

Ageing, Disability and Long-Term Care Burden in Latin America and the Caribbean Countries (LAC)*

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I. Introduction and Objectives

Assessing the effects of ageing on the magnitude of costs of long-term care services for dependent elderly in Latin American Countries is important for three reasons (Palloni et al., 2006). First, the speed of demographic aging in these countries will be unprecedented, at least twice as large as that observed in Western European and North American (excluding Mexico) countries.

Second, the population reaching age 60 or more after 2000 is unique: they are individuals who benefited from technological improvements and medical interventions that increased childhood survival during 1940 and 1970 and, to a much lesser extent, from improvements in standards of living. If conjectures connecting early life health conditions and adult disability and morbidity are correct, these birth cohorts will be more susceptible to the major chronic diseases that dominate at old age (diabetes, hypertension, and cardiovascular diseases). And, if so, the burden of associated disability will be particularly high.

Third, rapid aging will be occurring in a fragile and changing institutional environment. Institutions that traditionally operated as safety nets in the past, protecting elderly of lower socioeconomic status, are rapidly being reformed, transformed or dismantled. To make things worse, the ratio between potential caregivers and elderly persons is projected to decrease sharply everywhere, from levels of about 5.5 in 1950 to about 2.2 in 2010.

The main objective of this study is to measure for the first time the economic burden on families and elderly associated with elderly' inability to live autonomously in Latin American and the Caribbean countries. We analyze information for Buenos Aires (Argentina), Mexico and Puerto Rico as these sites have all the information available to produce relatively accurate estimates of disability/dependence status and of associated economic costs. We focus on three types of long-term care services: informal in-home care, formal in-home care and nursing homes and estimate costs associated with scenarios where care is provided through a variable mixture of the aforementioned types of care.

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Individual's expected costs over their residual lifetime after age 60 are estimated by combining expected durations in states of disability and estimated costs for mixtures of the three types of aforementioned care. Given sharp observed differences in life expectancies and disability between genders, we calculate estimated costs separately for males and females. Also, to give an idea about the relative burden of dependence for individuals and families alike we calculate individual expected costs and average annual costs *relative to the average per capita family income* for the whole populations and for the lowest and the highest quintiles of income.

Data and Methods

Unit Costs for Long-Term Care Services

Costs for long-term care formal services in Argentina were obtained from a specially designed study carried out during November - December 2006. First, information on government programs related to the supply of long-term care services as well as in-home private care services was collected¹. Second, a questionnaire was administered in 51 residential facilities (with a total of 200 beds) that cater to elderly persons in Buenos Aires. The sample is a 10 percent sample of the 505 facilities in our sampling frame.

Costs at residential facilities in Puerto Rico were retrieved from the PREHCO's study and from a recent report on residential care in Puerto Rico (AARP, 2006). Since in Puerto Rico there is no information about costs on in-home formal care provided by trained caregivers, we assume throughout that costs in the island follow the same price relation between formal and informal in-home care services estimated in Argentina.

Costs of in-home formal care in Mexico were also calculated using the same relation between informal and formal care observed in Argentina. Since there are no estimates of costs in residential homes, these were estimated using the observed relationship between in-home care and formal residential care observed in Argentina and Puerto Rico².

In all three countries ***costs for informal care*** were approximated using the average market salary that caregivers would receive given their age, sex and attained education. In the case of a retiree caregiver, the opportunity cost was estimated using the wage paid for a job considered "equivalent" to giving care to a dependent person. Average salaries were estimated using official data: The National Survey of Households Revenues and Expenditures (INEGI, 2005), for Mexico; The Household Continuous Survey (INDEC, 2006) in Argentina, and from the Public Use Microdata Samples (Census Bureau, 2005) in Puerto Rico.

Prevalence of Dependence

Estimates of prevalence and of the number of dependent elderly relies on three sources of information: the Health, Well-Being, and Aging project (Salud, Bienestar y Envejecimiento, SABE 2000) which is a cross-sectional survey for seven big cities in

¹ Costs of formal in-home care (from qualified caregivers) were collected from the NGO's "Red Mayor".

² Since the assumptions to approximate Nursing Home costs in Mexico are strong the overall estimation of costs including this type of care should be taken cautiously.

LAC countries, including Buenos Aires (Argentina); the Mexican Health and Aging Study (MHAS, 2001 & 2003), a panel study for Mexico; and the Puerto Rican Elderly: Health Conditions study (PREHCO, 2000/2003 & 2006/2008), a panel survey for Puerto Rico.

Level of dependence is measured using assessment of limitations to perform Activities for Daily Living (ADL), Instrumental Activities for Daily Living (IADL) and of severe cognitive problems (CP). We use Cluster Analysis to identify three groups (latent classes) according to their disability profiles: **Group I** contains individuals with no cognitive problems or physical limitations (ADLs or IADLs); **Group II** is mainly composed by elderly persons with IADL problems but with no cognitive or ADL problems; **Group III** contains mainly senior persons with ADL difficulties and no cognitive problems and, finally, **Group IV** is made up of individuals with severe cognitive problems.

Long-term care needs were then approximated within each of these groups using information about the frequency of in-home assistance received with ADLs and IADLs. However, as intensity of care received by elderly dependent persons is, in all likelihood, less than the intensity of necessary care, we (partially) correct this bias by including only elderly people who do not live alone who, on average, we found they receive more assistance.

Preliminary Findings

Estimates of costs have been calculated assuming four alternative care scenarios:

Alternative 1: assumes that all dependents receive formal in-home care;

Alternative 2: assumes informal in-home care for all dependents;

Alternative 3: assumes formal in-home care when persons suffer from moderate dependence and that individuals are institutionalized when they have serious dependence (in non-psychiatric residential facilities) or when they have severe dependence associated with cognitive problems (in psychiatric residential facilities);

Alternative 4: is similar to Alternative 3 but here we assume that all in-home care is informal.

Preliminary estimates of individual expected costs³ suggest that Puerto Rico has the highest levels of long-term care costs (both, in US dollars at current prices and when converted into purchasing parity power in each country) whereas Mexico has the lowest costs. Argentina is an intermediate case. Our analysis also shows very high costs associated with scenarios based exclusively on in-home care. Although formal in-home care alternative is more costly than informal one, both of them are significantly more expensive than alternatives that combine in-home care with institutionalization for elderly with severe dependence. Thus, the evidence we marshal here supports the idea that in-

³ The individual expected cost is the total cost during the expected duration of the dependence status. It is the result of multiply the costs associated to each level of dependence per the life expectancy in the respective state.

home informal care is the most costly strategy of long term care for disabled people in these countries. However, a shift to the least expensive alternative will not automatically translate in significant savings as this (Alternative 4) is quite costly as well. For instance, expected costs (during the entire dependence stage) are about 168,665 US dollars (2006) for females and 102,973 for males in Puerto Rico; 43,732 dollars (2006) for females in Buenos Aires and 20,050 for males; and, finally, 21,112 dollars (2005) for females and 13,223 for males in Mexico. Expressed in terms of purchasing parity power (2003-2004), these values correspond to 203,211 (females) and 124,064 (males) in Puerto Rico, 141,073 (females) and 64,679 (males) in Buenos Aires, and 28,565 (females) and 17,891 (males) in Mexico.

Observed differences between countries are associated with differences in unit costs of services provided (largest in Puerto Rico, either in dollars or purchase parity power), prevalence of dependence (38 percent in Puerto Rico, 33 percent in Buenos Aires, and 20 percent in Mexico), and the proportion of aged persons in each country (14 percent in Puerto Rico, 13.8 percent in Argentina, and 10 percent in Mexico). Therefore, greater resources are needed (in relative terms) in Buenos Aires and Puerto Rico than in Mexico, due to a more aged population and larger disability prevalence rates.

How much of the personal or family income do these estimated costs represent? In order to answer this question we estimate expected earnings from retirement (EER), that is, the average income from retirement multiplied by the residual life expectancy at age 60) and the expected value of per capita family incomes⁴ (EFI), or the average per capita family income within families with at least one elderly individual multiplied by the residual life expectancy at aged 60). When comparing expected costs (EC) with expected earnings, we observe that for Alternative 4 (least expensive), EC represents 81 percent of EER and 52 percent of EFI among females in Buenos Aires; 80 percent of EER and 65 percent from EFI, among women in Puerto Rico; and, finally, 28 percent of EER and 13 percent of EFI among females in Mexico. Obviously, corresponding figures for males are lower: EC represents 33 percent of EER and 26 percent of EFI in Buenos Aires, 44 percent of EER and 48 percent of EFI in Puerto Rico, and 16 percent of EER and 8 percent of EFI in Mexico. When distinguishing the proportion of expected earnings that these costs represent for the poorest and the wealthiest (fifth and first quintiles of income), we unveil the enormous difficulties that people of with low levels of resources will face to cope with elderly dependence. In the least expensive formal alternative (that is, Alternative 3), costs for women surpass their expected earnings in all cases. The ratio of costs to earnings is greater in Puerto Rico reaching a value close to 4, followed by Buenos Aires, where the ratio is more than 2 times.

These preliminary results are revealing. They show a very high burden of dependence in all three countries. They also demonstrate the need for large individual lifetime savings to offset long term care expenses in any of its flavor as well as the relative importance of having in place government support of some kind as a safety net for the neediest among the elderly.

⁴ We took into account family incomes for those families with at least one individual 60 year or older.