

Until recently, the study of health and mortality among adults in the Latin American and Caribbean region was confined to examinations of aggregate trends in mortality by countries or by states and provinces within countries. In the last five years, several surveys retrieving much richer information on older people have been fielded successfully (Wong, Palloni, Pelaez and Markides, 2005).

There are several features that set the population aging process in Mexico apart from others. These features are singularities in an otherwise standard landscape of aging (Palloni et al. 2002). First, the speed of aging in the next three to five decades will be unprecedented. Second, this fast pace and the demographically premature aging will take place while the country has not been able to achieve high standards of living. Third, the compressed aging process will take place in the midst of weak economic performance, tense intergenerational relations, and shrinking access to health care services brought about by the social sector reforms towards privatization of the health and social security systems. Fourth, birth cohorts reaching age 60 and over after 1990 are unique in that they are largely the product of increased childhood survival in the absence of improvements in living standards. The frailty in old age among these cohorts, exposed to infectious diseases and early-life malnutrition, could be higher than if mortality had declined accompanied by improved standards of living. Fifth, historical inequality in the access to health care and education is predominant throughout Mexico, and international migration has been a common survival strategy for cohorts of current elderly. While their migration history to the U.S. may represent economic advantages in old age (Wong et al. 2005), it may also represent enhanced exposure to health risks and stresses during their working age.

What factors explain health transitions among cohorts of individuals aging in this historical, social, and economic context? Research with population based data shows that health status among older adults is associated with factors that capture the life span conditions and behaviors. Among these the most important are: biologic and genetic factors, early health status, human behavior influencing labor market productivity, income, access to health care, and environmental risk factors particularly those implied by lifestyle (smoking, drinking alcohol, exercise, and occupational careers). There are two issues that complicate the modeling of the determinants of health status. One is the possibility of reverse causality, whereby part of the association between socioeconomic factors and health observed at one point in time may be attributable to the influences that past health had on current socioeconomic status. To address this issue at least partly, we use panel data and model the health changes controlling for the baseline health status.

In this paper, we use data from one of those surveys, the Mexican Health and Aging Study, waves 2001 and 2003, to examine the determinants of health transitions among older adults. We focus on unobserved heterogeneity, that is, the role of latent, unobserved factors such as attitudes or preferences that affect health. We use spouse data to essentially reduce or eliminate the influence of unmeasured covariates that are common to both spouses on the health of each. Comparisons of the results from these models with those from models based on individuals can provide indications about the seriousness of the problem of unobserved heterogeneity.

We use data from the Mexican Health and Aging Study (MHAS). This is a nationally representative, prospective panel study of Mexicans aged 50 and older in 2000, funded by NIA/NIH. Interviews were sought of spouse/partners of target individuals regardless of their age. Data were collected on multiple domains of health; demographic traits, including the migration history of individuals and their family; family networks and transfers exchanged; work history; income, assets and pensions. States in Mexico with high rates of out-migration to the United States were over-sampled. Anthropometric measures also were obtained from a 20% sub-sample of respondents. Baseline interviews were completed with about 15,000 respondents. The baseline survey was conducted in 2001, and a follow-up in 2003. An exit interview was sought in 2003 with a next-of-kin of deceased persons. Sample attrition was small (7% at the individual level) for a total of about 12,000 follow-up interviews with surviving individuals who were 50 or older at the baseline. For the purposes of the paper, we shall use the sample of 11,200 direct interviews to individuals aged 50 and older at baseline (and their partners/spouses regardless of age), who responded to the survey also at the 2003 follow-up. We compare our results using the subgroup of observations from individuals in couples. For the latter, we use 5818 interviews completed from 2909 couples.

To construct the outcome variable, we focus on the Self-Reported-Health (SRH) of individuals, using the response to the question “overall, how would you rate your health: excellent, very good, good, fair, or poor?” We construct the transition measure and define the outcome variable as a dummy taking value of 1 if the person reports worse health in 2003 compared to 2001.

We model the probability of reporting worse health using standard probit regression models for individual models. For the couple models, we formulate one probit equation for each spouse’s health transition. These equations are estimated simultaneously with bivariate probit models, an extension of Zellner’s seemingly unrelated regression analysis (Greene 2000, Stolzenberg 2001). These models allow a non-zero correlation between the residuals of each equation. There are four sources for this correlation: common unmeasured factors influencing health status, shared sources of reporting errors, assortative mating and the influence of one spouse health status on the other.

As explanatory variable we include factors evaluated in wave 1: demographic characteristics (age, sex, marital status), and traits that influence changes in health status, both in linear and non-linear forms (smoking, income, wealth, early childhood conditions, education, access to medical care). We shall also include the wave-1 health of the individual, and in the couple model, the wave-1 health of the individual’s spouse. This enables us to assess whether the health status of one spouse affects the health transitions of the other spouse.

We have completed preliminary analyses of the outcome variable for health transitions at the individual level. Figure 1 shows the unadjusted propensity to report worse health in 2003 compared to 2001, by the level of economic status at the baseline. We show economic status as a combined measure of low/medium/high income and assets in 2001.

The negative-slope in the figure conveys a pattern of faster health deterioration associated with lower economic status. Within each level of assets, in particular in the “low” and “high” categories of assets, the income gradient is also evident: conditional on each level of assets, those with lower income have faster health deterioration.

The paper is organized as follows: we provide a description of the conceptual framework that we use to model health transitions; we describe the country institutional setting and the data, followed by the multivariate regression models that we use. In particular we pay attention to the interpretation of the results after comparing individual and couple models. We present results and conclude on the methodological advantages of the use of couple models to examine individual health transitions in older adults.

References

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FIGURE 1. Percent with Worse Self-Reported Health in 2003 than 2001,
by Income-Assets in 2001

