The link between individual expectations and savings: Do nursing home expectations matter?

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Extended Abstract

1 Introduction

Long-term care is an important issue facing older Americans. Those who reach age 65 have a 40% chance of entering a nursing home, and about 10% of those who enter will stay there for at least five years. The cost of a stay are high; on average there are estimated at US$60,000 and US$70,000 annually for a semiprivate and a private room, respectively, and may vary widely between regions. Long-term stays in nursing homes are, therefore, not likely, but very expensive. Medicaid, the only governmental program that pays for this type of care, has strict asset and income requirements for eligibility.

Individuals might prepare financially for the case of admission into a nursing home in three ways: by increasing their saving, decreasing their saving so as to benefit from Medicaid, and/or by taking out private long-term care insurance. Individuals wanting to insure themselves against nursing home risk face a variety of obstacles and

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long-term care insurance finances only about 3% of nursing home cost (Johnson and Ucello 2005).

This study gives insights into individual decisions which involve a rather complex process of assessing nursing home entry risk, the necessity to save, and then actually execute these decisions. Specifically, we are interested in two questions: First, do individuals have a reasonable idea about their probability of entering a nursing home? And second, is individual savings behavior affected by expectations?

There has been a variety of research using subjective expectation data, which has shown that expectations are often linked to the probability of outcomes (see, for example, Hurd and McGarry 2002), but has failed to find a strong link between subjective expectations and economic behavior (see, for example, Hurd, Smith, and Zissimopoulos 2004). We are extending this literature in several ways. First, we look at the subjective expectation of entering a nursing home in the future, which is an important and relevant risk for older individuals. Second, we analyze not only how well these expectations predict future nursing home entry, but we also analyze the effect of these expectations on savings behavior.

We use data from the US Health and Retirement Study (HRS) and its companion study, the Study of Assets and Health Dynamics Among the Oldest Old (AHEAD).[2] The main variable of interest is the subjective probability of entering a nursing home ("nursing home expectation"). The respondents were asked one of the following questions, depending on their age:

> *"What is the percentage chance that you will ever have to move to a nursing home?"*
>
> or
>
> *"What is the percentage chance that you will move to a nursing home in the next five years?"*

To account for the change in wording, taking into account the age structure of the respondents, we only consider the answers to the question of entering within the next five years. Our working sample includes 15,089 respondents.

[2] See Juster and Suzman (1995) for an overview of the HRS and AHEAD.

2 Do subjective nursing home expectations matter?

We assess the predictive power of the expectations for the actual outcome by using survival analysis to see if the subjective probability of entering a nursing home is economically and statistically significant.[3] We start this section with an overview of the factors affecting nursing home entry and of the responses to the nursing home expectation question.

There is a variety of well-established predictors of future nursing home entry (see, for example, Friedman et al. 2005). These include age, gender, income, net worth, and education. The latter, age and low income have been found to be positively associated with nursing home entry, while net worth is negatively associated. Women are more likely to be admitted than men. Whites are more likely to be admitted into a nursing home than African-Americans, Asians, and Latinos. Individuals living alone are more likely to be admitted, as are individuals without living children or living siblings. Physical and mental health variables are important predictors, including having activity-of-daily-living impairments (ADL's) or instrumental-activity-of-daily-living impairments (IADL's).

The mean probabilities of nursing home entry in our working sample lie between 11.5% and 14%, depending on the wave, and are slightly higher for women. They are also significantly higher for individuals with worse self-reported health. Individual answers include the full range from 0 to 100, with rounding to the nearest 5% between the values of 15 and 95. Answers of 0 and 50 are relatively common, but seem to reflect rounding of probabilities rather than focal point answers. Non-response rates are low. Refusal rates were very low with under 1% in all waves, while "don't-know" rates were under 10%.

A look at the mean nursing home expectation by actual entry is informative.[4] The means are about 5% higher for those who actually entered a nursing home before the next wave than for those who did not. The overall mean probability given in wave 2 for entering a nursing home in the next five years (13.77%) is very close to the actual percentage who entered after 5 years (13.07%).

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[3] Lindrooth, Hoerger and Norton (2000), using the first two waves of AHEAD, have found that the covariates explaining expectations about nursing home entry are consistent with the characteristics of those entering a nursing home.

[4] AHEAD cohort only with expectations in wave 2 as baseline.

To analyze the predictive power of subjective probabilities we use a multivariate non-parametric Cox proportional hazard model, stratified by health status, and define the failure event as having entered a nursing home since the last wave and specify chronological age as model outcome. We find that subjective expectations matter even after controlling for known risk factors of entry into a nursing home. Using dummies for having a nursing home expectation of strictly between 0 and 51 and higher than 50, we find that these have a relatively large and highly statistically significant effect even.[5] Those having a probability between 0 and 51 have a hazard 0.23 higher than those with a probability of 0; those with a probability over 50% have a 0.60 higher hazard. Other covariates have the expected effect. Of these controls, having 4 or more ADL's has by far the biggest impact. Those respondents have 5 times the hazard of respondents without any ADL conditions.

3 Do expectations influence savings behavior?

The effect of the expectation of entering a nursing home on savings behavior should be different for individuals expecting to be eligible for Medicaid or to be relatively close to eligibility and those who do not. Eligibility for Medicaid depends both on income and assets, and the eligibility criteria are rather strict, although spouses are allowed to retain part of their income and joint wealth. The primary residence is excluded from the eligibility test. Means-tested benefit programs have been found to have a negative effect on savings (see, e.g., Powers 1998). One would expect the same effect from the Medicaid eligibility rules for those eligible or close to eligibility, in order to avoid the spending down of assets while in the nursing home before becoming eligible for Medicaid.

For those individuals who expect to pay for the costs of the stay themselves, one might expect increased savings in order to prepare for this event and to buy better services such as a private room while in the nursing home. In addition, individuals might save in order to avoid going to a nursing home, by being able to afford in-home nursing care or custodial care. This might also hold for individuals with lower income and or wealth, but should be less pronounced since these services are relatively expensive.

[5] Including a continuous variable for nursing home expectation gave a similar result.

In our econometric analysis, we only consider individuals who are singles to avoid confounding affects of changes in marital status. We measure savings as the difference between the logs of non-housing wealth to reduce the measurement error in wealth.[6] We also include the log of non-housing wealth as control variable in our regression, since it is a major predictor for savings.[7]

A fixed-effects regression of savings shows a positive probability of nursing home entry (0.004), which is statistically significant only at the 11% level. As interaction with the lowest wealth quartile it is negative (-0.01) and statistically significant at the 1%-level. Respondents in the lowest wealth quartile save less with increasing nursing home probability relative to all other wealth quartiles. Wealth has a negative effect on saving, as does receiving home nursing care, most likely because of the cost for care involved. The number of children increases savings, probably because of the bequest motive. One can draw the conclusion that individuals in the lowest wealth quartile save less when faced with a higher nursing home probability, while the savings behavior of those in the other wealth quartiles is slightly positive or unaffected by increased nursing home probability. This would imply that there is no asset spend-down for individuals with increasing nursing home probability, since those in the first wealth quartile have wealth below the Medicaid threshold.

4 Conclusions

Long-term care is an important issue facing older Americans because of the relatively high probability of ever entering one and its high cost. In this paper, we examine individual expectations about future nursing home entry and study the relationship between these expectations and savings behavior, using data from the US Health and Retirement Study. We find that subjective expectations are closely related to actual probability of entry and actual future nursing home entry. We find only a weak link between these expectations and savings behavior, even after controlling for initial wealth. This is similar to the result of others who have studied the link between subjective expectations and economic outcomes, and have also found only a weak relationship.

[6] Specifically, we measure savings as the difference in logs of wealth, where the log of wealth = log(wealth+1) if wealth >= 0 and = - log(1-atotar`num') if wealth < 0.

[7] Potential endogeneity of wealth is somewhat mitigated by the fact that wealth is mostly the result of savings during the work life, rather than during old-age.

There are several possible explanations for this disconnect between expectations and savings behavior. Individuals who perceive that they need more precautionary savings might start doing so at a much younger age than when we observe them, when most individuals are about 70 years of age. Another possible reason is that individuals might have only limited information about both the cost of nursing homes and about who is paying for nursing home stays.

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