | -0.126 |
| | (0.031) | (0.059) | (0.081) | (0.072) | (0.095) | (0.098) |
| Number of Daughters | -0.019 | -0.008 | -0.072 | -0.098 | 0.016 | -0.117 |
| | (0.038) | (0.061) | (0.071) | (0.057) | (0.139) | (0.072) |
| Number of Children | 0.037 | 0.039 | 0.076 | 0.044 | 0.042 | 0.072 |
| | (0.028) | (0.045) | (0.049) | (0.042) | (0.078) | (0.065) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.045 | 0.104 | -0.160 | -0.150 | -0.347 | -0.264 |
| | (0.117) | (0.122) | (0.170) | (0.208) | (0.219) | (0.226) |
| Less than $12,000 | 0.101 | 0.115 | -0.180 | -0.021 | -0.370 | -0.252 |
| | (0.116) | (0.142) | (0.199) | (0.233) | (0.209) | (0.246) |
| Own a Home | -0.013 | 0.063 | -0.038 | 0.020 | 0.117 | 0.047 |
| | (0.070) | (0.124) | (0.124) | (0.134) | (0.184) | (0.179) |
| Observations | 229 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-12: Probability of a False Positive – Including Number of Schedulable & Unschedulable Limitations**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of Schedulable Limitations | -0.191** | -0.200** | -0.177** | -0.278** | -0.110* | -0.196** |
| | (0.031) | (0.043) | (0.050) | (0.048) | (0.052) | (0.049) |
| Number of Unschedulable Limitations | 0.014 | -0.044 | 0.232* | 0.073 | -0.150* | 0.147 |
| | (0.043) | (0.079) | (0.104) | (0.069) | (0.075) | (0.075) |
| Married | 0.333** | 0.413** | 0.136 | 0.348 | 0.730** | 0.571** |
| | (0.068) | (0.105) | (0.150) | (0.180) | (0.113) | (0.156) |
| Nonwhite | -0.118 | -0.092 | -0.161 | 0.186 | -0.073 | 0.044 |
| | (0.095) | (0.133) | (0.207) | (0.172) | (0.251) | (0.205) |
| Age | -0.016** | 0.015 | -0.022 | -0.013 | 0.013 | 0.028 |
| | (0.006) | (0.011) | (0.014) | (0.010) | (0.021) | (0.017) |
| Less than a High School Diploma | -0.216** | -0.262* | -0.086 | 0.014 | -0.176 | 0.176 |
| | (0.082) | (0.112) | (0.143) | (0.137) | (0.181) | (0.188) |
| Number of Children Living Close | -0.045 | -0.000 | -0.087 | -0.114 | 0.050 | -0.107 |
| | (0.031) | (0.056) | (0.080) | (0.069) | (0.092) | (0.097) |
| Number of Daughters | -0.008 | -0.042 | -0.112 | -0.086 | -0.004 | -0.112 |
| | (0.037) | (0.056) | (0.072) | (0.054) | (0.133) | (0.074) |
| Number of Children | 0.033 | 0.064 | 0.100 | 0.031 | 0.039 | 0.065 |
| | (0.027) | (0.042) | (0.053) | (0.040) | (0.070) | (0.066) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.097 | 0.039 | -0.181 | -0.134 | -0.310 | -0.335 |
| | (0.121) | (0.119) | (0.166) | (0.194) | (0.214) | (0.219) |
| Less than $12,000 | 0.051 | 0.108 | -0.148 | -0.013 | -0.359 | -0.270 |
| | (0.122) | (0.133) | (0.197) | (0.221) | (0.202) | (0.246) |
| Own a Home | -0.028 | 0.030 | 0.034 | 0.046 | 0.091 | 0.000 |
| | (0.070) | (0.114) | (0.127) | (0.128) | (0.178) | (0.182) |
| Observations | 230 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-13: Probability of a False Positive – Including Additional Child Characteristics**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.040 | -0.019 | 0.031 | -0.049 | -0.070 | 0.044 |
| | (0.025) | (0.050) | (0.042) | (0.042) | (0.063) | (0.045) |
| Number of IADL Limitations | -0.240** | -0.361** | -0.220** | -0.360** | -0.282** | -0.249** |
| | (0.038) | (0.070) | (0.059) | (0.061) | (0.095) | (0.063) |
| Married | 0.338** | 0.533** | 0.331* | 0.371 | 0.812** | 0.472* |
| | (0.066) | (0.113) | (0.133) | (0.194) | (0.116) | (0.195) |
| Nonwhite | -0.128 | -0.058 | -0.243 | 0.067 | -0.362 | 0.002 |
| | (0.098) | (0.154) | (0.215) | (0.204) | (0.292) | (0.207) |
| Age | -0.011 | 0.015 | -0.016 | -0.014 | 0.035 | 0.030 |
| | (0.006) | (0.013) | (0.014) | (0.013) | (0.029) | (0.020) |
| Less than a High School Diploma | -0.214* | -0.312* | 0.006 | -0.103 | -0.020 | 0.069 |
| | (0.084) | (0.123) | (0.136) | (0.151) | (0.214) | (0.217) |
| Number of Children Living Close | -0.035 | 0.003 | -0.011 | -0.112 | 0.077 | -0.132 |
| | (0.032) | (0.063) | (0.092) | (0.074) | (0.109) | (0.107) |
| Number of Daughters | -0.014 | -0.061 | -0.178 | -0.168* | -0.274 | -0.217 |
| | (0.045) | (0.071) | (0.093) | (0.075) | (0.178) | (0.114) |
| Number of Children | 0.052 | 0.067 | 0.088 | 0.035 | 0.284* | 0.086 |
| | (0.034) | (0.053) | (0.064) | (0.053) | (0.136) | (0.087) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.047 | 0.116 | -0.221 | -0.057 | -0.575** | -0.241 |
| | (0.118) | (0.125) | (0.179) | (0.222) | (0.223) | (0.257) |
| Less than $12,000 | 0.098 | 0.141 | -0.127 | 0.078 | -0.561* | -0.230 |
| | (0.116) | (0.144) | (0.205) | (0.238) | (0.227) | (0.282) |
| Own a Home | -0.010 | 0.068 | -0.011 | -0.032 | 0.187 | 0.130 |
| | (0.070) | (0.127) | (0.129) | (0.141) | (0.243) | (0.201) |
| Oldest Child is a Woman | 0.009 | 0.115 | 0.221 | 0.232 | 0.652** | 0.181 |
| | (0.078) | (0.127) | (0.161) | (0.163) | (0.195) | (0.229) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of Unmarried Children | -0.023 | -0.041 | 0.164 | 0.083 | 0.036 | 0.050 |
| | (0.032) | (0.055) | (0.086) | (0.070) | (0.128) | (0.088) |
| Number of Children who Do Not Work | -0.028 | 0.037 | -0.025 | 0.043 | -0.210 | 0.087 |
| | (0.033) | (0.064) | (0.074) | (0.057) | (0.170) | (0.103) |
| Number of Children without Children | -0.011 | | -0.089 | | -0.172 | -0.159 |
| | (0.044) | | (0.099) | | (0.179) | (0.132) |
| Observations | 230 | 152 | 97 | 124 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-14: Probability of a False Positive – Including Self-Reported Health Status**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.041 | -0.035 | 0.045 | -0.026 | -0.080 | 0.004 |
| | (0.024) | (0.052) | (0.044) | (0.047) | (0.054) | (0.047) |
| Number of IADL Limitations | -0.235** | -0.431** | -0.220** | -0.357** | -0.200** | -0.218** |
| | (0.038) | (0.086) | (0.059) | (0.062) | (0.070) | (0.058) |
| Married | 0.351** | 0.529** | 0.361* | 0.356 | 0.795** | 0.413 |
| | (0.066) | (0.119) | (0.142) | (0.210) | (0.110) | (0.215) |
| Nonwhite | -0.137 | -0.168 | -0.255 | 0.013 | -0.288 | 0.032 |
| | (0.096) | (0.159) | (0.215) | (0.199) | (0.275) | (0.204) |
| Age | -0.013* | 0.022 | -0.019 | -0.015 | 0.015 | 0.028 |
| | (0.006) | (0.013) | (0.015) | (0.013) | (0.024) | (0.020) |
| Less than a High School Diploma | -0.199* | -0.404** | 0.026 | 0.004 | -0.126 | 0.209 |
| | (0.083) | (0.127) | (0.143) | (0.153) | (0.187) | (0.201) |
| Number of Children Living Close | -0.043 | -0.020 | -0.060 | -0.160 | 0.053 | -0.068 |
| | (0.030) | (0.064) | (0.085) | (0.084) | (0.101) | (0.101) |
| Number of Daughters | -0.014 | -0.002 | -0.071 | -0.076 | 0.002 | -0.160 |
| | (0.037) | (0.064) | (0.074) | (0.062) | (0.148) | (0.084) |
| Number of Children | 0.033 | 0.062 | 0.078 | 0.040 | 0.045 | 0.064 |
| | (0.027) | (0.049) | (0.052) | (0.045) | (0.080) | (0.071) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.037 | 0.088 | -0.112 | -0.237 | -0.355 | -0.298 |
| | (0.114) | (0.129) | (0.185) | (0.210) | (0.225) | (0.231) |
| Less than $12,000 | 0.114 | 0.126 | -0.127 | -0.094 | -0.359 | -0.408 |
| | (0.113) | (0.152) | (0.205) | (0.262) | (0.212) | (0.256) |
| Own a Home | 0.006 | 0.074 | -0.088 | -0.061 | 0.121 | 0.051 |
| | (0.072) | (0.131) | (0.128) | (0.153) | (0.185) | (0.182) |
| Self-Reported Health Status of Least Healthy Excellent/Very Good (omitted) | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Good | 0.103 | 0.012 | -0.233 | 0.316 | -0.092 | 0.427 |
| | (0.089) | (0.192) | (0.179) | (0.227) | (0.391) | (0.246) |
| Fair | -0.054 | 0.254 | -0.156 | 0.405* | -0.211 | 0.537* |
| | (0.104) | (0.182) | (0.203) | (0.190) | (0.321) | (0.252) |
| Poor | -0.021 | 0.280 | -0.494* | -0.029 | -0.168 | 0.421 |
| | (0.113) | (0.171) | (0.228) | (0.224) | (0.339) | (0.287) |
| Observations | 230 | 152 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-15: Probability of a False Positive – Including Chronic Disease Indicators**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.043 | -0.030 | 0.033 | -0.075 | -0.106 | 0.051 |
| | (0.026) | (0.050) | (0.044) | (0.046) | (0.060) | (0.055) |
| Number of IADL Limitations | -0.259** | -0.345** | -0.234** | -0.357** | -0.228* | -0.275** |
| | (0.042) | (0.076) | (0.061) | (0.060) | (0.093) | (0.076) |
| Married | 0.343** | 0.514** | 0.188 | 0.543** | 0.866** | 0.226 |
| | (0.068) | (0.131) | (0.172) | (0.201) | (0.102) | (0.350) |
| Nonwhite | -0.186 | -0.191 | -0.282 | 0.105 | -0.207 | -0.011 |
| | (0.104) | (0.154) | (0.229) | (0.216) | (0.299) | (0.231) |
| Age | -0.012* | 0.024 | -0.019 | -0.009 | 0.017 | 0.036 |
| | (0.006) | (0.013) | (0.015) | (0.013) | (0.024) | (0.022) |
| Less than a High School Diploma | -0.218** | -0.250 | 0.115 | 0.022 | -0.027 | -0.064 |
| | (0.083) | (0.129) | (0.149) | (0.168) | (0.217) | (0.280) |
| Number of Children Living Close | -0.047 | 0.010 | -0.024 | -0.099 | -0.014 | -0.284* |
| | (0.031) | (0.062) | (0.084) | (0.086) | (0.112) | (0.143) |
| Number of Daughters | -0.012 | -0.040 | -0.069 | -0.127* | -0.029 | -0.248* |
| | (0.039) | (0.066) | (0.074) | (0.061) | (0.169) | (0.117) |
| Number of Children | 0.039 | 0.063 | 0.072 | 0.053 | 0.077 | 0.199* |
| | (0.028) | (0.047) | (0.051) | (0.045) | (0.098) | (0.096) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.036 | -0.079 | -0.191 | -0.126 | -0.373 | -0.576** |
| | (0.119) | (0.152) | (0.190) | (0.222) | (0.254) | (0.154) |
| Less than $12,000 | 0.097 | 0.009 | -0.224 | 0.008 | -0.450* | -0.547* |
| | (0.118) | (0.169) | (0.222) | (0.259) | (0.228) | (0.277) |
| Own a Home | -0.035 | 0.067 | -0.082 | 0.102 | 0.192 | 0.005 |
| | (0.069) | (0.137) | (0.136) | (0.161) | (0.221) | (0.226) |
| Ever Received Diagnosis for: | | | | | | |
| Cancer | -0.092 | 0.311** | -0.121 | -0.322* | 0.126 | 0.012 |
| | (0.103) | (0.111) | (0.180) | (0.142) | (0.319) | (0.307) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Heart Disease | -0.036 | -0.152 | 0.036 | -0.022 | -0.211 | 0.045 |
| | (0.071) | (0.128) | (0.142) | (0.149) | (0.265) | (0.225) |
| High Blood Pressure | -0.058 | 0.078 | 0.241 | -0.175 | 0.098 | 0.554** |
| | (0.070) | (0.139) | (0.155) | (0.174) | (0.304) | (0.157) |
| Lung Disease | -0.066 | 0.108 | 0.097 | 0.300 | 0.342 | 0.196 |
| | (0.109) | (0.138) | (0.171) | (0.172) | (0.223) | (0.211) |
| Diabetes | 0.106 | 0.217 | -0.105 | -0.138 | -0.446 | 0.678** |
| | (0.081) | (0.114) | (0.178) | (0.166) | (0.247) | (0.139) |
| Stroke | 0.082 | -0.326* | -0.114 | -0.189 | -0.239 | -0.408* |
| | (0.079) | (0.157) | (0.151) | (0.168) | (0.299) | (0.197) |
| Observations | 230 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-16: Probability of a False Positive – Including Cognitive Impairment Indicator**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.046 | -0.017 | 0.035 | -0.054 | -0.081 | 0.030 |
| | (0.025) | (0.047) | (0.042) | (0.041) | (0.050) | (0.043) |
| Number of IADL Limitations | -0.243** | -0.325** | -0.149* | -0.308** | -0.211** | -0.215** |
| | (0.039) | (0.067) | (0.064) | (0.054) | (0.075) | (0.059) |
| Married | 0.344** | 0.527** | 0.321* | 0.359 | 0.774** | 0.465* |
| | (0.066) | (0.112) | (0.140) | (0.194) | (0.114) | (0.189) |
| Nonwhite | -0.137 | -0.088 | -0.195 | 0.167 | -0.245 | 0.016 |
| | (0.102) | (0.140) | (0.208) | (0.192) | (0.261) | (0.204) |
| Age | -0.012 | 0.019 | -0.004 | -0.009 | 0.014 | 0.031 |
| | (0.006) | (0.012) | (0.015) | (0.011) | (0.024) | (0.018) |
| Less than a High School Diploma | -0.219** | -0.280* | 0.012 | -0.061 | -0.144 | 0.150 |
| | (0.084) | (0.121) | (0.138) | (0.143) | (0.183) | (0.191) |
| Number of Children Living Close | -0.042 | -0.000 | -0.029 | -0.124 | 0.045 | -0.141 |
| | (0.031) | (0.059) | (0.082) | (0.074) | (0.094) | (0.105) |
| Number of Daughters | -0.021 | -0.000 | -0.060 | -0.089 | 0.011 | -0.110 |
| | (0.039) | (0.061) | (0.074) | (0.058) | (0.138) | (0.074) |
| Number of Children | 0.038 | 0.037 | 0.071 | 0.034 | 0.037 | 0.073 |
| | (0.028) | (0.044) | (0.050) | (0.043) | (0.078) | (0.065) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.045 | 0.108 | -0.148 | -0.098 | -0.342 | -0.274 |
| | (0.117) | (0.122) | (0.172) | (0.219) | (0.218) | (0.225) |
| Less than $12,000 | 0.097 | 0.126 | -0.174 | 0.040 | -0.358 | -0.270 |
| | (0.118) | (0.141) | (0.199) | (0.240) | (0.210) | (0.247) |
| Own a Home | -0.012 | 0.100 | -0.059 | -0.010 | 0.096 | 0.042 |
| | (0.070) | (0.130) | (0.128) | (0.136) | (0.191) | (0.179) |
| Cognitively Impaired | 0.028 | -0.158 | -0.305 | -0.178 | 0.099 | -0.090 |
| | (0.202) | (0.122) | (0.190) | (0.140) | (0.237) | (0.203) |
| Missing Cognitive Score | -0.025 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.084) | | | | | |
| Observations | 230 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

**Table 4-17: Probability of a False Positive – Including Transfers from Parents to Children**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.041 | -0.036 | 0.036 | -0.052 | -0.123* | 0.018 |
| | (0.024) | (0.052) | (0.042) | (0.042) | (0.057) | (0.046) |
| Number of IADL Limitations | -0.252** | -0.370** | -0.203** | -0.327** | -0.242** | -0.221** |
| | (0.040) | (0.074) | (0.056) | (0.054) | (0.086) | (0.059) |
| Married | 0.323** | 0.554** | 0.279* | 0.360 | 0.905** | 0.508** |
| | (0.069) | (0.118) | (0.139) | (0.206) | (0.089) | (0.190) |
| Nonwhite | -0.160 | -0.079 | -0.177 | 0.076 | -0.512 | -0.091 |
| | (0.103) | (0.156) | (0.209) | (0.195) | (0.271) | (0.227) |
| Age | -0.010 | 0.021 | -0.011 | -0.007 | 0.052 | 0.026 |
| | (0.006) | (0.012) | (0.015) | (0.011) | (0.033) | (0.018) |
| Less than a High School Diploma | -0.216* | -0.310* | -0.021 | -0.022 | -0.267 | 0.207 |
| | (0.084) | (0.127) | (0.142) | (0.156) | (0.233) | (0.205) |
| Number of Children Living Close | -0.042 | 0.036 | -0.039 | -0.118 | 0.158 | -0.144 |
| | (0.031) | (0.063) | (0.085) | (0.074) | (0.141) | (0.109) |
| Number of Daughters | -0.015 | -0.004 | -0.064 | -0.096 | -0.088 | -0.138 |
| | (0.038) | (0.064) | (0.073) | (0.061) | (0.171) | (0.084) |
| Number of Children | 0.033 | 0.018 | 0.073 | 0.043 | 0.108 | 0.081 |
| | (0.027) | (0.049) | (0.051) | (0.043) | (0.115) | (0.074) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -0.059 | 0.114 | -0.171 | -0.127 | -0.414 | -0.189 |
| | (0.122) | (0.131) | (0.172) | (0.215) | (0.242) | (0.260) |
| Less than $12,000 | 0.068 | 0.076 | -0.165 | -0.001 | -0.643** | -0.181 |
| | (0.126) | (0.164) | (0.223) | (0.241) | (0.207) | (0.269) |
| Own a Home | -0.025 | 0.088 | -0.022 | 0.025 | 0.267 | 0.054 |
| | (0.071) | (0.135) | (0.131) | (0.141) | (0.266) | (0.193) |
| Ever Gave Financial Assistance to Kids | 0.039 | 0.141 | -0.014 | 0.151 | 0.169 | 0.116 |
| | (0.072) | (0.122) | (0.140) | (0.144) | (0.249) | (0.176) |
| Ever Deeded a Home | -0.174 | 0.210 | 0.150 | -0.026 | 0.275 | 0.290 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.196) | (0.157) | (0.170) | (0.309) | (0.249) | (0.222) |
| Children include in Will | -0.021 | -0.250 | -0.039 | -0.056 | -0.575** | -0.022 |
| | (0.076) | (0.136) | (0.171) | (0.179) | (0.162) | (0.205) |
| Ever Cared for Grandchildren | 0.093 | -0.122 | -0.072 | 0.102 | -0.192 | -0.041 |
| | (0.074) | (0.126) | (0.141) | (0.157) | (0.262) | (0.184) |
| Observations | 230 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | 0.69 | 0.64 | 0.64 | 0.53 | 0.51 | 0.47 |

## Table 4-18: Probability of a False Negative – Basic Model

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.082** | -0.004 | -0.318** | -0.016 | -0.034 | -0.020 |
| | (0.021) | (0.023) | (0.120) | (0.030) | (0.034) | (0.041) |
| Number of IADL Limitations | 0.167** | 0.157** | 0.551** | 0.252** | 0.191* | 0.173** |
| | (0.028) | (0.036) | (0.144) | (0.045) | (0.078) | (0.048) |
| Married | -0.206** | -0.166* | | -0.350** | -0.252* | -0.424** |
| | (0.045) | (0.065) | | (0.111) | (0.111) | (0.145) |
| Nonwhite | 0.019 | -0.099 | 0.145 | -0.185 | -0.043 | -0.059 |
| | (0.070) | (0.060) | (0.280) | (0.123) | (0.118) | (0.172) |
| Age | 0.010* | -0.001 | -0.011 | 0.016 | -0.032 | 0.005 |
| | (0.005) | (0.007) | (0.025) | (0.010) | (0.017) | (0.011) |
| Dropout | 0.067 | 0.070 | 0.216 | 0.113 | -0.180 | 0.234 |
| | (0.058) | (0.081) | (0.232) | (0.119) | (0.092) | (0.132) |
| Number of Children Living Close | 0.071** | 0.073 | 0.125 | 0.096 | 0.370* | 0.106 |
| | (0.027) | (0.043) | (0.144) | (0.073) | (0.160) | (0.108) |
| Number of Daughters | 0.004 | 0.048 | 0.125 | -0.015 | 0.114 | -0.157* |
| | (0.031) | (0.038) | (0.128) | (0.066) | (0.070) | (0.078) |
| Number of Children | -0.018 | -0.006 | -0.114 | 0.019 | -0.037 | 0.085 |
| | (0.023) | (0.032) | (0.089) | (0.048) | (0.068) | (0.047) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.086 | 0.090 | -0.360 | -0.036 | -0.114 | -0.217 |
| | (0.079) | (0.100) | (0.271) | (0.141) | (0.118) | (0.166) |
| Less than $12,000 | 0.110 | 0.311* | -0.293 | 0.008 | -0.178 | -0.130 |
| | (0.084) | (0.142) | (0.313) | (0.168) | (0.096) | (0.191) |
| Own a Home | -0.060 | 0.051 | 0.473* | 0.092 | -0.098 | -0.011 |
| | (0.053) | (0.070) | (0.225) | (0.115) | (0.179) | (0.135) |
| Observations | 229 | 153 | 97 | 125 | 80 | 76 |
| Average Probability | | | | | | |

**Table 4-19: Probability of a False Negative – Including Number of Schedulable & Unschedulable Limitations**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of Schedulable Limitations | 0.084** | 0.138** | 0.289** | 0.173** | 0.170** | 0.119** |
| | (0.016) | (0.033) | (0.082) | (0.032) | (0.062) | (0.032) |
| Number of Unschedulable Limitations | -0.091** | -0.100* | -0.370* | -0.113* | -0.116 | -0.063 |
| | (0.035) | (0.050) | (0.178) | (0.053) | (0.062) | (0.068) |
| Married | -0.183** | -0.138* | | -0.315** | -0.251* | -0.403** |
| | (0.051) | (0.067) | | (0.110) | (0.117) | (0.145) |
| Nonwhite | -0.035 | -0.069 | 0.245 | -0.177 | 0.096 | -0.083 |
| | (0.063) | (0.071) | (0.217) | (0.122) | (0.205) | (0.172) |
| Age | 0.011* | 0.000 | -0.007 | 0.017 | -0.018 | 0.006 |
| | (0.005) | (0.007) | (0.020) | (0.010) | (0.019) | (0.011) |
| Less than a High School Diploma | 0.059 | 0.048 | -0.061 | 0.136 | -0.191 | 0.286* |
| | (0.059) | (0.076) | (0.191) | (0.113) | (0.102) | (0.125) |
| Number of Children Living Close | 0.074** | 0.086* | 0.010 | 0.082 | 0.304* | 0.101 |
| | (0.029) | (0.042) | (0.106) | (0.067) | (0.144) | (0.116) |
| Number of Daughters | 0.003 | 0.048 | 0.100 | 0.011 | 0.105 | -0.162* |
| | (0.034) | (0.040) | (0.094) | (0.065) | (0.079) | (0.077) |
| Number of Children | -0.015 | -0.017 | -0.082 | 0.012 | -0.011 | 0.081 |
| | (0.024) | (0.031) | (0.072) | (0.046) | (0.078) | (0.046) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.129 | 0.150 | -0.288 | -0.004 | 0.087 | -0.156 |
| | (0.083) | (0.106) | (0.223) | (0.140) | (0.179) | (0.168) |
| Less than $12,000 | 0.139 | 0.308* | -0.322 | 0.073 | -0.041 | -0.063 |
| | (0.084) | (0.143) | (0.248) | (0.161) | (0.150) | (0.191) |
| Own a Home | -0.080 | 0.051 | 0.157 | 0.048 | -0.079 | -0.001 |
| | (0.057) | (0.072) | (0.164) | (0.111) | (0.195) | (0.132) |
| Observations | 270 | 151 | 67 | 146 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.43 | 0.41 | 0.32 | 0.53 |

**Table 4-20: Probability of a False Negative – Including Additional Child Characteristics**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.084** | -0.003 | -0.190 | -0.005 | -0.023 | -0.024 |
| | (0.021) | (0.022) | (0.329) | (0.032) | (0.037) | (0.042) |
| Number of IADL Limitations | 0.167** | 0.151** | 0.356 | 0.271** | 0.161 | 0.184** |
| | (0.028) | (0.038) | (0.622) | (0.049) | (0.097) | (0.050) |
| Married | -0.216** | -0.178** | | -0.377** | -0.270* | -0.403* |
| | (0.044) | (0.066) | | (0.115) | (0.134) | (0.163) |
| Nonwhite | 0.037 | -0.078 | 0.041 | -0.304* | -0.037 | -0.016 |
| | (0.075) | (0.065) | (0.184) | (0.122) | (0.118) | (0.193) |
| Age | 0.011* | 0.007 | -0.019 | 0.012 | -0.018 | -0.001 |
| | (0.005) | (0.007) | (0.034) | (0.012) | (0.025) | (0.012) |
| Less than a High School Diploma | 0.070 | 0.096 | -0.045 | 0.124 | -0.134 | 0.161 |
| | (0.057) | (0.087) | (0.091) | (0.126) | (0.111) | (0.144) |
| Number of Children Living Close | 0.076** | 0.051 | 0.195 | 0.059 | 0.320 | 0.117 |
| | (0.027) | (0.041) | (0.363) | (0.083) | (0.176) | (0.128) |
| Number of Daughters | -0.028 | 0.048 | 0.255 | 0.026 | 0.108 | -0.212* |
| | (0.036) | (0.054) | (0.442) | (0.092) | (0.114) | (0.108) |
| Number of Children | 0.012 | 0.029 | -0.277 | -0.056 | -0.008 | 0.089 |
| | (0.027) | (0.038) | (0.491) | (0.059) | (0.105) | (0.058) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.062 | 0.081 | -0.688* | 0.022 | -0.078 | -0.191 |
| | (0.078) | (0.101) | (0.316) | (0.151) | (0.138) | (0.174) |
| Less than $12,000 | 0.073 | 0.316* | -0.210 | 0.041 | -0.136 | -0.118 |
| | (0.080) | (0.150) | (0.271) | (0.180) | (0.114) | (0.199) |
| Own a Home | -0.055 | 0.061 | 0.744* | 0.083 | -0.098 | 0.030 |
| | (0.053) | (0.069) | (0.309) | (0.120) | (0.210) | (0.145) |
| Oldest Child is a Woman | 0.095 | 0.097 | -0.300 | -0.107 | -0.030 | 0.023 |
| | (0.060) | (0.085) | (0.359) | (0.137) | (0.203) | (0.167) |
| Number of Unmarried Children | -0.002 | -0.001 | 0.269 | 0.057 | 0.067 | -0.034 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.032) | (0.043) | (0.462) | (0.062) | (0.103) | (0.074) |
| Number of Children who Do Not Work | -0.044 | -0.107* | 0.000 | 0.169* | -0.078 | 0.145 |
| | (0.032) | (0.048) | (0.035) | (0.080) | (0.117) | (0.090) |
| Number of Children without Children | -0.049 | | -0.169 | | -0.014 | -0.055 |
| | (0.041) | | (0.290) | | (0.130) | (0.098) |
| Observations | 270 | 150 | 67 | 145 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.43 | 0.41 | 0.32 | 0.53 |

## Table 4-21: Probability of a False Negative – Including Self-Reported Health Status

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.086** | -0.016 | -0.376* | -0.020 | 0.008 | -0.021 |
| | (0.022) | (0.023) | (0.151) | (0.031) | (0.016) | (0.042) |
| Number of IADL Limitations | 0.166** | 0.163** | 0.641** | 0.253** | 0.070 | 0.179** |
| | (0.028) | (0.041) | (0.196) | (0.046) | (0.121) | (0.050) |
| Married | -0.208** | -0.176** | | -0.373** | -0.064 | -0.453** |
| | (0.045) | (0.066) | | (0.113) | (0.088) | (0.144) |
| Nonwhite | 0.027 | -0.099 | 0.079 | -0.173 | 0.062 | -0.093 |
| | (0.072) | (0.054) | (0.306) | (0.126) | (0.140) | (0.181) |
| Age | 0.011* | 0.000 | -0.021 | 0.018 | -0.008 | 0.005 |
| | (0.005) | (0.007) | (0.030) | (0.011) | (0.015) | (0.012) |
| Less than a High School Diploma | 0.068 | 0.062 | 0.231 | 0.098 | 0.001 | 0.246 |
| | (0.057) | (0.078) | (0.241) | (0.122) | (0.053) | (0.136) |
| Number of Children Living Close | 0.071** | 0.078* | 0.166 | 0.098 | 0.085 | 0.111 |
| | (0.027) | (0.039) | (0.171) | (0.075) | (0.152) | (0.115) |
| Number of Daughters | 0.006 | 0.047 | 0.183 | -0.025 | 0.077 | -0.147 |
| | (0.031) | (0.037) | (0.150) | (0.069) | (0.128) | (0.079) |
| Number of Children | -0.020 | -0.015 | -0.162 | 0.025 | -0.026 | 0.082 |
| | (0.023) | (0.030) | (0.109) | (0.048) | (0.047) | (0.048) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.081 | 0.089 | -0.416 | -0.030 | -0.017 | -0.234 |
| | (0.080) | (0.101) | (0.293) | (0.142) | (0.042) | (0.169) |
| Less than $12,000 | 0.103 | 0.309* | -0.324 | 0.001 | -0.031 | -0.103 |
| | (0.084) | (0.147) | (0.322) | (0.170) | (0.060) | (0.197) |
| Own a Home | -0.061 | 0.080 | 0.528* | 0.092 | 0.114 | -0.024 |
| | (0.054) | (0.070) | (0.238) | (0.120) | (0.171) | (0.141) |
| Self-Reported Health Status of Least Healthy Excellent/Very Good (omitted) | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Good | 0.006 | -0.102 | 0.110 | 0.023 | -0.033 | -0.188 |
| | (0.076) | (0.076) | (0.632) | (0.207) | (0.065) | (0.349) |
| Fair | -0.018 | -0.042 | 0.114 | 0.054 | -0.059 | 0.126 |
| | (0.072) | (0.089) | (0.580) | (0.202) | (0.110) | (0.347) |
| Poor | 0.052 | 0.115 | -0.151 | 0.122 | -0.326 | -0.037 |
| | (0.102) | (0.135) | (0.517) | (0.219) | (0.239) | (0.347) |
| Observations | 270 | 151 | 67 | 146 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.43 | 0.41 | 0.32 | 0.53 |

**Table 4-22: Probability of a False Negative – Including Chronic Disease Indicators**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.085** | -0.005 | | -0.003 | 0.011 | -0.024 |
| | (0.022) | (0.021) | | (0.033) | (0.036) | (0.044) |
| Number of IADL Limitations | 0.157** | 0.146** | | 0.301** | 0.156 | 0.218** |
| | (0.028) | (0.040) | | (0.058) | (0.123) | (0.057) |
| Married | -0.199** | -0.170** | | -0.175 | -0.164 | -0.424* |
| | (0.046) | (0.062) | | (0.160) | (0.118) | (0.172) |
| Nonwhite | 0.014 | -0.104* | | -0.355** | -0.020 | -0.169 |
| | (0.068) | (0.048) | | (0.117) | (0.118) | (0.194) |
| Age | 0.009 | 0.000 | | 0.015 | -0.032 | 0.005 |
| | (0.005) | (0.006) | | (0.011) | (0.022) | (0.012) |
| Less than a High School Diploma | 0.063 | 0.056 | | 0.149 | -0.143 | 0.261 |
| | (0.056) | (0.073) | | (0.133) | (0.130) | (0.148) |
| Number of Children Living Close | 0.081** | 0.070 | | 0.091 | 0.362 | 0.094 |
| | (0.028) | (0.039) | | (0.081) | (0.270) | (0.132) |
| Number of Daughters | 0.014 | 0.038 | | 0.024 | 0.117 | -0.134 |
| | (0.031) | (0.034) | | (0.072) | (0.095) | (0.086) |
| Number of Children | -0.029 | -0.004 | | 0.023 | -0.044 | 0.098 |
| | (0.023) | (0.030) | | (0.054) | (0.072) | (0.053) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.084 | 0.104 | | 0.081 | -0.059 | -0.141 |
| | (0.079) | (0.096) | | (0.162) | (0.108) | (0.199) |
| Less than $12,000 | 0.116 | 0.336* | | 0.184 | -0.130 | -0.137 |
| | (0.083) | (0.148) | | (0.192) | (0.125) | (0.215) |
| Own a Home | -0.065 | 0.045 | | 0.134 | -0.052 | -0.009 |
| | (0.053) | (0.062) | | (0.126) | (0.227) | (0.153) |
| Ever Received Diagnosis for: | | | | | | |
| Cancer | -0.016 | -0.069 | | -0.165 | 0.020 | -0.423** |
| | (0.058) | (0.055) | | (0.127) | (0.210) | (0.147) |

| | | | | | |
|---|---|---|---|---|---|
| Heart Disease | 0.113* | -0.058 | 0.067 | -0.030 | -0.095 |
| | (0.056) | (0.060) | (0.127) | (0.107) | (0.148) |
| High Blood Pressure | -0.017 | 0.098 | -0.200 | -0.145 | 0.026 |
| | (0.050) | (0.052) | (0.128) | (0.176) | (0.167) |
| Lung Disease | -0.119** | 0.068 | -0.168 | -0.111 | -0.112 |
| | (0.043) | (0.107) | (0.135) | (0.135) | (0.166) |
| Diabetes | 0.052 | 0.053 | -0.339** | 0.078 | 0.045 |
| | (0.081) | (0.101) | (0.123) | (0.234) | (0.198) |
| Stroke | -0.016 | -0.051 | -0.202 | -0.124 | -0.172 |
| | (0.066) | (0.061) | (0.134) | (0.127) | (0.159) |
| Observations | 270 | 151 | 146 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.41 | 0.32 | 0.53 |

**Table 4-23: Probability of a False Negative – Including Cognitive Impairment Indicator**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.082** | -0.005 | -0.390* | -0.017 | -0.034 | -0.018 |
| | (0.021) | (0.020) | (0.171) | (0.031) | (0.035) | (0.041) |
| Number of IADL Limitations | 0.151** | 0.185** | 0.555** | 0.250** | 0.190* | 0.193** |
| | (0.029) | (0.045) | (0.185) | (0.047) | (0.081) | (0.054) |
| Married | -0.233** | -0.165** | | -0.356** | -0.252* | -0.385* |
| | (0.048) | (0.058) | | (0.116) | (0.111) | (0.158) |
| Nonwhite | -0.004 | -0.102* | 0.201 | -0.189 | -0.042 | -0.065 |
| | (0.066) | (0.048) | (0.314) | (0.125) | (0.119) | (0.172) |
| Age | 0.010* | 0.001 | -0.019 | 0.016 | -0.032 | 0.004 |
| | (0.005) | (0.006) | (0.026) | (0.010) | (0.017) | (0.011) |
| Less than a High School Diploma | 0.061 | 0.056 | 0.213 | 0.110 | -0.181 | 0.250 |
| | (0.056) | (0.073) | (0.264) | (0.120) | (0.094) | (0.133) |
| Number of Children Living Close | 0.069** | 0.051 | 0.235 | 0.096 | 0.372* | 0.102 |
| | (0.026) | (0.039) | (0.184) | (0.072) | (0.163) | (0.108) |
| Number of Daughters | -0.002 | 0.057 | 0.182 | -0.014 | 0.114 | -0.150 |
| | (0.031) | (0.035) | (0.147) | (0.066) | (0.071) | (0.080) |
| Number of Children | -0.012 | -0.000 | -0.222 | 0.019 | -0.036 | 0.079 |
| | (0.023) | (0.028) | (0.124) | (0.048) | (0.069) | (0.048) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.099 | 0.096 | -0.105 | -0.038 | -0.114 | -0.225 |
| | (0.080) | (0.093) | (0.396) | (0.142) | (0.118) | (0.166) |
| Less than $12,000 | 0.103 | 0.305* | -0.167 | 0.004 | -0.177 | -0.118 |
| | (0.082) | (0.142) | (0.394) | (0.170) | (0.096) | (0.194) |
| Own a Home | -0.058 | 0.053 | 0.639* | 0.093 | -0.099 | -0.040 |
| | (0.052) | (0.062) | (0.272) | (0.115) | (0.181) | (0.140) |
| Cognitively Impaired | 0.092 | -0.146* | 0.584* | 0.024 | 0.009 | -0.130 |
| | (0.423) | (0.060) | (0.283) | (0.138) | (0.153) | (0.156) |
| Missing Cognitive Score | 0.113 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.088) | | | | | |
| Observations | 270 | 151 | 67 | 146 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.43 | 0.41 | 0.32 | 0.53 |

**Table 4-24: Probability of a False Negative – Including Transfers from Parents to Children**

Marginal Effects and Standard Errors from Probit Models

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| Number of ADL Limitations | -0.084** | -0.003 | -0.448** | -0.017 | -0.010 | -0.042 |
| | (0.021) | (0.024) | (0.154) | (0.031) | (0.030) | (0.047) |
| Number of IADL Limitations | 0.168** | 0.152** | 0.716** | 0.275** | 0.028 | 0.255** |
| | (0.028) | (0.036) | (0.204) | (0.049) | (0.084) | (0.062) |
| Married | -0.210** | -0.169** | | -0.390** | -0.133 | -0.648** |
| | (0.045) | (0.065) | | (0.108) | (0.153) | (0.126) |
| Nonwhite | -0.002 | -0.110 | -0.030 | -0.337** | -0.023 | -0.246 |
| | (0.070) | (0.062) | (0.293) | (0.115) | (0.056) | (0.204) |
| Age | 0.010* | 0.002 | -0.033 | 0.015 | -0.007 | 0.016 |
| | (0.005) | (0.007) | (0.029) | (0.011) | (0.020) | (0.013) |
| Less than a High School Diploma | 0.068 | 0.037 | 0.306 | 0.146 | -0.027 | 0.221 |
| | (0.058) | (0.078) | (0.259) | (0.126) | (0.061) | (0.143) |
| Number of Children Living Close | 0.075** | 0.077 | -0.045 | 0.099 | 0.075 | 0.015 |
| | (0.028) | (0.043) | (0.168) | (0.082) | (0.218) | (0.129) |
| Number of Daughters | 0.004 | 0.062 | 0.350* | -0.032 | 0.018 | -0.188* |
| | (0.031) | (0.042) | (0.155) | (0.068) | (0.054) | (0.086) |
| Number of Children | -0.020 | -0.022 | -0.149 | 0.029 | -0.011 | 0.136* |
| | (0.024) | (0.033) | (0.098) | (0.051) | (0.032) | (0.056) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.085 | 0.065 | -0.743** | -0.058 | -0.054 | -0.262 |
| | (0.080) | (0.101) | (0.191) | (0.143) | (0.111) | (0.185) |
| Less than $12,000 | 0.108 | 0.188 | -0.756** | -0.036 | -0.068 | -0.227 |
| | (0.089) | (0.141) | (0.174) | (0.177) | (0.108) | (0.212) |
| Own a Home | -0.051 | 0.065 | 0.646** | 0.164 | -0.194 | -0.050 |
| | (0.056) | (0.069) | (0.219) | (0.123) | (0.220) | (0.158) |
| Ever Gave Financial Assistance to Kids | 0.004 | -0.090 | -0.765** | 0.069 | 0.032 | -0.024 |
| | (0.055) | (0.076) | (0.211) | (0.132) | (0.078) | (0.169) |
| Ever Deeded a Home | -0.067 | 0.285 | 0.724* | 0.018 | 0.997** | -0.124 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.061) | (0.231) | (0.293) | (0.195) | (0.005) | (0.259) |
| Children include in Will | -0.043 | -0.085 | -0.074 | -0.382** | -0.337 | -0.177 |
| | (0.068) | (0.131) | (0.459) | (0.145) | (0.330) | (0.180) |
| Ever Cared for Grandchildren | 0.012 | 0.078 | 0.198 | 0.024 | 0.310 | 0.556** |
| | (0.072) | (0.120) | (0.356) | (0.163) | (0.353) | (0.093) |
| Observations | 270 | 151 | 67 | 146 | 71 | 96 |
| Average Probability | 0.26 | 0.25 | 0.43 | 0.41 | 0.32 | 0.53 |

**Table 4-25: Economic Impact of Inaccurate Household Predictions about Future Care from Children**

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| Probability: | 1995 | 1998 | 2000 | 1995 | 1998 | 2000 |
| Spent Assets in Last 2 years | | | | | | |
| Marginal Effect of False Positive | 0.031 | **0.304*** ** | -0.107 | 0.149 | -0.151 | 0.084 |
| | [0.04] | **[6.97]** | [0.51] | [0.9] | [0.67] | [0.4] |
| Marginal Effect of a False Negative | 0.172 | 0.192 | 0.250 | 0.079 | -0.026 | -0.105 |
| | (0.129) | (0.150) | (0.223) | (0.168) | (0.177) | (0.152) |
| Average Probability | 29.35 | 24.18 | 17.95 | 21.65 | 22.62 | 16.07 |
| Saved Assets in Last 2 years | | | | | | |
| Marginal Effect of False Positive | -0.107 | -0.094 | -0.1 | **-0.169*** | -0.088 | 0.013 |
| | [1.81] | [0.92] | [0.93] | **[2.79]** | [0.55] | [0.05] |
| Marginal Effect of a False Negative | 0.096 | 0.024 | -0.014 | 0.036 | -0.011 | **-0.094*** |
| | (0.078) | (0.113) | (0.133) | (0.081) | (0.121) | **(0.056)** |
| Average Probability | 21.73 | 24.16 | 14.14 | 15.22 | 13.19 | 9.47 |
| Had Difficulty Meeting Nutritional Needs | | | | | | |
| Marginal Effect of False Positive | -0.047 | -0.009 | na | -0.04 | na | 0.013 |
| | [1.15] | [0.04] | | [0.85] | | [0.02] |
| Marginal Effect of a False Negative | -0.021 | **-0.094**** | na | **-0.086***** | na | 0.046 |
| | (0.038) | **(0.037)** | | **(0.029)** | | (0.101) |
| Average Probability | 8.27 | 5.59 | | 7.81 | | 10.47 |
| At Least 1 Respondent Currently in Nursing Facility | | | | | | |
| Marginal Effect of False Positive | 0.007 | **0.107*** ** | -0.019 | 0.073 | 0.008 | 0.076 |
| | [0.07] | **[7.35]** | [0.14] | [0.87] | [0.01] | [0.74] |
| Marginal Effect of a False Negative | -0.023 | -0.046 | **-0.116***** | **0.159*** | -0.074 | 0.092 |
| | (0.021) | (0.028) | **(0.034)** | **(0.090)** | (0.073) | (0.084) |
| Average Probability | 5.20 | 8.22 | 10.71 | 12.92 | 20.53 | 19.77 |
| Currently Receiving Community-Based Formal Care | | | | | | |
| Marginal Effect of False Positive | -0.106 | **-0.265***** | 0.047 | 0.081 | -0.152 | 0.142 |
| | [1.96] | **[7.77]** | [0.29] | [0.64] | [1.36] | [1.09] |
| Marginal Effect of a False Negative | 0.079 | 0.104 | 0.035 | -0.034 | 0.115 | 0.112 |
| | (0.074) | (0.111) | (0.125) | (0.092) | (0.162) | (0.117) |
| Average Probability | 26.25 | 32.27 | 33.52 | 38.49 | 31.45 | 54.55 |
| Receiving Community-Based Care not Fully Covered by Insurance | | | | | | |
| Marginal Effect of False Positive | -0.052 | **-0.166***** | na | 0.048 | -0.027 | **0.127*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | [1.1] | **[5.25]** | | [0.55] | [0.06] | **[3.18]** |
| Marginal Effect of a False Negative | -0.011 | -0.014 | 0.037 | -0.010 | **0.277*** | -0.000 |
| | (0.037) | (0.061) | (0.106) | (0.058) | **(0.166)** | (0.080) |
| Average Probability | 7.60 | 9.54 | 9.74 | 9.23 | **10.67** | 14.53 |

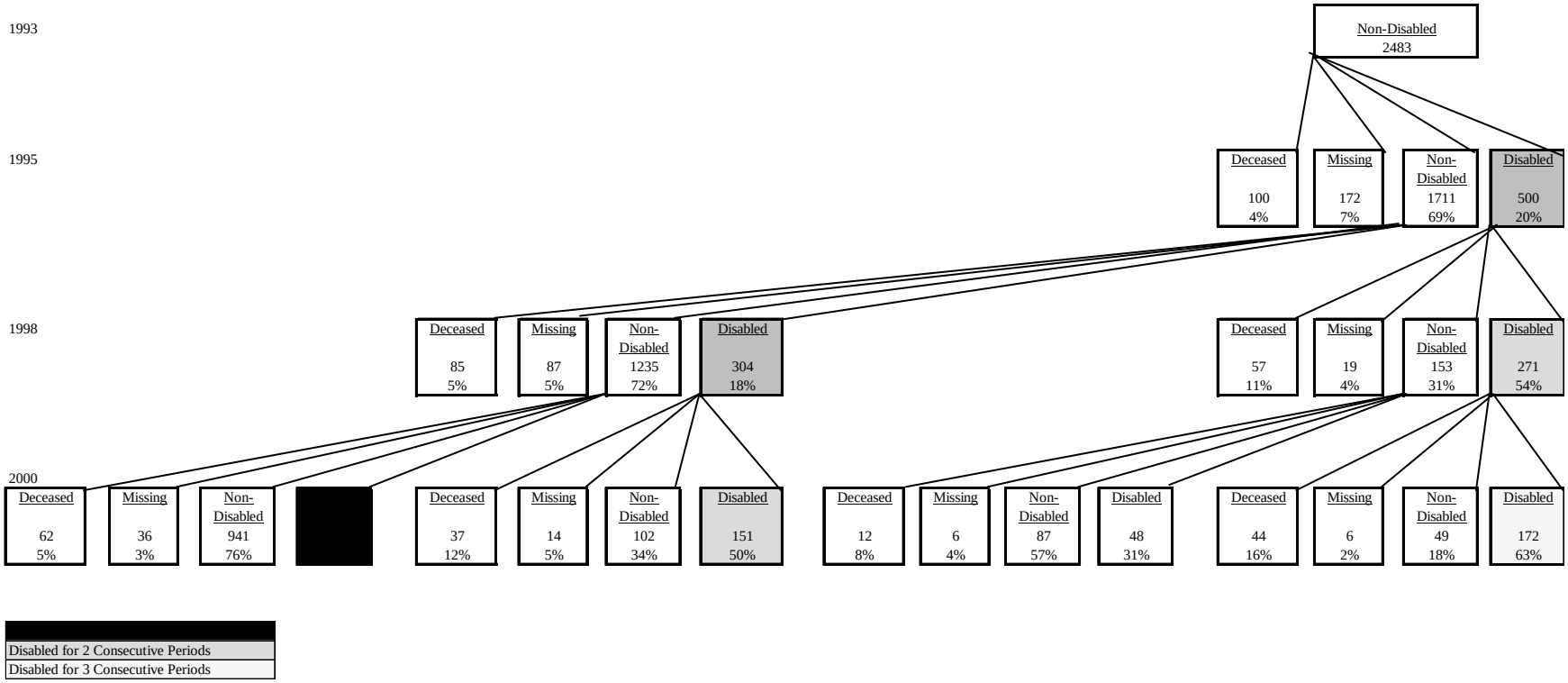
**Table 4-26: Psychological Impact of Inaccurate Household Predictions about Future Care from Children**

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| Probability | 1995 | 1998 | 2000 | 1995 | 1998 | 2000 |
| Currently Receiving Treatment for Psychological Disorder | | | | | | |
| Marginal Effect of False Positive | 0.05 | 0.07 | -0.06 | 0.03 | -0.01 | -0.09 |
| | [2.16] | [2.14] | [1.35] | [0.29] | [0.02] | [1.43] |
| Marginal Effect of a False Negative | -0.020 | 0.025 | -0.009 | -0.026 | -0.028 | 0.007 |
| | (0.036) | (0.059) | (0.062) | (0.046) | (0.076) | (0.070) |
| Average Probability | 10.02 | 11.67 | 9.00 | 12.63 | 17.50 | 14.97 |
| Scored 4 Plus on Shortened CES-D | | | | | | |
| Marginal Effect of False Positive | 0.03 | **-0.22** | -0.11 | **0.24** | -0.01 | 0.02 |
| | [0.29] | **[4.91]** | [1.28] | **[6.75]** | [0.01] | [0.04] |
| Marginal Effect of a False Negative | -0.038 | **-0.114*** | 0.046 | -0.066 | 0.105 | 0.045 |
| | (0.065) | **(0.067)** | (0.130) | (0.088) | (0.141) | (0.115) |
| Average Probability | 26.54 | 23.46 | 18.99 | 36.11 | 20.91 | 31.67 |

**Table 4-27: Impact of Inaccurate Predictions about Future Care from Children on Subjective Probabilities of Future Events**

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| Subjective Probability of: | 1995 | 1998 | 2000 | 1995 | 1998 | 2000 |
| Living an Additional 5 Years | | | | | | |
| Marginal Effect of False Positive | 4.82 | | 5.452 | | -16.306 | **-37.909** |
| | [0.69] | | [0.26] | | [1.33] | **[7.67]** |
| Marginal Effect of a False Negative | -0.810 | | -9.554 | | **23.710*** | -13.203 |
| | (6.257) | | (14.277) | | **(13.186)** | (11.902) |
| Average Subjective Probability | 41.42 | | 31.38 | | 28.79 | 27.84 |
| Moving into a Nursing Home in Next 5 Years | | | | | | |
| Marginal Effect of False Positive | -2.977 | 4.81 | 0.583 | 0.397 | -0.789 | 5.62 |
| | [0.28] | [0.79] | [0] | [0] | [0.01] | [0.24] |
| Marginal Effect of a False Negative | -6.824 | -0.961 | -11.920 | 11.922 | -9.749 | -7.148 |
| | (5.602) | (8.582) | (12.915) | (9.404) | (12.099) | (11.246) |
| Average Subjective Probability | 20.64 | 14.92 | 22.03 | 17.50 | 20.17 | 21.39 |
| Giving Financial Assistance in Next 10 Years | | | | | | |
| Marginal Effect of False Positive | **8.076** | **9.509** | -3.308 | -7.838 | -10.679 | -4.59 |
| | **[2.75]** | **[2.94]** | [0.07] | [0.98] | [1.15] | [0.39] |
| Marginal Effect of a False Negative | 1.882 | -1.759 | -4.170 | -4.346 | -1.924 | **-16.477**** |
| | (5.060) | (5.387) | (12.304) | (7.306) | (10.134) | **(6.952)** |
| Average Subjective Probability | 14.59 | 20.65 | 29.23 | 18.53 | 22.16 | 14.50 |
| Receiving Financial Assistance in Next 10 Years | | | | | | |
| Marginal Effect of False Positive | -5.853 | -5.287 | -10.376 | 4.671 | 8.796 | -9.933 |
| | [0.97] | [1] | [1.16] | [0.57] | [0.98] | [1.27] |
| Marginal Effect of a False Negative | 1.614 | 9.880 | -4.538 | -0.186 | -5.680 | -8.224 |
| | (5.948) | (6.211) | (6.097) | (4.722) | (9.917) | (5.883) |
| Average Subjective Probability | 15.91 | 4.34 | 7.72 | 7.10 | 6.30 | 7.93 |
| Leaving an Inheritance | | | | | | |
| Marginal Effect of False Positive | 4.513 | -4.757 | -12.688 | -1.18 | -2.241 | 9.206 |
| | [0.4] | [0.28] | [0.95] | [0.01] | [0.02] | [0.45] |
| Marginal Effect of a False Negative | 4.530 | -7.027 | 14.771 | 1.056 | -7.426 | 14.796 |
| | (6.998) | (10.772) | (14.295) | (9.836) | (18.369) | (9.972) |
| Average Subjective Probability | 45.88 | 63.05 | 70.98 | 57.19 | 58.98 | 48.39 |

## Figure 4-1: Changes in the Disability Status of Households that Were Not Disabled in 1993



## 5. Conclusion

Nearly half of America's elderly population is disabled. With little Medicare or Medicaid coverage of personal care services, 92 percent of disabled elderly households living in the community rely at least partially on informal care (Lui, Manton, and Aragon 2000). The responsibility of caring for an elderly parent can be costly both financially and emotionally. Yet, 5.8 million adults provide care to elderly relatives and friends (Spector, Fleishman, Pezzin, and Spellman, 2000). Previous research in sociology and gerontology, discussed in Chapter 2, shows that daughters, children living close to parents, and children who are not married are more likely to provide informal care. Economic literature regarding informal care has focused on the relationship between adult children's labor force participation and care provision and the strategic bargaining between parents and children when making care decisions.

Parents' expectations about future care from children is another economically important area of research, assuming that parents are rational and forward-looking and their saving decisions incorporate these expectations. This aspect of informal care, however, is largely unexplored. The AHEAD data indicates at over 50 percent of non-disabled elderly households anticipate that their children will provide care if it is needed in the future. The household characteristics correlated with the probability of expecting care, however, differ from those correlated with the true probability of receiving care. An additional daughter increases the probability that a non-disabled elderly household expects future care from children; however, an additional daughter is not statistically significantly related to the true probability that a disabled household receives care. On the other hand, parents' socioeconomic status is not statistically significantly related to

the probability of receiving future assistance, but low socioeconomic parents are more likely to receive care. These results suggest that parents' expectations about care and the realization of care may not converge.

Willis (1980) and Becker and Tomes (1976) conjecture that parents transfer assets to children in exchange for future informal care. This analysis, however, suggests that while parents believe financial transfers may induce children to provide care, transfers of time are more likely to yield future informal care from adult children. Parents who have deeded a house to a child are more likely to expect care, but this type of transfer does not statistically significantly increase the true probability of receiving care. Alternatively, elderly parents who have cared for grandchildren in the past are more likely to receive care from children, yet there is no evidence that providing child care increases the probability that an elderly household expects informal care. These results provide further evidence that parents' expectations do not coincide with true probabilities.

Examining the AHEAD households over time reveals discrepancies between parents' expectations and the reality they face after the onset of a disability. Among households that expect future care from children, over 60 percent do not receive care after the initial onset of a disability. This percentage decreases as disabilities persist, but the false positive rate remains close to 50 percent among households that continue to need care for five consecutive years. Among households that do not anticipate care from children, approximately 25 percent unexpectedly receive care after the initial onset of a disability and the percentage increases to slightly more than 50 percent among households needing help for five years. While parents' predictions are somewhat accurate initially, their importance appears to diminish as disabilities persist. The

percentage of households receiving care after five years of disability is approximately 50 percent regardless of parents' earlier predictions about care.

Analyses of which households are likely to experience inaccurate predictions yield several conclusions. Among households expecting future care, there is some evidence that the households more equipped to deal with disabilities are more likely to experience a false positive. For example, married households and households with more education are more likely to experience a false positive. These results suggest that the high false positive rate may be less serious because these households can obtain adequate assistance without help from their children. Households that did not anticipate future care from children are more likely to unexpectedly receive care if it is relatively easy for children to provide care, but parents' socioeconomic conditions do not affect the probability of a false negative. For instance, households with less onerous limitations (IADLs) are more likely to experience a false negative, while an additional ADL limitation decreases the probability of a false negative. Similarly, households with more children living within 10 miles are more likely to unexpectedly receive care. These results suggest that disabled households are more likely to unexpectedly receive care from children if providing care is convenient for their children.

This dissertation also provides evidence that households that inaccurately predict care incur economic and psychological costs, whereas households that unexpectedly receive care enjoy benefits. Experiencing a false positive increases the probability of spending assets and decreases the probability of saving, while experiencing a false negative decreases the probability of experiencing food insecurity. In addition, households that do not receive expected care are more likely to experience depression in

the long-run and report lower subjective probabilities of living to a certain age, while unexpectedly receiving care is associated with a higher subjective probability of living to a certain age.

While this research provides answers to some of the interesting questions related to parents' expectations about future informal care from children, additional questions remain. First, do younger non-disabled parents make savings decisions and long-term care insurance decisions consistent with their expectations about future care from their children? Assuming parents are rational and forward-looking, parents who expect care from children should be less likely to save and invest in long-term care insurance. The HRS may provide insight into this question. Second, how do parents' expectations about future care from children change as parents' health status and marital status change? When parents are healthy and enjoying the security of having a partner in life, they may not seriously think about the probability that their children will provide care in the future. They may, consequently, assume that their children will provide care with little contemplation. As their health begins to fail or their spouse passes away, parents may spend more time evaluating the true probability that their children will provide care, thus answering the survey question more thoughtfully. Further analysis of the AHEAD data may provide answers to this question. Finally, while the false positive rate is relatively large, these households may not suffer economically because their children provide financial assistance instead of providing informal care. Additional research should investigate the relationship between financial assistance from adult children and informal care provision. Are parents who do not receive informal care from their children more likely to receive other forms of assistance?

## 6. Data Appendix

### A. CES-D

The shortened CES-D does not provide an indication of whether the respondent suffers from a particular psychological disorder, but rather the scale measures whether the respondent experiences symptoms associated with different types of disorders. The original version of the CES-D that became common after its inclusion in the 1974 National Health and Nutrition Examination Survey, asks respondents about 20 feelings they may have experienced in the past week. For each feeling, the respondent indicates the duration of the experience: all the time, most of the time, some of the time, or none of the time. The responses to all 20 feelings are used to construct the CES-D scale. For each positive feeling a respondent receives three, two, one, or zero points, indicating either all of the time, most of the time, some of the time, or none of the time, respectively. For negative feelings the points for each response are reversed. Combining the scores for all 20 feelings yields a scale between 0 and 32. A score of 16 or greater is generally accepted as an indication of depression.

Given the time constraints associated with the AHEAD, a shortened version of the CES-D questionnaire is used. The shortened version only asks yes or no questions for eight emotions: feeling depressed, feeling that everything was an effort, sleeping restlessly, feeling happy, feeling lonely, enjoying life, feeling sad, and the feeling that she could not get going. The shortened version of the CES-D scale ranges from zero to eight. Each respondent receives one point for each yes response to a negative feeling and one point for each no response to a positive feeling.

The CES-D scale is not designed to be used as an indicator for a depressive disorder. Using it as such is problematic for several reasons. It does not account for the length and severity of the symptom, or whether the symptom is caused by another illness, medication, or substance abuse. In addition, the symptoms included can also be attributed to anxiety disorders, as discussed below. Given its widespread use as an indicator of depression, many researchers have examined the validity of using the CES-D scale in this fashion. However, most of this literature has examined the full CES-D scale.

Fechner-Bates, Coyne, and Schwenk (1994) investigate the relationship between high scores on the original CES-D and clinical diagnoses of major depression. The authors construct the CES-D scale for 1,928 patients between the ages of 18 and 80 interviewed at 12 Michigan clinics. The second interview, consisting of only 497 of the initial respondents, uses the Structured Interview for the DSM-III-R (SCID). This interview is designed to assess whether respondents currently suffer from major depression, generalized anxiety, substance use, somatization, or eating disorders using trained clinical professionals as interviewers. The research design over-samples individuals with CES-D scores of 16 or more and then weights the data to account for the over-sampling.

The authors find a strong and statistically significant relationship between CES-D score and SCID diagnoses of major depression. Epidemiologists commonly evaluate the validity of a self-reported indicator of a disorder, such as the CES-D, based on two statistics: sensitivity and selectivity. In the case of CES-D, sensitivity equals the percent of respondents diagnosed with major depression who score 16 or more on the CES-D scale. Selectivity equals the percent of respondents who are not diagnosed with major

depression that scored less than 16 on the CES-D scale. For the CES-D scale and major depression, the authors find a sensitivity of 71.1 percent and selectivity of 79.5 percent. While these statistics are very positive, the authors also examine the predictive power of the CES-D score. Among respondents with CES-D scores of 16 and higher, 72.1 percent are falsely assigned as suffering from depressed based on the CES-D. In addition, 20.5 percent of respondents with CES-D scores less than 16 are falsely assigned as not suffering from depression. The authors conclude that the strong relationship between CES-D and major depression diagnoses is attributable to the fact that most respondents have CSE-D scores below 16 and approximately 80 percent of these respondents do not suffer from depression. However, a large percentage (72.1 percent) of individuals who score 16 or more are falsely classified as depressed.

The authors also examined the relationship between CES-D scores and other psychological disorders, including anxiety, somatization, substance use and eating disorders. Only the strength of the relationship between anxiety and CES-D appears similar to that between CES-D and depression. They find that 53.4 percent of patients suffering from an anxiety disorder score 16 or more on the CES-D scale (sensitivity), while 67.9 percent of those without an anxiety disorder score less than 16 (selectivity). While the selectivity statistic associated with anxiety is similar to that associated with depression, the sensitivity statistic is considerably lower for anxiety. Individuals suffering from anxiety only have a 50 percent chance of scoring 16 or more on the CES-D compared to the almost 80 percent chance for those individuals suffering from depression. Among those respondents who score 16 or more, 22.1 percent are diagnosed with anxiety and 27.9 percent are diagnosed with depression. Among patients who score

less than 16, 89.5 percent are not diagnosed with anxiety and 79.5 are not diagnosed with depression. These results provide evidence that while CES-D scores may be arguably associated with depression, they are equally associated with anxiety.

Steffick (2000) summarizes the results from other evaluations. The validation work finds that the CES-D cutoff of 16 correctly identifies 56 to 94 percent of the respondents who suffer from depression (sensitivity) and between 70 and 99 percent of respondents who are not depressed (selectivity). The literature also finds a range for the positive and negative predictive power of the CES-D scale. Previous research finds only 20 to 30 percent of the individuals above the CES-D cutoff are truly depressed, while over 90 percent of the individuals below the cutoff are not depressed. These results indicate the original CES-D scale identifies true cases relatively well, but the scale also over-estimates the number of true cases by falsely classifying many respondents as depressed even though that are not.

Turvey, Wallace, and Herzog (1999) provide the only analysis of the shortened CES-D scale within the AHEAD study. However, since the AHEAD study does not include any clinical evaluations of the respondents, their analysis relies on the CIDI-SF measure of major depressive episodes. They find that using a cutoff of three on the CES-D scale identifies 79 percent of the individuals who are classified as not experiencing a major depressive episode by the CIDI-SF scale. In addition, the CES-D identified 71 percent of the individuals who are classified as experiencing a major depressive episode by the CIDI-SF.

Steffick (2000) also provides some evidence supporting the validity of the shortened CES-D measure. While no other surveys of a population age 70 and older

include the shortened CES-D measures, the National Longitudinal Survey of Mature Women provides a good benchmark for the version of the CES-D used in the first wave of the HRS. The CES-D values from each survey track each other well. However, the first wave of the HRS asked the CES-D questions in their original form, whereas the questions are simplified in the AHEAD. In addition, she evaluates the construct validity of the CES-D measure. Construct validity "refers to how well a scale reflects the underlying concept it is trying to measure. It asks the question: Is the relationship between the scale score and other characteristics of the respondent what theory would predict for the relationship between depression and the other characteristics?" (pp. 30) She finds that the CES-D scores in Wave 1 of the HRS correlate as predicted with gender, race, marital status, and self-reported health status.

The shortened CES-D scale can provide a cutoff level above which a respondent is considered to exhibit symptoms of depression. Well-established cutoff values exist for the original CES-D scale, but the appropriate cutoff for the shortened version of the CES-D is less straightforward. Steffick (2000) recommends a cutoff value of four. This value is determined through a two-part process. First, using data from the NLS-MW she determines the relationship between the original CES-D measure and the 11-symptom measure used in the first wave of the HRS. This regression was used to translate the established cutoff for the original CES-D (16) into a cutoff value for the 11-symptom measure (9). Then, the 11-symptom cutoff was translated into the shortened CES-D measure used in the AHEAD using a subset of the second wave of the HRS that was asked questions for both measures. This second regression indicates that the appropriate cutoff for the shortened CES-D scale is four.

Cognitive functioning can be described in many ways. The survey designers for the AHEAD suggest following Perlmutter's framework. Perlmutter (1988) hypothesizes that an individual's level of cognition can be explained within a three-tier model. The first tier includes basic processing functions and the speed at which an individual can perform such functions. This level of cognition includes both memory and the ability to store and process information at the same time. The second tier encompasses the knowledge a person acquires through education and life experiences. The third tier comprises an individual's ability to use and manipulate his knowledge. This final tier also includes an individual's opinion about his cognitive abilities.

**B. Total Cognition Score**

AHEAD offers several measures that attempt to measure different levels of cognitive ability. In order to assess a respondent's memory, the first tier of cognition, the survey uses a Serial 7's subtraction test and two word recall tasks: an immediate recall and delayed recall task. The Serial 7's subtraction test asks the respondent to subtract seven from 100 and continue subtracting seven for the remainder for a total of five subtractions. The two word recall tests begin when the interviewer reads ten words. For the first task, the respondent is asked to repeat the list of ten words immediately. Approximately five minutes later the respondent is asked to recall those ten words again.

To measure the second tier of cognition, the survey includes questions that measure mathematical, orientation, and language knowledge. Mathematical knowledge is measured by an individual's ability to count backwards from 10 and 86 as quickly as possible. Orientation knowledge is measured by the respondent's ability to recall the date and the names of the President and Vice President. Vocabulary knowledge is measured

with two different types of questions. The first provides the definition of two words and requires the respondent to provide the words: "What do you usually use to cut paper?" and "What do you call the kind of prickly plant that grows in the desert?" The second asks the respondent to provide definitions for five words. This second vocabulary test is a modified test from the Wechsler Adult Intelligence Scale-revised (WAIS-R). Each respondent is randomly assigned one or two sets of words: (1) repair, fabric, domestic, remorse, and plagiarize or (2) conceal, enormous, perimeter, compassion, and audacious. The third tier is partially measured by an individual's self-reported memory. "How would you rate your memory at the present time?" The AHEAD also includes an alternative set of cognition questions for respondents surveyed through the use of a proxy. However, those questions are not used in this analysis (Ofstedal, McAuleym and Herzog).

With the exclusion of self-rated memory and the WAIS-R vocabulary test, these measures of cognitive ability can be combined to create an index of cognitive functioning ranging from 0 (lowest) to 35 (highest). The respondent receives one point for correctly identifying the current day, month, year, day of the week, President's name, Vice President's name, a pair of scissors based on the definition, and a cactus based on the definition. The respondent receives two points on the scale if she can correctly count backwards from 20 on the first try, but only one point if she fails on the first try but succeeds on the second try. One point is granted for each of the ten words immediately recalled and each of the ten words recalled in the delayed recall task. Finally, the respondent receives one point for each successful subtraction of seven from the Serial 7's

subtraction test. This measure is referred to as the Total Cognition Score in this analysis. It includes both first and second tier levels of cognition.

Herzog and Wallace (1997) use the first wave of the AHEAD data to assess the validity of the Total Cognition Score as a measure of cognitive ability. First, they find that the individual tests included in the aggregate measure relate to each other in a predictable and relative strong manner. In addition, the measure has a normal distribution with tasks that range from difficult to easy. Since no other dataset provides data for this range of cognitive functions for a random sample of the elderly population, there is no way to test the measure's external validity. However, the author argues that two characteristics of the Total Cognition Score provide support of its validity. First, many of the tests included are taken from the Mini-Mental State Examination and the Telephone Interview for Cognitive Status measure (TICS). Both of these indices have a history of validation. Second, the authors find that previously documented correlations between cognitive functioning and other individual characteristics such as age, education, income, ethnicity, and health status can be replicated using the AHEAD data and this aggregate measure. In addition, the relationship between cognitive ability and ADL limitations and IADL limitations is also replicable.

Ofstedal, McAuleym, and Herzog (2002) provide additional support for the components of the Total Cognition Score by benchmarking the AHEAD responses to those from other surveys that include non-institutionalized individuals age 70 and older. They compare the percentage of correct responses to the questions regarding the month, day, year, day of the week, and president's name in the AHEAD to those from the 1986 Americans' Changing Lives Survey (ACL) and the 1982 Iowa Established Populations

for Epidemiologic Studies of the Elderly Survey. They find that the proportion of correct responses for each of the variables in the AHEAD matches closely with the other surveys with the exception of day of the week. The percentage of respondents who correctly reported the day of the week is slightly higher in the AHEAD than in the ACL data. Nevertheless, these similarities provide additional support for the Total Cognition Score.

While this evidence supports the use of this measure of cognitive skill, the measure also has downsides that must be acknowledged. First, the survey design always grants the respondent the opportunity to decline from responding. This policy yields considerable non-response for the cognitive functioning tests. However, the authors provide support for a potential way to recode the missing and refused responses, thereby minimizing the amount of missing data. Second, a value under which an individual is deemed cognitively impaired has not been established. Herzog and Wallace (1997) make two suggestions for determining a cutoff value associated with cognitive impairment. A cutoff point might be established by determining the point that creates a prevalence rate of cognitive impairment in the sample that matches that in the population. However, it is difficult to perfectly align the sample with the population. Henderson (1986) contends that five percent of the population aged 70 and older exhibits symptoms of severe cognitive impairment. Based on this percentage, the appropriate cutoff point for the AHEAD is a score of eight. Alternatively, "one might designate a somewhat arbitrary cutoff of incorrect answers on half or more of the simple knowledge and orientation items. These items represent very basic knowledge and orientation, and failure to correctly answer them could be argued to reflect some form of cognitive impairment." (pp. 42) Under this definition, approximately 1.7 percent of the AHEAD sample would

be considered cognitively impaired. In this analysis, the first alternative is employed to create a dichotomous variable that indicates cognitive impairment.

## 7. Results Appendix

**Table 7-1: Probability of Spending Assets in Last Two Years**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 0.010 | -0.143 | 0.063 | 0.035 | 0.112 | -0.254*** |
| | (0.144) | (0.108) | (0.155) | (0.168) | (0.205) | (0.096) |
| False Negative | 0.172 | 0.192 | 0.250 | 0.079 | -0.026 | -0.105 |
| | (0.129) | (0.150) | (0.223) | (0.168) | (0.177) | (0.152) |
| False Positive | 0.041 | 0.161** | -0.044 | 0.184 | -0.039 | -0.170 |
| | (0.077) | (0.075) | (0.104) | (0.125) | (0.117) | (0.159) |
| Married | 0.110 | -0.054 | -0.112 | -0.039 | 0.121 | 0.003 |
| | (0.074) | (0.080) | (0.125) | (0.100) | (0.107) | (0.157) |
| Nonwhite | -0.252*** | -0.090 | | 0.337 | -0.073 | |
| | (0.067) | (0.109) | | (0.260) | (0.152) | |
| Most Educated - Less than High School | 0.039 | 0.068 | 0.116 | -0.098 | 0.144 | 0.143 |
| | (0.089) | (0.085) | (0.126) | (0.093) | (0.131) | (0.342) |
| Age of the Oldest | 0.001 | -0.007 | -0.019 | -0.001 | -0.031*** | -0.017 |
| | (0.006) | (0.008) | (0.012) | (0.008) | (0.011) | (0.019) |
| Number of Children Living Close | 0.013 | 0.014 | -0.144* | 0.043 | 0.028 | 0.039 |
| | (0.033) | (0.037) | (0.076) | (0.058) | (0.055) | (0.104) |
| Number of Daughters | 0.060* | -0.059* | 0.060 | -0.021 | -0.079* | -0.014 |
| | (0.036) | (0.036) | (0.070) | (0.047) | (0.046) | (0.057) |
| Number of Children | -0.031 | 0.006 | -0.041 | 0.018 | 0.012 | 0.053 |
| | (0.028) | (0.029) | (0.048) | (0.034) | (0.045) | (0.060) |
| Number of IADL Limitations | 0.013 | -0.018 | -0.038 | 0.052 | 0.010 | 0.093* |
| | (0.033) | (0.036) | (0.044) | (0.033) | (0.031) | (0.050) |
| Number of ADL Limitations | 0.010 | -0.009 | 0.044 | 0.011 | 0.047 | -0.013 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.025) | (0.030) | (0.035) | (0.024) | (0.029) | (0.043) |
| Asset Holdings in Prior Wave | | | | | | |
| Real Estate | -0.178*** | 0.054 | 0.124 | 0.164* | -0.046 | -0.085 |
| | (0.064) | (0.075) | (0.151) | (0.094) | (0.118) | (0.137) |
| Business | 0.296** | 0.134 | -0.125 | 0.075 | -0.098 | 0.205 |
| | (0.131) | (0.110) | (0.102) | (0.162) | (0.110) | (0.485) |
| IRA | 0.215*** | 0.062 | 0.030 | 0.147 | -0.084 | -0.121 |
| | (0.082) | (0.081) | (0.118) | (0.120) | (0.102) | (0.121) |
| Stocks | 0.055 | 0.092 | -0.157 | 0.031 | 0.069 | 0.137 |
| | (0.068) | (0.069) | (0.107) | (0.099) | (0.086) | (0.185) |
| Bonds | 0.122 | -0.023 | | -0.092 | 0.307 | |
| | (0.108) | (0.087) | | (0.119) | (0.192) | |
| CDs | 0.049 | -0.008 | -0.010 | 0.051 | 0.270*** | 0.238 |
| | (0.067) | (0.066) | (0.098) | (0.093) | (0.092) | (0.179) |
| Observations | 201 | 182 | 117 | 97 | 84 | 56 |

**Table 7-2: Probability of Adding Assets in Last Two Years**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 0.098 | 0.119 | 0.040 | 0.157 | 0.137 | -0.082 |
| | (0.079) | (0.096) | (0.101) | (0.108) | (0.112) | (0.056) |
| False Negative | 0.096 | 0.024 | -0.014 | 0.036 | -0.011 | -0.094* |
| | (0.078) | (0.113) | (0.133) | (0.081) | (0.121) | (0.056) |
| False Positive | -0.009 | 0.025 | -0.060 | -0.012 | 0.049 | -0.069 |
| | (0.046) | (0.060) | (0.066) | (0.063) | (0.085) | (0.042) |
| Married | 0.006 | 0.041 | 0.003 | -0.064 | 0.043 | 0.042 |
| | (0.045) | (0.064) | (0.090) | (0.052) | (0.076) | (0.068) |
| Nonwhite | -0.066 | -0.145** | | -0.042 | -0.071 | 0.023 |
| | (0.052) | (0.063) | | (0.073) | (0.078) | (0.074) |
| Most Educated - Less than High School | -0.051 | -0.032 | -0.047 | 0.009 | -0.075 | -0.020 |
| | (0.045) | (0.061) | (0.071) | (0.057) | (0.064) | (0.056) |
| Age of the Oldest | -0.001 | -0.003 | -0.018** | 0.001 | 0.012** | 0.001 |
| | (0.003) | (0.006) | (0.007) | (0.004) | (0.006) | (0.004) |
| Number of Children Living Close | -0.026 | -0.002 | -0.042 | 0.023 | -0.031 | 0.034 |
| | (0.020) | (0.030) | (0.044) | (0.026) | (0.041) | (0.032) |
| Number of Daughters | -0.023 | 0.003 | 0.037 | -0.013 | -0.013 | -0.011 |
| | (0.022) | (0.029) | (0.034) | (0.027) | (0.039) | (0.029) |
| Number of Children | 0.007 | 0.011 | -0.012 | 0.006 | 0.001 | -0.021 |
| | (0.016) | (0.023) | (0.026) | (0.019) | (0.026) | (0.022) |
| Number of IADL Limitations | -0.038** | -0.022 | -0.022 | -0.025 | -0.045** | 0.014 |
| | (0.019) | (0.026) | (0.032) | (0.019) | (0.021) | (0.016) |
| Number of ADL Limitations | -0.010 | -0.005 | -0.060* | 0.002 | 0.004 | -0.021 |
| | (0.015) | (0.021) | (0.031) | (0.013) | (0.017) | (0.014) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Asset Holdings in Prior Wave | | | | | | |
| Real Estate | 0.069 | -0.085 | 0.048 | 0.044 | 0.109 | 0.026 |
| | (0.055) | (0.060) | (0.095) | (0.063) | (0.116) | (0.081) |
| Business | -0.081 | 0.188* | 0.167 | | 0.022 | |
| | (0.079) | (0.101) | (0.153) | | (0.127) | |
| IRA | -0.062 | -0.012 | -0.037 | -0.015 | 0.383*** | -0.009 |
| | (0.047) | (0.068) | (0.070) | (0.074) | (0.133) | (0.073) |
| Stocks | 0.085 | -0.032 | 0.052 | 0.021 | -0.086 | 0.054 |
| | (0.054) | (0.059) | (0.074) | (0.062) | (0.058) | (0.080) |
| Bonds | 0.127 | 0.124 | 0.145 | 0.135 | | 0.166 |
| | (0.095) | (0.091) | (0.102) | (0.116) | | (0.188) |
| CDs | 0.100** | 0.058 | 0.056 | 0.093 | -0.018 | 0.024 |
| | (0.049) | (0.054) | (0.065) | (0.066) | (0.065) | (0.066) |
| Asset Holdings in Prior Wave - Missing | | | | | | |
| Real Estate | -0.226*** | | | | | |
| | (0.018) | | | | | |
| Business | 0.770*** | | | | | |
| | (0.018) | | | | | |
| IRA | 0.777*** | | | | | |
| | (0.018) | | | | | |
| Stocks | 0.226*** | | 0.526 | | | |
| | (0.011) | | (0.376) | | | |
| Bonds | -0.224*** | -0.182 | 0.345 | | | |
| | (0.018) | (0.125) | (0.389) | | | |
| CDs | 0.772*** | 0.476* | -0.155* | | | |
| | (0.018) | (0.246) | (0.088) | | | |
| Observations | 428 | 269 | 191 | 230 | 144 | 169 |

**Table 7-3: Probability of Food Insecurity of Last Two Years**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 0.031 | -0.056 | | -0.031 | | 0.126 |
| | (0.045) | (0.043) | | (0.043) | | (0.097) |
| False Negative | -0.021 | -0.094** | | -0.086*** | | 0.046 |
| | (0.038) | (0.037) | | (0.029) | | (0.101) |
| False Positive | -0.016 | -0.065 | | -0.071** | | 0.139 |
| | (0.027) | (0.050) | | (0.031) | | (0.118) |
| Married | -0.001 | -0.026 | | -0.010 | | 0.198 |
| | (0.034) | (0.048) | | (0.048) | | (0.130) |
| Nonwhite | 0.180*** | 0.236*** | | 0.042 | | 0.007 |
| | (0.045) | (0.075) | | (0.041) | | (0.063) |
| Most Educated - Less than High School | 0.022 | 0.069 | | 0.017 | | 0.134*** |
| | (0.028) | (0.044) | | (0.037) | | (0.050) |
| Age of the Oldest | -0.005** | -0.003 | | -0.009*** | | -0.003 |
| | (0.002) | (0.004) | | (0.003) | | (0.005) |
| Number of Children Living Close | -0.004 | -0.001 | | 0.002 | | 0.019 |
| | (0.010) | (0.026) | | (0.015) | | (0.025) |
| Number of Daughters | -0.030** | 0.070*** | | -0.010 | | -0.023 |
| | (0.014) | (0.026) | | (0.016) | | (0.027) |
| Number of Children | 0.021** | -0.034** | | 0.024** | | 0.012 |
| | (0.009) | (0.017) | | (0.012) | | (0.020) |
| Number of IADL Limitations | -0.018 | 0.029* | | -0.011 | | -0.008 |
| | (0.013) | (0.015) | | (0.014) | | (0.021) |
| Number of ADL Limitations | -0.005 | 0.021 | | 0.007 | | 0.014 |

| | | | | |
|---|---|---|---|---|
| | (0.010) | (0.013) | (0.008) | (0.015) |
| Asset Holdings in Prior Wave | | | | |
| Real Estate | -0.006 | 0.019 | -0.034 | 0.508** |
| | (0.043) | (0.074) | (0.054) | (0.199) |
| Business | | | | |
| IRA | -0.021 | | -0.027 | |
| | (0.043) | | (0.059) | |
| Stocks | 0.053 | | 0.139 | |
| | (0.056) | | (0.119) | |
| Bonds | 0.073 | | | |
| | (0.095) | | | |
| CDs | -0.062** | 0.036 | -0.005 | -0.036 |
| | (0.028) | (0.073) | (0.052) | (0.083) |
| Observations | 496 | 304 | 269 | 172 |

**Table 7-4: Probability that a Household Member Resides in a Nursing Home**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -0.017 | -0.039 | -0.059 | -0.001 | -0.102 | 0.055 |
| | (0.021) | (0.028) | (0.043) | (0.075) | (0.068) | (0.094) |
| False Negative | -0.023 | -0.046 | -0.116*** | 0.159* | -0.074 | 0.092 |
| | (0.021) | (0.028) | (0.034) | (0.090) | (0.073) | (0.084) |
| False Positive | -0.010 | 0.068* | -0.078 | 0.072 | -0.094 | 0.131 |
| | (0.025) | (0.036) | (0.048) | (0.080) | (0.084) | (0.101) |
| Married | -0.052*** | -0.123*** | -0.073 | -0.093** | -0.178** | -0.057 |
| | (0.018) | (0.036) | (0.062) | (0.046) | (0.081) | (0.074) |
| Nonwhite | -0.050*** | -0.034 | -0.035 | -0.079* | -0.036 | -0.055 |
| | (0.016) | (0.027) | (0.050) | (0.043) | (0.074) | (0.062) |
| Most Educated - Less than High School | -0.008 | -0.026 | -0.070* | -0.046 | -0.068 | -0.064 |
| | (0.018) | (0.025) | (0.038) | (0.047) | (0.062) | (0.059) |
| Age of the Oldest | -0.000 | 0.001 | 0.008 | 0.003 | 0.009 | 0.003 |
| | (0.002) | (0.002) | (0.005) | (0.003) | (0.007) | (0.005) |
| Number of Children Living Close | -0.004 | -0.019 | 0.037 | 0.046* | 0.004 | -0.045 |
| | (0.012) | (0.020) | (0.030) | (0.024) | (0.036) | (0.038) |
| Number of Daughters | -0.000 | 0.033** | -0.037 | -0.026 | -0.016 | -0.059* |
| | (0.011) | (0.014) | (0.024) | (0.025) | (0.035) | (0.035) |
| Number of Children | -0.003 | -0.017 | -0.002 | -0.005 | 0.009 | 0.029 |
| | (0.009) | (0.012) | (0.018) | (0.017) | (0.025) | (0.021) |
| Number of IADL Limitations | 0.023*** | 0.045*** | 0.029** | 0.020 | 0.066*** | 0.017 |
| | (0.007) | (0.011) | (0.014) | (0.015) | (0.022) | (0.018) |
| Number of ADL Limitations | 0.011** | 0.005 | 0.028** | 0.014 | 0.001 | 0.030** |
| | (0.005) | (0.008) | (0.012) | (0.011) | (0.015) | (0.013) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Current Asset Holdings | | | | | | |
| Real Estate | -0.045** | -0.038 | -0.002 | | 0.065 | -0.112 |
| | (0.018) | (0.052) | (0.057) | | (0.118) | (0.074) |
| Business | 0.202 | 0.057 | 0.045 | | | |
| | (0.123) | (0.086) | (0.102) | | | |
| IRA | -0.009 | -0.040 | 0.036 | -0.013 | -0.015 | -0.144 |
| | (0.031) | (0.041) | (0.066) | (0.091) | (0.096) | (0.090) |
| Stocks | -0.004 | -0.038 | -0.042 | -0.099** | 0.061 | 0.094 |
| | (0.025) | (0.031) | (0.056) | (0.047) | (0.078) | (0.076) |
| Bonds | -0.034 | 0.086 | -0.053 | 0.304* | 0.052 | 0.466*** |
| | (0.025) | (0.070) | (0.061) | (0.159) | (0.134) | (0.166) |
| CDs | -0.012 | -0.055* | -0.024 | -0.089* | -0.040 | 0.074 |
| | (0.020) | (0.031) | (0.052) | (0.048) | (0.076) | (0.077) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | | | | -0.155*** | | |
| | | | | (0.019) | | |
| Business | | | | 0.848*** | | |
| | | | | (0.019) | | |
| IRA | | | | 0.483 | | 0.081 |
| | | | | (0.347) | | (0.267) |
| Stocks | | | 0.080 | -0.136* | | 0.210 |
| | | | (0.223) | (0.073) | | (0.315) |
| Bonds | | | -0.117*** | 0.258 | | -0.113 |
| | | | (0.023) | (0.907) | | (0.117) |
| CDs | | | 0.237 | 0.068 | | 0.166 |
| | | | (0.358) | (0.180) | | (0.300) |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | 0.011 | -0.019 | 0.016 | 0.002 | 0.078 | 0.056 |
| | (0.034) | (0.040) | (0.069) | (0.069) | (0.137) | (0.099) |
| Fair | 0.025 | -0.016 | -0.015 | -0.046 | -0.061 | -0.112 |
| | (0.036) | (0.036) | (0.076) | (0.066) | (0.104) | (0.090) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Poor | 0.043 | 0.043 | 0.026 | -0.051 | 0.046 | -0.076 |
| | (0.046) | (0.053) | (0.095) | (0.068) | (0.119) | (0.085) |
| Cognitive Impairment | | 0.065 | 0.151* | 0.144*** | 0.178** | 0.205*** |
| | | (0.040) | (0.078) | (0.055) | (0.085) | (0.066) |
| Cognitive Impairment - Missing | 0.052* | | | | | |
| | (0.030) | | | | | |
| Observations | 500 | 304 | 196 | 271 | 151 | 172 |

**Table 7-5: Probability that a Household Receives Community-Based Care**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 0.104 | 0.175* | -0.267*** | -0.014 | 0.094 | 0.000 |
| | (0.076) | (0.096) | (0.068) | (0.102) | (0.124) | (0.135) |
| False Negative | 0.079 | 0.104 | 0.035 | -0.034 | 0.115 | 0.112 |
| | (0.074) | (0.111) | (0.125) | (0.092) | (0.162) | (0.117) |
| False Positive | -0.002 | -0.090 | -0.220*** | 0.067 | -0.058 | 0.142 |
| | (0.049) | (0.063) | (0.072) | (0.078) | (0.100) | (0.109) |
| Married | -0.097** | 0.008 | -0.073 | -0.006 | 0.002 | -0.155 |
| | (0.047) | (0.069) | (0.095) | (0.079) | (0.093) | (0.110) |
| Nonwhite | -0.010 | -0.096 | -0.085 | -0.117 | -0.154 | -0.016 |
| | (0.053) | (0.067) | (0.092) | (0.081) | (0.094) | (0.108) |
| Most Educated - Less than High School | -0.035 | 0.002 | -0.023 | -0.015 | 0.026 | -0.047 |
| | (0.046) | (0.066) | (0.078) | (0.068) | (0.097) | (0.102) |
| Age of the Oldest | -0.001 | 0.002 | -0.002 | 0.008 | 0.024*** | 0.000 |
| | (0.004) | (0.006) | (0.008) | (0.005) | (0.008) | (0.008) |
| Number of Children Living Close | 0.001 | 0.030 | -0.039 | 0.022 | -0.001 | -0.031 |
| | (0.019) | (0.033) | (0.039) | (0.033) | (0.052) | (0.048) |
| Number of Daughters | -0.019 | -0.034 | 0.000 | -0.088*** | -0.069 | -0.019 |
| | (0.023) | (0.033) | (0.034) | (0.033) | (0.047) | (0.046) |
| Number of Children | 0.012 | -0.021 | 0.038 | 0.018 | 0.042 | 0.038 |
| | (0.016) | (0.023) | (0.025) | (0.023) | (0.032) | (0.034) |
| Number of IADL Limitations | 0.037** | -0.001 | 0.085*** | 0.064*** | 0.009 | 0.029 |
| | (0.018) | (0.029) | (0.029) | (0.025) | (0.033) | (0.033) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | 0.041*** | 0.027 | 0.067*** | 0.058*** | 0.012 | 0.036 |
| | (0.015) | (0.020) | (0.026) | (0.017) | (0.022) | (0.024) |
| Current Asset Holdings | | | | | | |
| Real Estate | 0.023 | 0.004 | -0.023 | 0.044 | -0.137 | -0.125 |
| | (0.062) | (0.090) | (0.105) | (0.094) | (0.114) | (0.153) |
| Business | 0.033 | -0.134 | 0.028 | -0.078 | 0.187 | 0.382*** |
| | (0.099) | (0.088) | (0.160) | (0.151) | (0.196) | (0.107) |
| IRA | -0.030 | 0.016 | -0.036 | 0.136 | 0.093 | 0.293** |
| | (0.062) | (0.077) | (0.091) | (0.115) | (0.125) | (0.125) |
| Stocks | 0.055 | 0.050 | 0.087 | -0.010 | -0.054 | 0.068 |
| | (0.054) | (0.073) | (0.091) | (0.079) | (0.093) | (0.106) |
| Bonds | 0.124 | 0.086 | -0.082 | 0.160 | -0.155 | 0.027 |
| | (0.087) | (0.112) | (0.090) | (0.123) | (0.106) | (0.211) |
| CDs | -0.041 | -0.017 | -0.005 | -0.028 | -0.166** | -0.239** |
| | (0.044) | (0.061) | (0.073) | (0.071) | (0.079) | (0.107) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | | | | | | |
| Business | | | | | | |
| IRA | | | -0.150 | 0.011 | 0.684*** | |
| | | | (0.253) | (0.277) | (0.035) | |
| Stocks | 0.361 | 0.301 | 0.470** | -0.077 | 0.682*** | -0.159 |
| | (0.408) | (0.414) | (0.209) | (0.236) | (0.036) | (0.333) |
| Bonds | 0.061 | -0.193 | -0.225 | 0.167 | 0.666*** | |
| | (0.478) | (0.177) | (0.180) | (0.295) | (0.034) | |
| CDs | -0.173 | -0.011 | -0.077 | 0.242 | -0.316*** | |
| | (0.121) | (0.199) | (0.192) | (0.357) | (0.035) | |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | 0.050 | 0.243** | 0.082 | -0.044 | 0.335* | 0.104 |
| | (0.063) | (0.101) | (0.114) | (0.106) | (0.194) | (0.174) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Fair | 0.105* | 0.268*** | 0.074 | -0.021 | 0.338** | 0.150 |
| | (0.064) | (0.094) | (0.110) | (0.101) | (0.150) | (0.160) |
| Poor | 0.179** | 0.317*** | 0.018 | 0.047 | 0.318* | 0.179 |
| | (0.081) | (0.107) | (0.132) | (0.109) | (0.172) | (0.157) |
| Cognitive Impairment | -0.088 | 0.045 | -0.029 | 0.017 | -0.068 | -0.103 |
| | (0.130) | (0.069) | (0.086) | (0.074) | (0.093) | (0.104) |
| Cognitive Impairment - Missing | -0.030 | | | | | |
| | (0.050) | | | | | |
| Observations | 480 | 282 | 179 | 239 | 124 | 143 |

**Table 7-6: Probability that a Household Pays for Community-Based Care**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 0.063 | 0.116 | | -0.024 | 0.117 | -0.176*** |
| | (0.051) | (0.074) | | (0.060) | (0.112) | (0.051) |
| False Negative | -0.011 | -0.014 | 0.037 | -0.010 | 0.277* | -0.000 |
| | (0.037) | (0.061) | (0.106) | (0.058) | (0.166) | (0.080) |
| False Positive | 0.011 | -0.050 | -0.114** | 0.024 | 0.090 | -0.049 |
| | (0.034) | (0.037) | (0.052) | (0.058) | (0.089) | (0.072) |
| Married | -0.032 | 0.105** | -0.179*** | 0.056 | 0.107 | -0.161*** |
| | (0.026) | (0.052) | (0.065) | (0.063) | (0.076) | (0.055) |
| Nonwhite | -0.027 | 0.013 | -0.091 | -0.026 | -0.055 | 0.013 |
| | (0.029) | (0.053) | (0.061) | (0.048) | (0.066) | (0.078) |
| Most Educated - Less than High School | -0.016 | -0.014 | -0.078 | 0.041 | 0.147* | -0.036 |
| | (0.027) | (0.039) | (0.056) | (0.045) | (0.082) | (0.069) |
| Age of the Oldest | 0.002 | 0.006 | -0.012* | 0.003 | 0.023*** | 0.003 |
| | (0.002) | (0.004) | (0.007) | (0.004) | (0.008) | (0.006) |
| Number of Children Living Close | 0.000 | 0.011 | -0.043 | -0.021 | -0.041 | 0.044 |
| | (0.012) | (0.023) | (0.041) | (0.029) | (0.040) | (0.036) |
| Number of Daughters | -0.035** | -0.009 | 0.026 | 0.004 | -0.030 | 0.096*** |
| | (0.015) | (0.021) | (0.032) | (0.023) | (0.034) | (0.036) |
| Number of Children | 0.019** | -0.015 | -0.007 | -0.015 | 0.025 | -0.050* |
| | (0.009) | (0.017) | (0.023) | (0.019) | (0.020) | (0.028) |
| Number of IADL Limitations | 0.019* | -0.005 | 0.066* | 0.016 | -0.002 | -0.004 |
| | (0.010) | (0.016) | (0.034) | (0.015) | (0.021) | (0.021) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | 0.005 | 0.006 | 0.007 | 0.006 | -0.022 | -0.009 |
| | (0.008) | (0.012) | (0.022) | (0.011) | (0.016) | (0.017) |
| Current Asset Holdings | | | | | | |
| Real Estate | -0.047* | 0.005 | 0.024 | -0.035 | -0.027 | 0.057 |
| | (0.026) | (0.062) | (0.104) | (0.052) | (0.072) | (0.131) |
| Business | -0.012 | 0.035 | | | 0.163 | 0.173 |
| | (0.057) | (0.075) | | | (0.197) | (0.260) |
| IRA | -0.010 | 0.035 | 0.171 | 0.134 | 0.121 | 0.054 |
| | (0.038) | (0.056) | (0.104) | (0.114) | (0.108) | (0.140) |
| Stocks | 0.033 | 0.034 | 0.051 | 0.038 | 0.008 | 0.044 |
| | (0.034) | (0.050) | (0.083) | (0.058) | (0.067) | (0.076) |
| Bonds | 0.029 | -0.036 | 0.105 | -0.075 | -0.009 | |
| | (0.054) | (0.050) | (0.101) | (0.046) | (0.080) | |
| CDs | -0.004 | 0.062 | -0.054 | 0.032 | 0.021 | -0.086 |
| | (0.026) | (0.043) | (0.058) | (0.056) | (0.063) | (0.063) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | | | | | | |
| Business | | | | | | |
| IRA | | | | | | |
| Stocks | | | 0.145 | | | 0.835*** |
| | | | (0.249) | | | (0.027) |
| Bonds | | | | | | 0.168 |
| | | | | | | (0.325) |
| CDs | 0.159 | 0.147 | 0.078 | 0.188 | | -0.166*** |
| | (0.236) | (0.220) | (0.192) | (0.274) | | (0.027) |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | -0.044 | 0.002 | 0.266* | -0.013 | 0.084 | 0.056 |
| | (0.029) | (0.061) | (0.140) | (0.075) | (0.142) | (0.155) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Fair | -0.006 | -0.030 | 0.298*** | 0.056 | 0.141 | 0.120 |
| | (0.034) | (0.056) | (0.114) | (0.081) | (0.118) | (0.143) |
| Poor | 0.027 | 0.012 | 0.267 | 0.039 | 0.087 | 0.131 |
| | (0.044) | (0.065) | (0.210) | (0.085) | (0.137) | (0.144) |
| Cognitive Impairment | | 0.006 | -0.109 | 0.023 | -0.013 | 0.009 |
| | | (0.042) | (0.072) | (0.048) | (0.069) | (0.069) |
| Cognitive Impairment - Missing | -0.025 | | | | | |
| | (0.028) | | | | | |
| Observations | 500 | 304 | 195 | 271 | 150 | 172 |

**Table 7-7: Probability of Currently Receiving Treatment for a Psychological Disorder**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -0.065** | -0.037 | 0.008 | -0.082* | -0.094 | -0.012 |
| | (0.030) | (0.043) | (0.056) | (0.047) | (0.064) | (0.075) |
| False Negative | -0.020 | 0.025 | -0.009 | -0.026 | -0.028 | 0.007 |
| | (0.036) | (0.059) | (0.062) | (0.046) | (0.076) | (0.070) |
| False Positive | -0.011 | 0.035 | -0.052 | -0.053 | -0.102* | -0.101* |
| | (0.032) | (0.046) | (0.038) | (0.044) | (0.060) | (0.053) |
| Married | -0.006 | 0.003 | 0.138* | 0.016 | -0.102* | 0.156** |
| | (0.032) | (0.050) | (0.074) | (0.052) | (0.062) | (0.069) |
| Nonwhite | -0.023 | 0.015 | -0.032 | -0.040 | -0.021 | -0.078 |
| | (0.032) | (0.048) | (0.048) | (0.040) | (0.070) | (0.055) |
| Most Educated - Less than High School | 0.023 | 0.021 | -0.003 | 0.003 | 0.011 | -0.021 |
| | (0.028) | (0.037) | (0.042) | (0.044) | (0.059) | (0.055) |
| Age of the Oldest | -0.003 | -0.001 | 0.006 | 0.002 | -0.007 | -0.004 |
| | (0.002) | (0.003) | (0.004) | (0.002) | (0.005) | (0.005) |
| Number of Children Living Close | 0.011 | -0.034 | -0.027 | 0.013 | 0.013 | -0.010 |
| | (0.012) | (0.025) | (0.022) | (0.018) | (0.028) | (0.026) |
| Number of Daughters | 0.016 | -0.003 | 0.020 | 0.008 | 0.003 | 0.032 |
| | (0.016) | (0.021) | (0.022) | (0.018) | (0.032) | (0.025) |
| Number of Children | -0.020* | 0.001 | -0.017 | 0.002 | -0.007 | 0.002 |
| | (0.012) | (0.013) | (0.016) | (0.013) | (0.020) | (0.016) |
| Number of IADL Limitations | 0.026** | 0.026* | 0.043** | 0.027* | 0.057*** | 0.035* |
| | (0.012) | (0.015) | (0.020) | (0.014) | (0.018) | (0.020) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | -0.002 | -0.002 | -0.009 | 0.004 | -0.003 | -0.010 |
| | (0.010) | (0.010) | (0.013) | (0.010) | (0.014) | (0.015) |
| Female | 0.014 | 0.106*** | 0.073* | 0.115*** | 0.085 | 0.121*** |
| | (0.028) | (0.031) | (0.039) | (0.035) | (0.061) | (0.044) |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | -0.011 | 0.131 | -0.026 | 0.021 | -0.032 | 0.173 |
| | (0.042) | (0.095) | (0.052) | (0.075) | (0.093) | (0.143) |
| Fair | 0.043 | 0.168* | 0.076 | 0.064 | 0.033 | 0.175 |
| | (0.045) | (0.090) | (0.066) | (0.072) | (0.084) | (0.122) |
| Poor | 0.114* | 0.255** | 0.006 | 0.137 | -0.047 | 0.187 |
| | (0.067) | (0.113) | (0.064) | (0.088) | (0.082) | (0.126) |
| Cognitive Impairment | | -0.269*** | -0.299*** | 0.218** | 0.079 | -0.480*** |
| | | (0.016) | (0.019) | (0.106) | (0.157) | (0.024) |
| Cognitive Impairment - Missing | 0.036 | 0.716*** | 0.683*** | -0.120* | 0.000 | 0.503*** |
| | (0.037) | (0.016) | (0.018) | (0.065) | (0.142) | (0.024) |
| Observations | 529 | 317 | 200 | 285 | 160 | 187 |

**Table 7-8: Probability of Experiencing Depression**

Marginal Effects and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -0.071 | 0.130 | 0.060 | -0.235*** | -0.076 | -0.138 |
| | (0.058) | (0.098) | (0.094) | (0.085) | (0.078) | (0.119) |
| False Negative | -0.038 | -0.114* | 0.046 | -0.066 | 0.105 | 0.045 |
| | (0.065) | (0.067) | (0.130) | (0.088) | (0.141) | (0.115) |
| False Positive | -0.037 | -0.086 | -0.046 | -0.000 | -0.084 | -0.115 |
| | (0.045) | (0.054) | (0.062) | (0.079) | (0.076) | (0.094) |
| Married | -0.138*** | -0.025 | -0.106 | -0.070 | 0.167** | 0.046 |
| | (0.044) | (0.064) | (0.077) | (0.079) | (0.077) | (0.096) |
| Nonwhite | 0.032 | -0.045 | 0.023 | 0.220** | 0.019 | -0.109 |
| | (0.058) | (0.066) | (0.089) | (0.099) | (0.093) | (0.095) |
| Most Educated - Less than High School | 0.043 | -0.056 | 0.004 | 0.065 | 0.021 | 0.069 |
| | (0.044) | (0.057) | (0.063) | (0.077) | (0.076) | (0.078) |
| Age of the Oldest | 0.003 | 0.002 | -0.004 | -0.005 | 0.014** | 0.007 |
| | (0.004) | (0.005) | (0.007) | (0.005) | (0.006) | (0.007) |
| Number of Children Living Close | 0.008 | -0.035 | -0.016 | -0.021 | -0.111** | -0.015 |
| | (0.018) | (0.033) | (0.030) | (0.043) | (0.055) | (0.039) |
| Number of Daughters | 0.016 | 0.031 | -0.009 | -0.014 | 0.048 | -0.046 |
| | (0.023) | (0.028) | (0.027) | (0.032) | (0.040) | (0.039) |
| Number of Children | -0.007 | -0.015 | 0.017 | 0.007 | 0.012 | 0.069** |
| | (0.017) | (0.022) | (0.020) | (0.023) | (0.024) | (0.031) |
| Number of IADL Limitations | 0.030 | 0.027 | 0.093*** | 0.022 | 0.018 | 0.032 |
| | (0.023) | (0.032) | (0.035) | (0.030) | (0.031) | (0.043) |
| Number of ADL Limitations | 0.034** | 0.027 | 0.082*** | 0.041** | 0.046** | 0.059** |
| | (0.016) | (0.023) | (0.021) | (0.019) | (0.018) | (0.025) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Female | -0.056 | 0.148*** | -0.054 | -0.050 | 0.149** | -0.101 |
| | (0.045) | (0.053) | (0.065) | (0.067) | (0.063) | (0.086) |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | 0.087 | 0.035 | -0.045 | 0.058 | 0.490*** | 0.274** |
| | (0.060) | (0.088) | (0.074) | (0.099) | (0.030) | (0.125) |
| Fair | 0.200*** | 0.129 | 0.030 | -0.028 | 0.413*** | 0.271*** |
| | (0.061) | (0.088) | (0.086) | (0.091) | (0.033) | (0.103) |
| Poor | 0.492*** | 0.227** | 0.007 | 0.194* | 0.751*** | 0.328*** |
| | (0.075) | (0.112) | (0.104) | (0.111) | (0.036) | (0.122) |
| Cognitive Impairment | 0.243 | -0.001 | -0.241*** | 0.114 | -0.135 | -0.437*** |
| | (0.159) | (0.140) | (0.027) | (0.152) | (0.113) | (0.038) |
| Cognitive Impairment - Missing | 0.146* | -0.019 | 0.755*** | -0.095 | 0.062 | 0.566*** |
| | (0.077) | (0.156) | (0.027) | (0.132) | (0.212) | (0.038) |
| Observations | 437 | 243 | 158 | 216 | 110 | 120 |

**Table 7-9: Subjective Probability of Living to a Certain Age**

OLS Coefficients and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 1.061 | | -3.234 | 33.824*** | | 12.265 |
| | (5.444) | | (11.354) | (11.402) | | (11.374) |
| False Negative | -0.810 | | -9.554 | 23.710* | | -13.203 |
| | (6.257) | | (14.277) | (13.186) | | (11.902) |
| False Positive | 5.881 | | 2.218 | 17.518* | | -25.644** |
| | (3.942) | | (7.822) | (10.212) | | (10.676) |
| Married | 0.382 | | 1.248 | 9.086 | | 9.132 |
| | (3.840) | | (9.744) | (7.379) | | (8.649) |
| Nonwhite | 2.962 | | 6.006 | 2.169 | | -1.099 |
| | (5.099) | | (12.817) | (11.786) | | (9.217) |
| Most Educated - Less than High School | 6.542* | | 0.022 | -8.277 | | 4.877 |
| | (3.726) | | (8.280) | (8.506) | | (8.833) |
| Age of the Oldest | -0.942*** | | -0.367 | -1.915** | | -0.333 |
| | (0.304) | | (0.913) | (0.816) | | (1.024) |
| Number of Children Living Close | -2.724* | | -1.252 | 2.814 | | -2.471 |
| | (1.628) | | (3.788) | (5.968) | | (3.459) |
| Number of Daughters | 1.294 | | 3.163 | 0.084 | | -7.399* |
| | (2.033) | | (3.711) | (5.370) | | (4.279) |
| Number of Children | 0.005 | | -0.779 | -3.279 | | 1.144 |
| | (1.508) | | (2.768) | (3.664) | | (3.401) |
| Number of IADL Limitations | -4.198** | | 10.593** | -3.754 | | -4.278 |
| | (2.074) | | (4.915) | (4.573) | | (3.363) |

| | | | | |
|---|---|---|---|---|
| Number of ADL Limitations | -1.921 | 1.854 | -1.084 | 1.773 |
| | (1.334) | (2.869) | (2.607) | (2.634) |
| Female | 0.065 | 1.825 | 7.961 | -2.129 |
| | (3.486) | (8.962) | (9.929) | (8.886) |
| Income (> $24,000 Omitted) | | | | |
| $12,000 - $24,000 | -5.889 | 2.382 | 6.460 | 1.637 |
| | (4.240) | (10.154) | (9.284) | (9.507) |
| Less than $12,000 | -3.624 | 3.489 | 9.515 | 13.515 |
| | (5.182) | (13.476) | (13.015) | (14.759) |
| Self-Reported Health Status of Least Healthy | | | | |
| Good | -7.020 | -5.273 | 7.891 | -18.136 |
| | (4.777) | (10.101) | (17.183) | (15.044) |
| Fair | -11.652** | 0.244 | -9.468 | -20.183 |
| | (4.879) | (10.546) | (16.131) | (14.141) |
| Poor | -29.782*** | -17.761 | -11.863 | -22.843 |
| | (5.802) | (12.463) | (18.046) | (14.947) |
| Missing | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Cognitive Impairment | -10.114 | -25.015 | -26.901 | 5.916 |
| | (17.066) | (21.316) | (19.141) | (33.473) |
| Cognitive Impairment - Missing | -3.183 | 10.183 | 18.297 | -10.231 |
| | (7.635) | (21.769) | (37.182) | (33.129) |
| Current Asset Holdings | | | | |
| Real Estate | -4.971 | 16.834 | 11.957 | 13.905 |
| | (4.589) | (11.010) | (15.139) | (11.398) |
| Business | -4.106 | 9.325 | -14.639 | -42.612*** |
| | (6.328) | (10.124) | (17.662) | (16.012) |
| IRA | -3.455 | 5.390 | -13.750 | -10.591 |
| | (4.822) | (9.217) | (10.804) | (14.066) |
| Stocks | 0.468 | 6.861 | -4.256 | 5.546 |
| | (4.017) | (8.887) | (8.015) | (8.487) |

| | | | | |
|---|---|---|---|---|
| Bonds | 3.797 | -0.891 | -2.855 | -4.382 |
| | (5.885) | (8.341) | (14.877) | (14.452) |
| CDs | -8.840** | -2.527 | 3.520 | -6.718 |
| | (3.628) | (7.051) | (7.503) | (8.751) |
| Current Asset Holdings - Missing | | | | |
| Real Estate | 0.000 | -29.194* | -18.612 | 0.000 |
| | (0.000) | (15.985) | (19.755) | (0.000) |
| Business | -56.873*** | 43.953** | 0.000 | 0.000 |
| | (10.712) | (20.211) | (0.000) | (0.000) |
| IRA | 0.000 | -6.399 | -15.089 | 0.000 |
| | (0.000) | (34.647) | (17.283) | (0.000) |
| Stocks | -5.845 | 11.243 | 0.000 | -12.712 |
| | (13.213) | (27.637) | (0.000) | (15.074) |
| Bonds | 46.308*** | 0.000 | 0.000 | 0.836 |
| | (14.967) | (0.000) | (0.000) | (17.363) |
| CDs | 11.531 | -33.668** | 0.000 | 0.000 |
| | (7.506) | (13.707) | (0.000) | (0.000) |
| Constant | 133.713*** | 48.313 | 180.735** | 83.995 |
| | (25.182) | (81.135) | (70.797) | (88.220) |
| Observations | 378 | 125 | 85 | 94 |
| R-squared | 0.20 | 0.16 | 0.39 | 0.28 |

**Table 7-10: Subjective Probability of Moving into a Nursing Home in Next Five Years**

OLS Coefficients and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -1.225 | -9.143 | -0.447 | -7.237 | -14.870 | -18.811* |
| | (5.711) | (5.916) | (10.149) | (8.210) | (11.139) | (10.299) |
| False Negative | -6.824 | -0.961 | -11.920 | 11.922 | -9.749 | -7.148 |
| | (5.602) | (8.582) | (12.915) | (9.404) | (12.099) | (11.246) |
| False Positive | -4.202 | -4.333 | 0.136 | -6.840 | -15.659** | -13.191 |
| | (3.127) | (4.037) | (5.564) | (5.262) | (7.520) | (11.157) |
| Married | -3.528 | -5.013 | 4.333 | 0.798 | -6.434 | -4.045 |
| | (3.659) | (4.662) | (6.987) | (6.386) | (6.591) | (10.527) |
| Nonwhite | 2.610 | 2.801 | -5.979 | 1.333 | 2.412 | -0.106 |
| | (4.264) | (5.518) | (9.303) | (7.839) | (10.365) | (7.780) |
| Most Educated - Less than High School | -4.223 | -8.821** | -5.003 | -11.951** | 6.111 | 10.087 |
| | (3.280) | (3.946) | (6.302) | (5.400) | (9.755) | (8.698) |
| Age of the Oldest | 0.208 | 0.486 | 0.723 | -0.103 | 0.496 | 0.739 |
| | (0.230) | (0.449) | (0.630) | (0.408) | (0.795) | (0.942) |
| Number of Children Living Close | -2.214** | 1.195 | 0.560 | -0.897 | -5.974 | -0.882 |
| | (0.997) | (2.125) | (2.761) | (2.266) | (4.425) | (2.620) |
| Number of Daughters | -0.737 | -1.225 | -0.294 | 1.880 | 1.545 | 2.826 |
| | (1.500) | (2.128) | (2.609) | (2.269) | (4.158) | (3.987) |
| Number of Children | 0.242 | 0.829 | 1.264 | -0.318 | 1.070 | -3.403 |
| | (1.090) | (1.544) | (1.933) | (1.621) | (2.629) | (2.933) |
| Number of IADL Limitations | 0.585 | -0.249 | 2.372 | 0.740 | -0.884 | 3.566 |
| | (2.095) | (2.782) | (4.523) | (2.203) | (2.782) | (3.932) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | 2.969** | 0.676 | 1.888 | 0.829 | 0.540 | 0.243 |
| | (1.380) | (2.072) | (2.404) | (1.815) | (2.085) | (2.384) |
| Female | -2.822 | -2.866 | 9.059 | 4.657 | 9.290 | 0.080 |
| | (3.052) | (3.768) | (6.369) | (5.634) | (6.910) | (10.449) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 5.305 | -0.299 | -4.517 | 1.496 | -1.054 | 20.308** |
| | (3.388) | (3.934) | (7.681) | (6.255) | (8.887) | (10.093) |
| Less than $12,000 | 0.347 | 11.069 | -22.063** | -4.702 | 0.420 | -6.900 |
| | (4.354) | (7.223) | (8.991) | (7.501) | (12.370) | (11.643) |
| Self-Reported Health Status of Least Healthy | | | | | | |
| Good | 5.060 | 2.515 | -7.381 | 8.203 | 5.726 | -7.405 |
| | (3.299) | (5.414) | (7.346) | (7.748) | (14.468) | (14.447) |
| Fair | 7.023* | 3.902 | -3.299 | -0.926 | -5.382 | -8.522 |
| | (3.673) | (5.680) | (6.522) | (7.122) | (14.885) | (13.167) |
| Poor | 15.431*** | 7.174 | -0.125 | 0.815 | -10.582 | -3.734 |
| | (5.504) | (6.632) | (8.933) | (7.086) | (18.066) | (12.077) |
| Missing | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Cognitive Impairment | 6.062 | 6.489 | 23.255* | 11.876 | -19.586 | 87.949*** |
| | (13.006) | (11.660) | (12.848) | (14.793) | (16.604) | (21.556) |
| Cognitive Impairment - Missing | -7.244 | -17.010 | -28.137 | -19.962 | -19.969 | -103.536*** |
| | (5.413) | (12.895) | (19.784) | (15.577) | (21.293) | (19.296) |
| Current Asset Holdings | | | | | | |
| Real Estate | -6.260* | 7.113 | -4.396 | 2.570 | 17.334 | -4.265 |
| | (3.585) | (5.687) | (8.886) | (7.201) | (13.489) | (13.094) |
| Business | 0.018 | 2.824 | -14.068 | -4.635 | -22.401* | 5.379 |
| | (5.377) | (6.470) | (10.768) | (9.517) | (12.018) | (20.550) |
| IRA | -5.563 | 1.990 | -6.969 | -11.267 | -6.950 | 12.017 |
| | (3.641) | (5.365) | (6.077) | (7.056) | (8.895) | (12.184) |
| Stocks | 6.329* | 4.570 | 1.883 | 2.819 | 14.037* | 2.710 |
| | (3.428) | (4.903) | (6.404) | (5.898) | (8.229) | (9.316) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bonds | -12.685*** | 8.028 | 6.897 | -13.378** | 9.944 | 20.320 |
| | (4.070) | (7.992) | (6.019) | (6.726) | (12.031) | (26.746) |
| CDs | 0.050 | 3.640 | -8.274* | 6.931 | -4.311 | 3.283 |
| | (3.060) | (4.441) | (4.698) | (5.389) | (6.985) | (9.723) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | 0.000 | 0.000 | 33.188 | 0.000 | 18.199 | 0.000 |
| | (0.000) | (0.000) | (27.966) | (0.000) | (30.503) | (0.000) |
| Business | 68.460*** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (13.224) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| IRA | -13.567 | 0.000 | 61.231** | -31.427*** | -25.656 | 0.000 |
| | (11.462) | (0.000) | (30.237) | (11.157) | (16.347) | (0.000) |
| Stocks | 8.286 | 10.112 | -22.472*** | 21.110 | 36.514** | -20.242* |
| | (8.914) | (11.200) | (8.019) | (31.053) | (15.234) | (11.596) |
| Bonds | 36.102*** | -32.792*** | 0.000 | -2.575 | 0.000 | 0.000 |
| | (10.495) | (8.748) | (0.000) | (24.482) | (0.000) | (0.000) |
| CDs | -22.446*** | -14.470** | -30.995*** | -9.132 | 0.000 | 0.000 |
| | (5.512) | (6.595) | (10.869) | (13.591) | (0.000) | (0.000) |
| Constant | 3.685 | -27.606 | -34.748 | 24.802 | -16.530 | -30.321 |
| | (19.856) | (39.830) | (57.386) | (36.423) | (68.283) | (80.064) |
| Observations | 379 | 195 | 123 | 158 | 83 | 92 |
| R-squared | 0.14 | 0.16 | 0.23 | 0.21 | 0.42 | 0.32 |

**Table 7-11: Subjective Probability of Giving Financial Assistance in Next 10 Years**

OLS Coefficients and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -6.571 | -4.339 | 5.852 | 4.669 | -1.870 | -7.871 |
| | (4.961) | (5.237) | (12.725) | (8.401) | (7.654) | (7.803) |
| False Negative | 1.882 | -1.759 | -4.170 | -4.346 | -1.924 | -16.477** |
| | (5.060) | (5.387) | (12.304) | (7.306) | (10.134) | (6.952) |
| False Positive | 1.505 | 5.170 | 2.544 | -3.169 | -12.549 | -12.461* |
| | (3.297) | (4.926) | (7.347) | (6.499) | (8.809) | (7.417) |
| Married | -5.655 | -10.406** | -9.683 | -13.893* | 7.919 | -7.064 |
| | (3.687) | (4.892) | (9.971) | (7.773) | (8.280) | (7.053) |
| Nonwhite | 12.956*** | 2.476 | -13.082 | 12.945* | -19.436** | 3.641 |
| | (4.844) | (4.636) | (9.617) | (7.479) | (7.776) | (5.726) |
| Most Educated - Less than High School | -2.629 | -14.276*** | -10.847 | -2.781 | -2.880 | -3.833 |
| | (3.408) | (3.746) | (7.336) | (5.610) | (8.280) | (4.510) |
| Age of the Oldest | -0.143 | 0.210 | -0.117 | -0.025 | -0.401 | -0.150 |
| | (0.216) | (0.451) | (0.748) | (0.341) | (0.689) | (0.564) |
| Number of Children Living Close | 0.840 | 1.220 | -0.725 | 2.607 | -3.223 | 0.910 |
| | (1.419) | (2.448) | (3.755) | (1.845) | (3.479) | (1.875) |
| Number of Daughters | -0.028 | -0.276 | 2.041 | -0.433 | 2.549 | -0.439 |
| | (1.528) | (2.228) | (3.631) | (2.159) | (4.217) | (2.120) |
| Number of Children | -0.776 | 0.043 | -2.080 | -2.232 | -1.245 | 0.753 |
| | (1.181) | (1.477) | (2.681) | (1.540) | (2.508) | (1.618) |
| Number of IADL Limitations | 0.870 | -1.471 | -4.548 | -2.242 | -5.951* | -2.934 |
| | (1.675) | (2.288) | (4.740) | (2.329) | (3.079) | (2.125) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | 0.089 | 1.380 | -4.505* | -1.962 | 3.966** | -0.144 |
| | (1.018) | (1.469) | (2.571) | (1.371) | (1.702) | (1.545) |
| Female | -5.726* | -7.448 | -21.105** | -2.356 | -1.514 | -7.392 |
| | (2.997) | (4.509) | (8.850) | (5.508) | (6.426) | (6.621) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -11.323*** | -5.791 | -26.858*** | -14.593* | -16.897 | -6.017 |
| | (3.721) | (5.847) | (10.261) | (8.201) | (11.037) | (9.400) |
| Less than $12,000 | -14.041*** | -15.173** | -34.160*** | -23.471** | -9.400 | -10.509 |
| | (4.483) | (6.696) | (11.704) | (9.358) | (11.703) | (10.123) |
| Current Asset Holdings | | | | | | |
| Real Estate | 8.790* | 3.021 | 4.070 | 10.302 | 13.169 | -4.447 |
| | (4.929) | (6.624) | (13.847) | (10.066) | (8.293) | (9.988) |
| Business | -5.082 | -5.768 | 13.524 | -20.874** | -24.226** | 48.222*** |
| | (7.961) | (6.298) | (14.490) | (10.579) | (10.918) | (14.779) |
| IRA | 3.989 | 12.344** | -6.521 | 3.172 | 6.340 | 23.958* |
| | (4.707) | (6.088) | (10.507) | (9.124) | (9.621) | (14.006) |
| Stocks | 2.378 | 2.214 | -1.598 | 11.377 | 13.380 | 11.774 |
| | (3.430) | (6.817) | (9.650) | (7.801) | (11.552) | (7.868) |
| Bonds | -2.662 | 28.789*** | 4.108 | 5.966 | 5.741 | 15.026 |
| | (5.783) | (8.694) | (10.294) | (10.402) | (11.549) | (14.509) |
| CDs | -0.071 | 2.817 | -1.704 | 10.158 | 7.132 | 12.745 |
| | (2.916) | (4.733) | (7.893) | (6.314) | (8.055) | (8.208) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | 0.000 | 0.000 | 2.755 | 0.000 | 36.616 | 0.000 |
| | (0.000) | (0.000) | (41.007) | (0.000) | (22.142) | (0.000) |
| Business | 18.609 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (16.675) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| IRA | -9.662 | 0.000 | 33.635 | -10.541 | -19.282 | 0.000 |
| | (8.942) | (0.000) | (39.975) | (9.993) | (13.511) | (0.000) |
| Stocks | -5.297 | 10.155 | -25.311 | -16.846 | 83.823*** | 3.936 |
| | (16.113) | (19.738) | (23.142) | (14.257) | (15.070) | (14.697) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bonds | -16.883 | -11.767 | 4.150 | -14.256 | -68.479*** | 0.276 |
| | (15.961) | (10.061) | (36.529) | (26.790) | (22.117) | (8.634) |
| CDs | 15.052 | -11.268 | -0.282 | 15.693 | 0.000 | -5.052 |
| | (14.638) | (14.153) | (27.436) | (23.048) | (0.000) | (12.949) |
| Constant | 37.830** | 14.682 | 88.440 | 46.011 | 61.383 | 42.366 |
| | (17.917) | (38.450) | (68.809) | (29.715) | (57.707) | (50.506) |
| Observations | 395 | 225 | 134 | 194 | 99 | 109 |
| R-squared | 0.14 | 0.31 | 0.36 | 0.26 | 0.47 | 0.51 |

**Table 7-12: Subjective Probability of Receiving Financial Assistance in Next 10 Years**

OLS Coefficients and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | 8.866 | 8.182 | 14.735* | -6.389 | -9.495 | -0.339 |
| | (5.842) | (4.985) | (8.873) | (6.447) | (7.971) | (9.217) |
| False Negative | 1.614 | 9.880 | -4.538 | -0.186 | -5.680 | -8.224 |
| | (5.948) | (6.211) | (6.097) | (4.722) | (9.917) | (5.883) |
| False Positive | 3.013 | 2.895 | 4.359 | -1.718 | -0.699 | -10.272 |
| | (3.431) | (2.078) | (3.398) | (3.950) | (7.160) | (6.225) |
| Married | -3.505 | 1.226 | -7.978 | 3.391 | 0.440 | -4.332 |
| | (3.326) | (2.643) | (6.749) | (5.325) | (4.006) | (4.752) |
| Nonwhite | 3.034 | 0.483 | 6.252 | 2.522 | -11.529* | 6.519 |
| | (4.958) | (3.897) | (8.342) | (5.836) | (6.092) | (5.296) |
| Most Educated - Less than High School | -0.646 | -1.613 | 1.049 | 4.558 | 1.903 | -0.684 |
| | (3.207) | (2.933) | (4.613) | (3.478) | (4.142) | (5.488) |
| Age of the Oldest | 0.192 | 0.029 | -0.839* | -0.026 | -0.330 | -0.488 |
| | (0.247) | (0.302) | (0.429) | (0.340) | (0.474) | (0.584) |
| Number of Children Living Close | -1.759 | -1.229 | 3.468 | -0.722 | 2.627 | -0.930 |
| | (1.389) | (0.859) | (2.395) | (1.440) | (3.661) | (1.758) |
| Number of Daughters | -1.676 | 0.734 | -0.176 | -2.350 | -2.168 | -0.782 |
| | (1.969) | (1.534) | (1.806) | (1.601) | (3.607) | (1.737) |
| Number of Children | 2.299 | 0.266 | -0.609 | -0.113 | 2.301 | -1.538 |
| | (1.467) | (0.832) | (1.252) | (1.185) | (2.409) | (1.183) |
| Number of IADL Limitations | -0.199 | -1.742 | 5.531* | 2.469 | 3.576 | -4.312* |
| | (1.715) | (1.305) | (3.243) | (1.513) | (3.390) | (2.404) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | -3.320*** | -1.645 | 0.032 | 0.844 | 0.162 | 0.583 |
| | (1.003) | (1.158) | (1.686) | (1.191) | (1.599) | (1.221) |
| Female | 0.053 | 2.198 | -5.898 | -2.194 | -2.767 | 7.322* |
| | (3.127) | (1.887) | (4.740) | (3.691) | (4.302) | (3.813) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | 0.193 | 0.823 | -11.855 | 7.076** | -9.753 | 8.096 |
| | (3.073) | (1.922) | (7.176) | (3.572) | (6.325) | (4.977) |
| Less than $12,000 | 6.119 | 7.314** | -9.509 | 9.838** | 1.034 | 3.921 |
| | (4.284) | (3.623) | (7.794) | (4.799) | (6.972) | (6.901) |
| Current Asset Holdings | | | | | | |
| Real Estate | -0.008 | -0.801 | -7.006 | 13.067* | -2.519 | 11.513* |
| | (3.517) | (2.493) | (4.847) | (6.642) | (4.650) | (6.681) |
| Business | -0.746 | 0.804 | -7.036* | -1.101 | -12.496 | -10.402 |
| | (4.047) | (3.596) | (3.814) | (3.530) | (8.046) | (7.170) |
| IRA | 0.706 | -2.993 | -5.372 | 0.558 | -4.565 | -7.192 |
| | (2.962) | (1.882) | (3.547) | (2.781) | (6.284) | (4.920) |
| Stocks | -5.780** | 1.933 | -1.405 | -9.483*** | -0.293 | -0.779 |
| | (2.862) | (1.614) | (5.064) | (2.844) | (4.749) | (5.069) |
| Bonds | -2.904 | -2.361 | -2.949 | -2.632 | 2.453 | -5.516 |
| | (3.402) | (1.835) | (3.639) | (3.181) | (9.415) | (3.474) |
| CDs | -4.698 | -0.303 | -2.827 | 2.913 | 1.067 | -6.946* |
| | (2.894) | (1.841) | (3.444) | (3.567) | (4.809) | (3.510) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | 0.000 | 0.000 | 64.384*** | 0.000 | -21.088 | 0.000 |
| | (0.000) | (0.000) | (12.399) | (0.000) | (16.349) | (0.000) |
| Business | 47.107*** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (10.458) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| IRA | -44.942*** | 0.000 | -50.538*** | -9.462* | 14.075 | 0.000 |
| | (7.804) | (0.000) | (12.339) | (5.588) | (11.025) | (0.000) |
| Stocks | 1.007 | 13.256** | 47.548*** | -1.015 | 6.156 | -118.713*** |
| | (5.786) | (6.101) | (5.187) | (6.774) | (9.272) | (12.908) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bonds | 43.000*** | -10.847** | -37.141*** | 5.601 | -10.071 | 7.153 |
| | (6.016) | (4.470) | (10.730) | (5.552) | (14.590) | (10.136) |
| CDs | -17.153*** | -4.694 | -14.979** | 7.664 | 0.000 | 108.763*** |
| | (4.320) | (3.665) | (6.229) | (9.167) | (0.000) | (7.820) |
| Constant | 3.045 | -1.984 | 85.982** | 3.451 | 33.926 | 56.880 |
| | (20.770) | (25.677) | (35.363) | (27.597) | (40.809) | (48.809) |
| Observations | 402 | 227 | 140 | 201 | 103 | 111 |
| R-squared | 0.11 | 0.12 | 0.29 | 0.16 | 0.16 | 0.34 |

**Table 7-13: Subjective Probability of Leaving a Financial Inheritance**

OLS Coefficients and Standard Errors

| | Newly Disabled | | | Disabled for 2 Consecutive Waves | | Disabled for 3 Consecutive Waves |
|---|---|---|---|---|---|---|
| | 1995 | 1998 | 2000 | 1995 | 1998 | 1995 |
| True Positive | -9.934 | 3.106 | 16.304 | 9.858 | -0.754 | -7.445 |
| | (7.159) | (9.234) | (12.502) | (10.311) | (16.530) | (11.566) |
| False Negative | 4.530 | -7.027 | 14.771 | 1.056 | -7.426 | 14.796 |
| | (6.998) | (10.772) | (14.295) | (9.836) | (18.369) | (9.972) |
| False Positive | -5.421 | -1.651 | 3.616 | 8.678 | -2.995 | 1.761 |
| | (4.692) | (5.806) | (7.884) | (7.380) | (10.736) | (10.459) |
| Married | -8.533* | -2.997 | -4.479 | 2.100 | -4.747 | -0.599 |
| | (4.736) | (6.512) | (10.040) | (7.553) | (12.043) | (9.102) |
| Nonwhite | -4.770 | -12.751 | -11.881 | -4.481 | -32.064** | -28.482*** |
| | (5.221) | (8.726) | (13.085) | (8.937) | (12.680) | (8.539) |
| Most Educated - Less than High School | -1.543 | -5.570 | -6.591 | -3.114 | -5.816 | -17.665* |
| | (4.526) | (6.725) | (8.761) | (6.871) | (13.805) | (8.924) |
| Age of the Oldest | -0.026 | 0.423 | 0.421 | -0.516 | -0.395 | 0.602 |
| | (0.337) | (0.624) | (0.785) | (0.512) | (1.001) | (0.954) |
| Number of Children Living Close | -2.702 | 2.204 | -1.989 | -8.880*** | 7.774 | -1.100 |
| | (1.654) | (2.953) | (4.431) | (2.770) | (5.937) | (4.143) |
| Number of Daughters | -0.879 | -1.634 | 2.510 | -0.532 | -2.213 | 2.716 |
| | (2.233) | (3.088) | (3.815) | (3.619) | (5.128) | (3.562) |
| Number of Children | -0.087 | 0.242 | -5.712* | 1.199 | -1.031 | -1.803 |
| | (1.548) | (2.495) | (2.916) | (2.816) | (3.106) | (2.672) |
| Number of IADL Limitations | -5.366** | -3.499 | 4.927 | 2.352 | -2.376 | -2.783 |
| | (2.468) | (3.045) | (6.468) | (2.746) | (5.052) | (3.526) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of ADL Limitations | -2.566* | -3.712 | -1.592 | -3.091 | -2.846 | -2.356 |
| | (1.500) | (2.559) | (3.195) | (2.060) | (2.936) | (2.389) |
| Female | -9.830** | 9.222* | -12.596* | -8.196 | 8.823 | -14.311* |
| | (4.043) | (5.185) | (6.731) | (6.285) | (10.279) | (7.607) |
| Income (> $24,000 Omitted) | | | | | | |
| $12,000 - $24,000 | -13.773*** | -6.665 | -9.411 | -16.409** | -4.528 | -4.655 |
| | (4.977) | (6.416) | (9.473) | (6.620) | (13.522) | (10.432) |
| Less than $12,000 | -25.498*** | -22.995** | -23.754* | -21.251** | -22.852 | -20.209 |
| | (6.331) | (9.132) | (12.368) | (9.183) | (16.456) | (15.484) |
| Current Asset Holdings | | | | | | |
| Real Estate | 8.671 | 10.455* | 14.007 | 11.922 | 21.973* | -7.847 |
| | (5.636) | (6.209) | (9.123) | (7.407) | (11.179) | (9.767) |
| Business | 7.396 | -4.699 | 18.920** | -26.434* | -7.699 | 39.251* |
| | (7.661) | (7.852) | (8.785) | (14.555) | (18.853) | (19.851) |
| IRA | -0.174 | 12.914** | 6.724 | 4.867 | 1.601 | 18.868 |
| | (5.447) | (6.066) | (7.731) | (10.069) | (11.127) | (13.729) |
| Stocks | 11.906** | 12.437** | 13.883 | 27.896*** | 13.542 | 28.696*** |
| | (4.898) | (5.750) | (9.048) | (6.600) | (11.749) | (9.033) |
| Bonds | -0.080 | 20.061*** | 2.621 | 4.280 | 14.223 | -4.870 |
| | (7.287) | (6.103) | (7.905) | (10.050) | (11.219) | (12.661) |
| CDs | 10.815** | 10.245* | 2.580 | 16.342** | 6.014 | 5.108 |
| | (4.458) | (5.641) | (6.648) | (6.793) | (10.765) | (8.575) |
| Current Asset Holdings - Missing | | | | | | |
| Real Estate | 0.000 | 0.000 | 37.777** | 0.000 | -46.785 | 0.000 |
| | (0.000) | (0.000) | (14.775) | (0.000) | (34.555) | (0.000) |
| Business | -24.724** | 0.000 | -98.617** | 0.000 | 0.000 | 0.000 |
| | (11.025) | (0.000) | (44.846) | (0.000) | (0.000) | (0.000) |
| IRA | 0.000 | 0.000 | 30.346 | -39.048*** | -24.428 | 0.000 |
| | (0.000) | (0.000) | (38.689) | (12.165) | (22.597) | (0.000) |
| Stocks | -18.603 | -1.644 | 10.562 | 13.115 | 28.749 | 137.553*** |
| | (11.885) | (18.131) | (10.785) | (17.138) | (22.037) | (25.776) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bonds | 7.475 | 36.625*** | 47.808 | -18.378* | 20.504 | -21.427 |
| | (12.019) | (12.765) | (34.932) | (10.759) | (29.336) | (19.823) |
| CDs | -13.940* | 2.000 | -10.677 | 75.163*** | 0.000 | -76.422*** |
| | (8.435) | (11.819) | (30.102) | (10.903) | (0.000) | (20.645) |
| Constant | 77.880*** | 29.626 | 54.882 | 108.293** | 105.249 | 25.666 |
| | (28.522) | (53.818) | (70.893) | (45.354) | (84.453) | (84.564) |
| Observations | 397 | 216 | 133 | 185 | 98 | 112 |
| R-squared | 0.30 | 0.36 | 0.37 | 0.42 | 0.40 | 0.56 |

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