SURVEY ON HEALTH AND WELL-BEING OF ELDERS

Prepared by

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INTRODUCTION AND ORGANIZATION OF THE REPORT

This document reports on the content of the project SABE (Salud, Bienestar y Envejecimiento) a multicenter survey to investigate the health and well-being of older people in seven capital cities in countries of Latin America and the Caribbean[1]. The main objective of the project was to produce a comparable database in the participating countries to evaluate key conditions as well as to enable the analysis of simple models involving socioeconomic determinants. The core element of the databases is the information elicited through a survey of a random sample of target individuals (aged 60 and over) and, in some cases, of their surviving spouse. The survey included modules on basic demographic and household characteristics, self-reported health and chronic conditions, anthropometric measures, disability, depression and cognitive status, use and access of health services, family and institutional transfers, and labor force and retirement. The samples were drawn in each of the seven cities and, thus, do not represent the entire populations. Despite this limitation, it is hoped that the information retrieved will provide a useful and unique glimpse into the characteristics of a sub-population that is growing very rapidly and about whose characteristics very little is known at this time.

This report is organized in two sections. The first section contains background information about SABE, identifies features of the organization of the study, includes brief introductions to the protocols for data collection used in all countries, and offers a general evaluation of sample characteristics. This first section is organized in four chapters. Chapter 1 contains an assessment of demographic conditions in the region that promote aging, defines the nature of the study, and provides a description of the organization of SABE. Chapter 2 describes briefly the organization of SABE and the various sources of financial and institutional support. Chapter 3 consists of a summary of sample procedures, sample characteristics, field operations and organization principles applied to data files, as well as a handful of tabular descriptions applicable to the participating cities. Also reviewed in this section are the guidelines and protocols adhered to as a way of attaining the very laudable but elusive goal of producing a body of highly consistent and strictly comparable data. Finally, Chapter 4 is a concise description of special protocols and procedures followed by all cities participating in SABE. These refer to instruments of data collection designed to retrieve information especially useful for older people.

Section II consists of a summary of results pertaining to the following areas: demographic characteristics (age, gender, marital status and education), living arrangements and transfers, labor force participation and sources of income and, finally, physical and mental health status. Per force, this is a brief description of results. For more details the reader is directed to the Virtual Library on Health and Aging at www.bireme.br/aging/. For access to the databases the reader should write to Dr. Martha Peláez, Regional Advisor on Aging and Health at the Pan American Health Organization, 525 Twenty third Street, NW, Washington DC 20037 or by e-mail at the following address: pelaezma@paho.org. All data bases and pertinent documentation are also available

[1] The participating countries with the respective cities (in parentheses) are the following : Argentina (Buenos Aires); Barbados (Bridgetown); Brazil (Sao Paulo); Chile (Santiago); Cuba (Havana); Mexico (Mexico City); Uruguay (Montevideo)

SECTION I

BACKGROUND AND NATURE OF STUDY

CHAPTER 1: THE AGING PROCESS IN LATIN AMERICA AND THE CARIBBEAN AND THE NATURE OF THE STUDY

This chapter casts the SABE study against a background of rapid growth of the older population in the region[2]. It explores the demographic conditions that are responsible for an aging process that is occurring more rapidly than in more developed countries and that possesses unique characteristics. These, combined with an unstable institutional context and unfavorable economic environment, generate conditions that make the process far more complicated than what it has been in other areas of the world.

1.1. Demography of aging in Latin America and the Caribbean

The demographic momentum of aging in the region is rooted in patterns of population growth experienced over the last 50 years or so. These patterns have led to continuous increases in the rate of growth of the older population (aged 60 and over), to significant shifts in other indicators of aging, such as the mean ages of the population and, finally, to increases in the overall speed of aging in the region. The profile of this process now and over the next ten years or so is mainly attributable to the sharp mortality declines experienced after 1940. Although it is conceivable that this process may be reversed by sudden changes in vital events, the most likely scenario is one where aging will be reinforced as fertility levels plummet toward lower levels completing a transition that started in earnest only after 1970. Thus, aging in the region is driven by two forces: one is unchangeable for it is the result of past demographic history, and the other is unlikely to be malleable since it is the outcome of large macro processes with a powerful momentum of their own.

Although there are other useful alternatives, three indicators of aging were focused on: the proportion of the population above age 60, C(t), the mean age of the population, A(t), and an indicator of the availability of support among the younger generations, L(t). The first indicator is a conventional measure and needs little introduction. The second is also straightforward, albeit much less used, but of extreme utility to understand patterns of growth of the older population. The third, L(t), defined as a ratio of adult to older adults, is a crude indicator of kin availability and of constraints in the patterns of the living arrangements of older persons.[3] Although these indicators are loosely interrelated, the relation weakens when populations depart from stable equilibrium. Altogether, these indicators suffice to characterize the demographic nature of the growth of the older population. (Palloni et al., 2001)

a. Demographic regimes in the region and indicators of aging

Populations with sustained high levels of fertility will have lower values in C(t) and A(t) but higher values in L(t) than populations with lower fertility levels. Mortality has an ambiguous effect

[2] In this document the term "region" refers to Latin America and the Caribbean
[3] Another indicator of aging is the classic "dependency ratio" which is not discussed in this report.

on all indicators. In societies with high mortality levels, an improvement in survival conditions leads to lower values of C(t) and A(t), and is somewhat neutral for L(t) because those who benefit most from the improvements tend to be infants and young children, and much less so adults and older persons. In these societies lowering mortality levels has the same effect as does an increase of fertility, namely, it inflates the relative size of the cohorts who are younger than 5 years. However, in societies with lower levels of mortality, improvements in survival tend to benefit more adults and older adults, thus tilting the age distribution in the other direction. As a result, if two societies with similar levels of fertility but different levels of mortality are compared, the one with a lower level of mortality will have higher values of C(t) and A(t) and lower values of L(t) than the society with higher *mortality if and when mortality levels are relatively high at the outset*. As a consequence of these relations, the association between all three indicators in populations with similar regimes of mortality and fertility is close. Indeed, in this comparative static framework, knowledge of more than one indicator provides redundant information. However, in societies with de-stabilized demographic regimes where fertility or mortality or both have been changing rapidly, the relation between indicators will not always be as tidy and close, and examination of each of them merits separate attention.

No country in the region belongs to a stabilized population form. The actual regimes of de-stabilization are quite heterogeneous but admit a rather simple, though coarse, characterization. With a few exceptions (Argentina, Barbados, Cuba, Puerto Rico, and Uruguay), countries in Latin America and the Caribbean experienced high levels of fertility until about 1965-1970, when a precipitous decline began to spread in all but a handful of nations (mostly Central American, Bolivia, Paraguay, Peru and Ecuador). Unlike fertility, mortality began to decline prior to 1950, although the bulk of the gains in survival took place during the post-World War II era. In Argentina, Cuba, Puerto Rico and Uruguay, pre-transitional fertility levels were lower than in the rest of the region, and began to decline before 1945. As of 1990 the age structures of all countries in the region reflect de-stabilized demographic regimes, mostly a combination of recent sharp fertility reductions and of less recent but equally sharp reductions in mortality.

Table I.1 contains estimates of C(t), A(t), and L(t) for 1950-55 and 1990-95, and projected values for 2020-25 for countries in Latin America and the Caribbean and, for comparison purposes, the United States (US) and Japan.

The momentum of aging in the region is evident in this table as the empirical distributions for all the indicators converge toward values associated with increased aging. Simultaneously, there is an increase in regional variance due to heterogeneity in the timing of the mortality and fertility transitions in the region. While C(t) was below 10-12 percent everywhere in 1950, the latest statistics for 1990 indicate that Argentina, Cuba, Barbados, Puerto Rico and Uruguay have all surpassed that value, and projections for 2020-25 suggest that only in four countries will C(t) be contained below 12 percent. The fraction of the population above age 60 in other countries of the region will increase sharply and approach values similar to those reached by the US and Japan.

Over long periods of time--long enough to cancel out irregularities due to transient phenomena-- the rate of change in A (t) is an indicator of the *speed of aging inherent in a demographic regime*. In societies of the region, where mortality and fertility declines are

concentrated in a few years, the speed of aging is much higher than that in areas such as Western Europe and North America, where mortality and fertility decline took place more gradually, over extended periods of time. The contrasts between the speed of aging in Latin America and the Caribbean, on the one hand, and North America and Western and Northern Europe, on the other, are startling. (UN: World Population Ageing 1950-2050) Indeed, they imply that the speed of aging in the region will be at least twice as high as it was in other regions of the world for most of the time it takes to complete the passage from a youthful to an older society. The main implication of this regularity is that the transition toward older societies in countries of the region gathers speed when their age distributions are still relatively young (Palloni et al., 2001).

L(t) is a telling indicator for it reflects the availability of members of younger generations to older adults. In many societies living arrangements of elders and the quality and quantity of transfers toward older persons are strongly influenced by the magnitude of L(t). During the period 1950-2020 the median value of L(t) in the region drops from about 4.65 to 3.25 while its variance increases, reflecting inter-country differentials in the timing of the transition toward an older population. Barring reversals of fertility trends, the value of L(t) will continue its steep decline and will approach rapidly levels close to 1.5 or less. As with other indicators of aging, relatively large changes in L(t) are packed in a very short period of time. In Northern and Western Europe and North America the transition towards an older population involves changes from values not exceeding 3.5 to values around 1.5 while countries of the region experience far more massive changes, as the reduction in the absolute value of L(t) is almost twice as large, from values around 5.5-6.0 to about 2.5 (Palloni e al., 1999). Second, if future trends conform to projections, the change from levels of L(t) of about 3 to values around 1.5 will occur over a period of time that is nearly half as long as the period of time within which the same transition took place in North America and Northern and Western Europe. The differences are striking, and suggest that the impact of aging in the region will be felt much more suddenly.

b. Rate of growth of the older population in the region

As in the case of total populations, an important characteristic of the population above age 60 is its rate of increase, R(t). Table I.2 displays values of R(t) for approximately the same periods reviewed before. To have a sense of magnitude, note that with a constant rate increase of .020, the doubling time of a population is of the order of 35 years, whereas a rate of increase of .040 produces a doubling time about half as long. Accordingly, the population aged 60 and over during the period 1980-2025 in the region will, on average, experience at least one doubling and, in more than half of the cases, a trebling before the year 2025. Two regularities associated with these patterns are important: the rate of growth of the older population in the region and the trajectory of the rate of increase of the older population.

TABLE I.1: Values of the proportion of the population above age 60 [C(t)], the mean age of the population [A(t)] and the ratio of adults to older adults [L(t)] for 1950 – 2025: Countries in Latin America and the Caribbean, the United States, and Japan. (Calculations using the United Nations Database 1999)

Country	1950-1955			1990-1995			2020-2025		
	C(t)	A(t)	L(t)	C(t)	A(t)	L(t)	C(t)	A(t)	L(t)
Argentina	7.0	25.5	4.95	12.9	31.3	3.03	16.6	35.6	2.89
Bolivia	5.6	24.2	4.65	5.8	23.9	4.34	8.9	29.3	3.97
Brazil	4.9	23.5	5.16	6.7	27.4	4.31	15.3	35.0	3.24
Chile	6.9	25.4	4.52	9.0	29.6	3.72	18.2	36.2	2.69
Colombia	5.6	24.2	5.02	6.2	26.1	4.19	9.7	33.4	3.28
Costa Rica	5.7	24.3	4.22	6.4	26.4	4.27	14.3	33.8	3.09
Cuba	7.3	25.8	4.51	11.7	33.1	3.30	25.0	42.2	2.44
Dominican Republic	5.2	23.8	4.59	5.6	25.7	4.50	14.2	34.2	3.25
Ecuador	8.1	26.6	3.65	6.1	26.9	4.16	12.6	36.5	3.53
El Salvador	4.8	23.4	4.71	6.0	24.9	3.73	10.1	31.7	3.88
Guatemala	4.3	22.9	5.19	5.1	22.1	4.29	7.4	27.2	4.54
Honduras	3.9	22.5	5.40	4.5	22.3	4.57	8.6	29.4	4.17
Mexico	7.1	25.6	3.89	5.9	25.4	4.21	13.5	34.2	3.43
Nicaragua	4.1	22.7	5.15	4.3	21.7	4.61	8.4	28.4	4.35
Panama	6.5	25.0	4.34	7.3	27.1	3.89	10.5	35.2	3.13
Paraguay	8.9	27.4	3.54	5.4	24.7	4.32	9.4	29.9	3.79
Peru	5.7	24.3	4.66	6.1	27.0	4.29	12.6	36.8	3.56
Uruguay	11.8	30.2	3.37	16.5	34.2	2.69	18.4	37.3	2.57
Venezuela	3.4	22.0	7.00	5.7	25.6	4.61	13.2	33.2	3.32
Barbados	8.5	27.0	4.06	15.3	33.3	2.49	23.2	41.5	2.49
Jamaica	5.8	24.4	5.16	9.2	27.6	2.87	14.9	35.1	3.21
Trinidad	6.1	24.6	4.67	8.7	29.0	3.61	17.4	38.7	2.91
Puerto Rico	6.1	24.6	4.10	13.2	32.7	3.06	20.5	38.2	2.60
United States	12.5	30.8	--	16.6	35.6	--	24.7	40.6	--
Japan	7.7	26.2	--	17.4	39.6	--	32.1	46.6	--

Table I.2: Values of the rate of increase of the population aged 60 and above [R (60+, t)] and the rate of increase of the total population [R (t)] during 1950-2025. Countries in Latin America and the Caribbean, the United States, and Japan

Country	1950-60		1980-90		2015-25	
	R(60+,t)	R(t)	R(60+,t)	R(t)	R(60+,t)	R(t)
Argentina	.041	.018	.023	.015	.019	.008
Bolivia	.019	.021	.026	.021	.034	.016
Brazil	.038	.030	.027	.019	.043	.008
Chile	.031	.022	.025	.016	.035	.009
Colombia	.020	.029	.029	.021	.044	.011
Costa Rica	.021	.036	.044	.028	.044	.013
Cuba	.026	.018	.017	.009	.027	.001
Dominican Republic	.026	.032	.038	.022	.045	.009
Ecuador	.013	.027	.029	.025	.039	.011
El Salvador	.017	.028	.035	.011	.038	.013
Guatemala	.031	.029	.038	.029	.038	.020
Honduras	.032	.032	.036	.031	.044	.016
Mexico	.026	.029	.030	.021	.039	.009
Nicaragua	.025	.031	.032	.025	.047	.016
Panama	.030	.027	.029	.021	.038	.009
Paraguay	.025	.021	.012	.030	.047	.019
Peru	.025	.026	.031	.022	.037	.011
Uruguay	.013	.013	.018	.006	.012	.004
Venezuela	.061	.040	.039	.026	.041	.012
Barbados	.025	.009	.011	.003	.036	.005
Jamaica	.028	.015	.009	.010	.050	.010
Trinidad	.025	.028	.021	.013	.038	.008
Puerto Rico	.030	.006	.026	.010	.019	.006
United States	.023	.016	.016	.010	.025	.008
Japan	.026	.012	.036	.006	.004	-.004

Source: Calculations using the United Nations Database 1999.

c. Relative growth of the older population.

The social and economic dimensions of the aging process also depend on the dynamics of the population *younger* than 60: if this population grows as fast or faster than the population at older ages then some issues, such as support of elders, may be less pressing even though the absolute growth of the older population has economic consequences of its own. What matters is the *relative growth* of the two segments of the population: to the extent that, and for as long as, the population aged 60 and over grows faster than the population below age 60, there will be aging. Upward pressure on the *fraction* of the population aged 60 and over will depend on R(t) and on the rate of increase of the younger population. Note that increases in the fraction of the population aged 60 and over, C(t) will proceed at a faster pace the larger the differences between these rates of increase are, and the longer the regime is maintained. Similarly, these factors can account for the *decrease* in the value of L(t).

Since in all likelihood fertility in the region will continue to fall toward very low values and mortality will also maintain a downward though decelerating course, steadily declining values of the overall rate of growth will be observed. However, due to factors examined below, the values of R(t) will continue to increase. The consequence of these two reinforcing trends will be large increases in C(t) and large decreases in L(t). Table I.2 shows that, with a few exceptions, the rates of increase of the population aged 60 and over during the more recent periods are higher than the rate of increase of the total population. Furthermore, the differences between rates of increase for the population above age 60 and for the total population increase regularly during the period of time examined. Once again, this shows that the seeds of rapid aging in the region have been present for quite a long time. This phenomenon has been noted previously but, to date, has not been adequately studied.

d. Trajectory of the rate of increase of the older population, R(t)

The rate of increase of the older population is a function of three characteristics: a) changes in past birth rates, b) changes in past mortality from age 0 until age 60 and, finally, c) changes in mortality above age 60. This has important implications for the prospective health status of elders in the region. The fact that current and future growth of the older population is due to past mortality declines in the age group 0 to 60, not to the improvement of mortality for older adults (aged 60 and above), is demonstrated.

The characterization of past demographic trends in the region suggested above and the most important factors determining R(t) just outlined lead to two consequences. First, the population who will attain their 60^{th} birthday between 2000 and 2025 belong to birth cohorts inflated by a mild surge of fertility of the years 1950-1965. Thus the rate of increase of the age group 60 and over will increase in part because of these transient spikes in fertility levels. Second, and most importantly, these same cohorts *were the beneficiaries of unusually large improvements in survival, particularly during early childhood.* For example, individuals born in 1960 experienced lower levels of early childhood mortality than those born in 1955. This increases the size of the cohort attaining age 60 in 2025 relative to the size of cohorts that reach age 60 in the year 2020.

The key inference from these findings it is that the growth of current and future older populations is mostly a function of past developments in mortality (and less so in fertility), and depends to a much lesser extent on mortality conditions at older ages. This runs counter to popular beliefs. (Palloni et al., 2001).

e. Implications: health status of older adults is a function of past mortality regimes

A substantial fraction of future increases in R(t) and, therefore, of the aging reflected in changes in C(t), L(t), and A(t), is attributable to mortality changes experienced during the period 1930-1990. The bulk of this change is due to changes in mortality associated with infectious diseases in the first ten years of life. This is a revealing statistic: *it suggests that the relatively compressed schedule of aging in the region can, in part at least, be traced to the medical and public health revolution that triggered the mortality decline nearly half a century ago.*

Why should this feature of the growth of the older population be relevant? In what ways does it represent a legacy of the past with implications for the future health and disability status of older persons? First, massive improvements in survival, particularly those concentrated within a few years after birth, are likely to induce important changes in the mean and variance of the frailty distribution of the older population. It is well-known that this fact alone could account for increases in the prevalence of morbid conditions as well as for slower improvements in mortality at older ages that would otherwise be the case. (Barker DJP, 1998; Eriksson JG, et al, 2000; Shiell AW, et al 2000) Second, an emerging line of research is finding increasingly credible evidence that exposure to and contraction of illnesses or deleterious conditions early in life may have enduring physiological effects that could play out and have strong influence in adult life. The foregoing considerations indicate that cohorts of older people who will reach 60 after the year 2000 are those who experienced the full benefits of deployment of medical technology introduced during the post-World-War II period. Their survival gains are less the outcome of quantum leaps in standards of living and more the result of successful reduction of exposure, better treatment, and speedier recoveries. Might this combination of events enhance the expression of negative effects of early exposure to deleterious conditions and manifest itself in higher prevalence of later life illnesses and disability?

1.2. Health status and the institutional context in Latin America and the Caribbean

These considerations lead to the following conjecture: the health status and functional limitations among elders in Latin America--particularly among the cohorts reaching ages 60 in the period 2000-2020--are likely to have worse distributions of health status than those observed among elders in other places, even when relevant disparities in socioeconomic conditions are controlled for. If this proves to be true--and some evidence below appears to confirm it--then the aging process in the region is characterized not just by an unprecedented speed and massiveness, but also by large potential demand for health services.

In summary, the region is aging “prematurely," the composition by health and disability status may take a turn for the worse and become unfavorable sooner rather than later, and family and kin networks are losing ground before societal mechanisms to effect institutional transfers are securely in place (Palloni, 2000). An important difference between countries of the region

and more developed countries is the relation between the speed and size of the momentum towards aging, on the one hand, and the social and economic contexts of the societies where the process is taking place, on the other. The aging process in developed countries takes place long after they achieve high standards of living, reduce social and economic inequalities, and implement a number of institutional strategies to offset the effects of residual inequalities at least in the area of access to health services. Social and economic development in North America and Northern and Western Europe are already in place when the demands of an aging society (and even the concerns about it) are recognized. No country in the region is blessed with a similar institutional history and context. Quite the contrary: in almost all cases a highly compressed aging process begins to take place in the midst of fragile economies, rising poverty levels, expanding rather than contracting social and economic inequalities, and contracting rather than expanding access to collectively financed services and resources.

In a bleak overview of conditions in the region, Kliksberg (Kliksberg, 2000) presents compelling evidence suggesting that levels of poverty have increased drastically since 1985 as have levels of economic inequality; unemployment rates have increased, particularly among the most youthful and poorest segment of the population; deficits in budgets associated with to public health have ballooned and, finally, the informal sector of the economy has expanded considerably. These aggregate trends translate into strong effects at the individual level. In particular, the bulk of the population experiences a sustained decreased in real income, poorer access to health services and erosion of their capacity to claim public sources for retirement and welfare. But the most vulnerable groups are the older persons and children and it is in these groups where the bulk of deleterious effects will be seen.

The study SABE was designed in part to attempt to test the aforementioned conjecture and thus shed light on the load of health demands that are likely to emerge from a fast growing older population. The study was also motivated by the perceived need to anticipate what lies ahead so that countries can plan well in advance to forestall the most negative consequence of the aging process in the region. The countries finally included in SABE are a combination of those that provide a good representation of the various stages of aging in the region, on the one hand, and of those which at the time could afford the material and human resources required for the survey, on the other. Four of the countries included—Argentina, Barbados, Cuba and Uruguay—are in very advanced stages of the aging process whereas the other three—Chile, Mexico and Brazil—are slightly behind the forerunners but span, in that order, an entire range going from a greater to a lesser speed of aging. It may be argued that these seven countries include none whose demographic transition is still in the initial stages, such as Bolivia, Peru, Guatemala or Honduras. This is indeed the case. With limited resources the choice had to be made between a pure and complete representation of all the observable demographic stages or only of those that span moderate to high speed of aging.

CHAPTER 2: ORGANIZATION OF SABE AND INSTITUTIONAL SUPPORT

2.1. Countries participating in SABE

Although the selection of countries in the study was an issue resolved by a multiplicity of factors, some of them unrelated to the theme under study, it responded at least minimally to strategic concerns related to the nature of the process. In fact, one key consideration that entered strongly into early discussions was the need to represent well all demographic regimes that are producing medium to high speed rates of aging. Thus, Argentina, Cuba, Uruguay and Barbados are countries where the aging process has progressed more and at speeds that are more comparable to the processes experienced by industrialized regions. Mexico and Chile stand in some intermediate ground, poised to endure a more rapid process that began to gather momentum only during the last five to ten years. Finally, Brazil represents a set of countries in the continent where the aging process will occur more suddenly but whose onset is a couple of decades into the future. This reasoning is purely demographic and does not pretend to assign dominance to cultural and social factors nor does it guarantee even minimally that the information retrieved will represent all corners of the social and economic spectrum in the Latin America and the Caribbean. But the inclination was to highlight the portrait of various synthetic stages of the process even if, in reality, each country may end up following a process that resembles only minimally the one that can be reconstructed from various stages undergone by different countries at different time periods.

2.2. Organization of SABE

SABE was a major undertaking and it is only due to the contributions of many people and institutions that it provides information that, it is hoped, will influence in a durable way both research and policy making. What follows is a brief identification of the collaborators and their affiliations. This enumeration scarcely does justice to the amount of work that each person or institution contributed nor can it retrieve the entire universe of people who sometimes in silence, many times unpaid or underpaid made this all possible.

a. Institutional foundation of SABE

The Survey on Health and Well-being of Elders (SABE) was initially funded by the Pan American Health Organization (PAHO/WHO) as a multicenter survey on the health and well-being of older persons in seven urban centers in Latin America and the Caribbean. It was initiated and coordinated at the Regional level by PAHO/WHO[4]. The Center for Demography and Ecology, University of Wisconsin-Madison, supported the realization of SABE providing ideas for the design of the study, the sample plans, questionnaires, field operations as well as data entry, data cleaning and data organization. In addition, at several stages SABE benefited from the inspiration and guidance offered by a body of external consultants that worked in coordination with PAHO/WHO and the Center for Demography and Ecology.

[4] SABE is the second multicenter survey sponsored by the Pan American Health Organization. The first was ENA (Encuesta de Necesidades de los Ancianos) carried out during the decade of the 80s in 12 urban areas of Latin America and the Caribbean.

The survey was conducted in Bridgetown (Barbados); Buenos Aires (Argentina); Sao Paulo (Brazil); Santiago (Chile); Havana (Cuba); Mexico City (Mexico), and Montevideo (Uruguay) during the period October 1999 - December 2000.

b. Personnel and regional coordinating team

The team of researchers that carried out SABE had multiple components. The first was the personnel located at PAHO headquarters in Washington, DC. The second was a few researchers at the Center for Demography and Ecology, University of Wisconsin-Madison who, jointly with PAHO, designed the study and directed its logistics. The third component was constituted by teams of advisors, both in the US and in the countries involved. Finally, the fourth component, arguably the most important one, was the local, country-based teams constituted by a principal investigator and his/her associates. A description of the individuals collaborating in the realization of SABE by component of membership follows.

i. PAHO Headquarters

- Martha Peláez, Regional Advisor on Aging and Health, Family Health and Population Program, Division of Health Promotion and Protection, PAHO.
- Rebecca de los Rios, Regional Advisor on Public Health Research, Program on Research Coordination, Division of Health and Human Development, PAHO.
- Guido Pinto, Technical Advisor, Aging and Health Unit, Family Health and Population Program, Division of Health Promotion and Protection, PAHO was responsible for the data cleaning and data management.
- Iveris Martinez, Casey Wisecarver and Tina Le were research assistants with the Aging and Health Unit, Family Health and Population Program, Division of Health Promotion and Protection, PAHO during different phases of the study and provided technical support to the coordinating team and to the country Principal Investigators.

ii. University of Wisconsin

- Alberto Palloni, Professor of Sociology and Demography, Center for Demography and Ecology, University of Wisconsin-Madison. Dr. Palloni was responsible for providing the conceptual framework and methodological expertise for the design and analysis of the study.

iii. Independent Consultants

- Javier Suarez, Programmer, Berumen and Associates, Mexico D.F. Mr. Suarez was responsible for programming the data entry software program.
- Elizabeth Arias, Demographer and Statistician. Dr. Arias was responsible for the preparation of analysis programs and technical collaboration in the research analysis.

iv. Advisory committee

The following individuals participated in research meetings and were consulted on various aspects of the survey:

- Eduardo Arriaga, International Programs Center, US Bureau of the Census
- Laurence G. Branch, National Center for Health Promotion and Disease Prevention, Duke University, North Carolina.
- Jorge Bravo, CELADE *(Latin American and Caribbean Demographic Center)*, Santiago, Chile
- Jacob Brody, School of Public Health, University of Illinois, Chicago.
- Ana Luisa Dávila, Escuela de Salud Pública, Universidad de Puerto Rico, Recinto de Ciencias Médicas. *(School of Public Health, University of Puerto Rico, Medical Sciences Campus.)*
- Gerda Fillenbaum, Duke University Medical Center, Center for the Study of Aging and Human Development, North Carolina.
- Richard Havlik, Director of Epidemiology, Demography and Biometry, National Institute on Aging, Bethesda, Md.
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c. Funding sources

The Pan American Health Organization provided initial funding via the multicenter survey initiative mechanism. The director of PAHO offered support at various stages, which permitted SABE to be extended at various points until it reached full maturity.

The National Institute on Aging through an Inter-Agency Agreement with the Pan American Health Organization partially supported the cleaning of data, organization and final preparation of the databases.

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In addition to these general sources of funding, SABE was supported by the generous contributions of different international and national institutions in each of the countries. The principal funding partners in each of the countries were: In Argentina, the Inter-American Development Bank (IDB); in Barbados, the Caribbean Development Bank; in Brazil, the Foundation for Research for the State of Sao Paulo (FAPESP); in Chile, the Ministry of Health, and IDB; in Cuba, the Population Center of the National Institute of Statistics and the Ministry of Health; in Mexico, the Ministry of Health and Eli Lilly, Inc. and in Uruguay, the Ministry of Health and IDB. Also, in each of these countries the universities and institutions involved with the project provided many in-kind contributions.

CHAPTER 3: POPULATIONS UNDER STUDY, SAMPLE CHARACTERISTICS, AND DATA COLLECTION

This chapter reviews general features of the data collection protocol that are common to all countries participating in SABE. First, features of the populations selected for study are discussed. This is followed by a general description of the sampling plan and, finally, by an assessment of the field operations as well as the activities associated with data entry, data cleaning and data organization.

3.1. Sampling target populations

An important opportunity offered by SABE was to carry out a strictly comparable cross-national survey of older persons in selected urban areas of the region. Establishing comparability began with the construction of a general sampling design to which each of the countries adhered. The most important features of the sample design are as follows:

a. Target populations.

The universe of study is the population aged 60 and older residing in private households occupied by permanent dwellers in each of the selected cities; in three of these the populations outside the city limits but within its urban periphery were considered an integral part of the city, as is done routinely by the national statistical offices in these countries.

b. Sampling frames.

In most countries participating in SABE there are periodic national employment or other household surveys which, in general, offer updated sampling frames, at least more recent than what the last census could. This was indeed the case everywhere except in Chile, where the sampling frame dated back to the 1992 census. Barbados is an exceptional case for there the sampling frame was a national electoral registry updated periodically.

c. General features of the sampling design.

The samples were all examples of a classical multistage clustered sample with stratification of the units at the highest levels of aggregation. In all countries, except Barbados and Brazil, the sample was chosen in three selection stages. In Barbados and Brazil only two selection stages were applied. The scheme followed in each case was fairly similar: the Primary Sampling Unit (PSU) is a cluster of independent households within predetermined geographic areas. The PSUs are grouped into either geographic or socioeconomic strata. The sample distribution by geographic or socioeconomic strata was determined by allocation proportional to the size of the elderly population. The PSUs may, in turn, be divided into secondary sampling units, SSU, each containing a smaller number of independent households. These SSU's are in turn composed of Tertiary Sampling Units (TSU's) formed by interviewees in the selected households or by single individuals in those countries where only one person was selected out each household. Thus, the household or target individuals constitute the last layer of aggregation in the sample.

The first stage in the sampling process led to sampling a predetermined number of PSUs –each selected with probability proportional to the household distribution within each stratum.

The second stage consisted of the selection of the SSUs (if any had been defined) and, finally, the third stage consisted of the selection of households within each SSU. Both, SSU and TSU's were selected with equal probabilities within each chosen PSU.

In all cases the stages of this design enable the investigators to calculate probabilities of selection for each target individual. This, jointly with *ex-post* knowledge of non-response rates by PSU, and population data on elderly people residing in the selected cities that was retrieved from exogenous sources, provides sufficient information to calculate expansion factors to make inferences from the surveys to the populations of reference.

d. City-specific features of the sampling design.

There are several areas in which there are important differences between cities. The first is stratification of the clusters. In some cities stratification was in terms of geography only whereas in others the strata were defined both by geography and, in addition, by aggregate indicators of socioeconomic conditions. In one country (Barbados) households were simply stratified according to the proportion of individuals older than 60 or 80. The second area of difference is the nature of oversampling. In four cities the samples include oversamples of population 80 and above. In Cuba and Uruguay an individual in a household who was 80 or above was chosen with probability one. In Chile selection of a target among eligible household members was done randomly but if an individual aged 80 or over was present and not chosen by the random process, he/she was also interviewed. In Brazil a specially designed sample of individuals 75 and above was extracted and interviewed. The third area of difference has to do with the last stage of selection or sample unit. In four cities (Buenos Aires- Argentina, Bridgetown-Barbados, Santiago-Chile, Havana-Cuba, and Montevideo Uruguay) only one target individual was selected per household. In two of these cities, Havana-Cuba and Bridgetown Barbados, surviving spouses were also selected for interview[5].

In two cities, Mexico City and Sao Paulo, all eligible individuals found in the household were interviewed, including spouses if present. Finally, as mentioned before, in Santiago only one target individual was randomly selected for interview among eligible and, in addition, a second interview was carried out with individuals aged 80 or above if present and not selected by the random process.

The tables below (Tables I.3A to I.3F) display a classification of cities according to each of the aforementioned dimensions, namely, type of cluster stratification, nature of oversampling (if any), and nature of last stage of sample design.

[5] In Cuba the spouse questionnaire was a reduced version of the targets' . Further, spouses provided no anthropometric measures

TABLES I.3A TO 1.3F
Classification of cities according to dimensions of sampling plan

TABLE I.3A	**BUENOS AIRES**
Target Population	Population 60+ in Buenos Aires and suburbs (Greater Buenos Aires)
Sampling Frame	Household Survey 1998.
Sampling Technique:	Three stage stratified probability sampling
Sampling Units	PSU: Census radius (300 households) SSU: Households TSU: One individual 60+ per household
Stratification	Geographic and Socioeconomic: two main geographic regions (City of Buenos Aires and Grand Buenos Aires); six socioeconomic strata
Sampling Allocation	Proportional allocation among strata
Oversampling	None
Method of selection	PSU: Census radius, chosen with probability proportional to the number of households; SSU: Households selected systematically with equal probability of selection TSU: One individual 60+ per household was selected with equal probability
Selection Older Person	Randomly select one person 60+ per household
Spouse Interview	None

TABLE I.3B	BRIDGETOWN
Target Population:	Population 60+ in Greater Bridgetown
Sampling Frame:	Household voting registry last updated 1997; households with individuals aged 60 and older were selected
Sampling technique:	Two-state stratified sampling
Sampling Units:	PSU: Households with persons 60+ SSU: One individual 60+ per household TSU: None
Stratification:	Demographic: 4 strata (households with a person 80 years old or older or not; households with only 1 person 60 years old or older; households with 2 or more persons 60 years old or older).
Sampling Allocation:	Proportional allocation among strata
Oversampling:	None
Method of selection:	PSU: Households (with individuals 60+) were selected systematically with equal probability from voting registry SSU: One person 60+ selected per household with equal probability TSU: None
Selection Older Person:	Randomly selected one person 60+ per household
Spouse Interview:	Selected, if target selected had a spouse.

TABLE I.3C	SAO PAULO
Target Population:	Population 60+ in urban area of the Municipality of Sao Paulo
Sampling Frame:	Household Survey on Health and Nutrition of Children under 5 years old. Based on 1996 Census master sampling frame
Sampling Technique:	Two-stage stratified sampling
Sampling Units:	PSU: Census sector (about 300 households) SSU: Households TSU: None
Stratification:	Socioeconomic: ranking of PSU according to proportion of heads of households who are illiterate
Sampling Allocation:	Proportional allocation among strata
Oversampling:	Persons aged 75+ were selected with equal probability in an additional sample
Method of selection:	PSU: Households (with individuals 60+) selected with probability proportional to the number of households SSU: households selected systematically with equal probability
Selection Older Person:	All persons 60+ living in a household
Spouse Interview:	If spouse resided in household

TABLE I.3D	SANTIAGO
Target Population:	Population 60+ in Greater Santiago
Sampling Frame:	1992 Master Sampling Frame of the National Institute of Statistics (INE)
Sampling Technique:	Three-stage stratified sampling
Sampling Units:	PSU: Census sector (blocks of about 8 households) SSU: Households TSU: One individual 60+ in each household
Stratification:	Geographical: 284 districts Socioeconomic a posteriori: "comunas" (parishes) were ranked according to their index of human development and poverty level to create three socioeconomic strata
Sampling Allocation:	Proportional allocation among strata
Oversampling:	Persons 80+, selected after the target was drawn randomly.
Method of selection:	PSU selected with probability proportional to the number of households SSU: households selected systematically with equal probability TSU: one individual 60+ per household was selected with equal probability
Selection Older Person:	Randomly select one person 60+ per household
Spouse Interviewed:	Not interviewed

TABLE I.3E	HAVANA
Target Population:	Population 60+ in Havana
Sampling Frame:	Census master sampling frame (1999)
Sampling Technique:	Three-stage stratified sampling
Sampling Units:	PSU: Basic Geostatistical Area (AGEB) (about 180 households) SSU: Sections (about 5 households) TSU: One person 60+ living in each household
Stratification:	Geographic: 15 municipalities
Sampling allocation:	Proportional allocation among strata
Oversampling:	One individual 80+ in household was always selected; if no person 80+ was available, a persons 60+ was selected with equal probability
Method of selection:	PSU: Selected with probability proportional to the number of households SSU: Sections were selected with equal probability TSU: One person 60+ per household was selected with equal probability (persons 80+ were always selected)
Selection Older Person:	Randomly select one person 60+ living in household (persons 80+ were always selected)
Spouse Interview:	If target selected had a spouse, the spouse was interviewed with a reduced questionnaire.

TABLE I. 3F	MEXICO CITY
Target Population:	Persons 60+ in Mexico City Metropolitan Area and an additional sample of women 50+
Sampling Frame:	Household survey sampling frame (1999)
Sampling Technique:	Three-stage stratified sampling
Sampling Units:	PSU: AGEB (about 480 households) SSU: blocks TSU: households
Stratification:	Geographic: Metropolitan Area, Federal District and State of Mexico
Sampling allocation:	Proportional allocation among strata
Oversampling:	No
Method of selection:	PSU: AGEB selected with probability proportional to number of households SSU: blocks TSU: households were selected with equal probabilities
Selection Older Person:	All persons 60+ residing in household were selected in addition women 50+ were selected.
Spouse Interview:	Since all persons 60+ residing in a household were interviewed; it is possible to have couples included in the sample.

TABLE I.3G	MONTEVIDEO
Target Population:	Population 60+ in Montevideo
Sampling Frame:	Population census of 1997
Sampling Technique:	Three-stage stratified sampling
Sampling Units:	PSU: Segment SSU: Household TSU: Target person
Stratification:	Socioeconomic: three strata formed by segments according to education and access to potable water
Sampling allocation:	Proportional allocation among strata
Oversampling:	One person 80+ in household was always selected; otherwise a person 60+ was selected with equal probability
Method of selection:	PSU: Selected with probability proportional to the number of households within strata SSU: Households were selected systematically with equal probability TSU: One individual 60+ was selected with equal probability (persons 80+ were always selected)
Selection Older Person:	Randomly select one person 60+ living in a household (persons 80+ were always selected)
Spouse Interview:	No spouse interviewed

e. Targets and spouses

The original plans for SABE entailed two types of interview: a long interview administered to the target individual and a shorter one administered to the surviving spouse if available. From an analytic point of view, the information about the pair target-spouse can be exploited with important advantages. However, it poses a number of logistic complications, not the least of which is that the protocol increases the effective length of interview time per household. Thus, some countries were able to fund the search/screen of households with eligible target individuals but were unwilling to prolong the field work beyond the basic interviews and found it necessary to omit the spouse-interview altogether. In still other countries, the decision

was made to make spouses and all other eligible members of a selected household in effect part of the sample itself.

As a result, one can distinguish three groups of cities. In the first (Buenos Aires-Argentina, Havana-Cuba, and Montevideo-Uruguay) only one person per household was selected. In the second group (Bridgetown Barbados and Havana Cuba) targets and surviving spouse (if available) were interviewed. The data for Bridgetown distinguish target and spouse through the use of a properly defined indicator variable. The data for Havana come in two subsets, one for spouses and one for targets which can be linked via an interview number identifier and a code for targets and spouses. In the third group (Sao Paulo-Brazil and Mexico City-Mexico) all eligible members of a household were interviewed, irrespective of their marital status or kin relationships. In these two cities all members of the same households are identified through a specially defined variable. Although in both cases couples can be reconstructed from the raw data, only the standardized file for San Paulo includes an indicator that identifies spouses residing in the same household. The recreation of couples in the data from Mexico was not carried to adhere to confidentiality restrictions. In the remaining countries only one person per household is represented in the data [6]. Table I.4 displays a summary of basic information.

TABLE I.4: CITIES BY IDENTIFICATION OF TARGET AND SPOUSES

City	Target-Spouse Modality	Identification of Target and Others belonging to same household	Dependencies
GRUPO 1			
Buenos Aires	1 target interview	Not needed	None
Montevideo	1 target interview	Not needed	None
Bridgetown	1 target interview	Flag variable for target and ID spouse	Target-spouse
Bridgetown	Spouse	Flag variable for target and ID spouse	Target-spouse
Havana	1 target interview	Flag variable for target and ID spouse	Target-spouse
Havana	Spouse	Flag variable for target and ID spouse	Target-spouse
GRUPO 2			
Sao Paulo	all eligible members	Flag multiple members	Multiple
	{Couples recreated from raw data and explicitly identified}		
Mexico City	all eligible members	Flag multiple members	Multiple
	*{Couples can be recreated from data but were not explicitly identif*ied		
GRUPO 3			
Santiago	1 or 2 target interviewed member	Not needed	Multiple

[6] Recall that the sample from Santiago-Chile includes more than one individual per household as a result of efforts to oversample individuals aged 80 and above (see above).

f. Proxy interviews.

All cities participating in SABE adhered to a protocol whereby the target person was interviewed if and only if he/she demonstrated to be cognitively able. In cases where the person could not respond directly a specially designed short cognition instrument, a proxy was selected and Pfeiffer instrument was applied. The proxy could be (in order of priority) the spouse, an adult child, another relative, or a caretaker. Criteria for determining the need for a proxy are discussed in Chapter 4. When a proxy was not found, the supervisor evaluated the feasibility of continuing the interview with the originally selected respondent.

g. Completed interviews, proxy interviews and sample losses.

Table I.5 includes a breakdown of completed interviews that required proxies. Table I.6 displays figures assessing sample losses by source and by city.

TABLE I.5 PERCENTAGE OF INTERVIEWS COMPLETED BY A PROXY RESPONDENT

City	% Proxies
Buenos Aires	3.7
Bridgetown	3.9
Sao Paulo	13.1
Santiago	7.9
Havana	9.2
Mexico City	8.2
Montevideo	1.4

TABLE I.5: TARGET SAMPLE LOSSES BY TYPE OF LOSS

City	Hh selected	Hh contacted	Hh refusals	Hh with eligible target individuals	Selected Targets	Refusals by target individuals	Other losses	Interviewed targets	Response rate (%)	N
Buenos Aires	4192	1800	Na	1736	1662	383	240	1039	62.5	1039
Bridgetown	2994	2951	na	1878	1878	313	57	1508	80.3	1508 *
Sao Paulo	6480	na	na	na	1852	246	39	1567**	84.6	2143**
Santiago	na	5450	192	1755	na	49	143	1306	84.0	1306
Havana	5000	4816	40	1998	1998	51	92	1905	95.3	1905
Mexico City	6000	1711	na	1534	1489	nd	nd	1247	85.0	1311
Montevideo	4610	4450	na	2210	na	98	668	1444	65.3	1444

Hh = Households
na = information not available
* In Bridgetown , 345 partners were interviews additionally
**Sao Paulo added a convenience sample of 576 people older than 75

g. Physical measurements

An important part of the interview process was the implementation of physical measurements such as height, weight, grip strength, and the like (see Chapter 4 for more details). The protocol followed in SABE required independent consent from the respondent as well as a positive evaluation of the interviewer regarding the feasibility of such measures. Thus, at this stage of the interview process further sample losses could be experienced and these are in addition to the ones that precluded an interview. Table I.7 displays figures regarding the sample losses associated with physical measurements in each of the seven participating cities.

TABLE I.7 RATE OF COMPLETION OF ANTHROPOMETRY
(Percentage who did not complete entire protocol)

City	Height	Weight	Waist	Hip	Wrist	Mobility
Buenos Aires	NA	NA	NA	NA	NA	NA
Barbados	3.1	3.9	1.7	3.1	0.4	18.0
Brazil	11.6	11.6	11.6	11.6	11.6	25.0
Chile	5.7	5.6	5.7	5.6	5.1	22.0
Cuba	11.8	11.9	11.4	11.4	9.2	19.1
Mexico	16.3	16.4	16.4	16.5	14.6	28.0
Uruguay	6.7	0.4	9.2	9.6	7.0	35.0

NA: City did not implement protocols

2.2. Sampling errors and design effects

Estimates of sampling errors and design effects were calculated using conventional expressions. These require knowledge of sampling weights, stratification and the nature of the PSUs and their clustering. To simplify the task of ensuring that as much information as possible is conveyed, a limited but strategic set of characteristics and estimated associated standard errors and design effects was chosen for the total samples as well as by age group (all ages 60 and above and those over 75) and sex (all, males and females). The results are presented in Tables I.8a-1 to I.8b-7. Both sampling errors and design effects were estimated for selected variables.

The calculation of sampling errors and design effects follows conventional expressions but peculiarities in the sampling design led to some modifications. First, in cities where simple random sampling of PSU was paired with stratification but no clustering of PSUs (Santiago Chile and Bridgetown Barbados) only the stratification of the sample and sample weights, if any, was taken into account. Second, in the case of Mexico City there were several strata represented by only one PSU and therefore the within strata variance for those strata could not be calculated. The decision was made to group the corresponding PSUs in a single, fictitious, stratum and

estimated both variances and design effects. This provided an upper limit for both the design effects and the sampling errors[7].

2.3. Data collection operations: field work, data entry, data cleaning and file organization

Although each country team performed all activities necessary for data collection in ways that were optimally suited to local conditions, there were some general principles to which all adhered. First, the teams of principal investigators received common training on two different occasions, one regarding the content and process of interviewing itself and the other regarding the nature of the sample, sample administration and conduction of field work. Second, in all cases the teams of principal investigators with the support of appropriate personnel were in charge of training supervisors and then interviewers. This two-stage process guaranteed maximal uniformity across countries while simultaneously allowing flexibility to adapt to local conditions and budgetary restrictions. Third, all the field work took place during approximately the same period of time *starting in October 1999 and finishing by December 2000* and was conducted using similar rules to minimize sample losses and to be able to follow up difficult-to-get cases, particularly in cities where the response rates were expected to be lower than average. Fourth, the data were entered using a unique program followed by all cities, introducing modifications only when they were absolutely necessary to respect national peculiarities.

Fifth, once the raw databases were entered and organized using the master program, they were cleaned and standardized using a multistage process applied to all countries at PAHO headquarters. This process sought consistency, adjusted for errors and omissions, created and labeled variables, generated comparable coding schemes and, finally, produced code books (dictionaries).

The data cleaning process consisted of two stages. In the first of these, evident coding errors that infringed simple consistency checks were corrected by directly reviewing and reentering the original questionnaires. This, a painstaking process with prohibitively high costs, was employed only initially, and only for very obvious errors.

In the second stage several programs were written. Stata[8] code and language was used throughout to generate a series of three large programs that are available upon request and that will be placed in a public web site for inspection. These programs (a) identified consistency problems, (b) implemented adjustments when inconsistencies were found and where a procedure for inferring "correct" values was admissible and, (c) created new variables. At no point in this second stage was imputation used at all. And none was necessary. In fact, in the most difficult of the questionnaire sections (Section G, the household roster and associated items) the worst that took place in the effort to introduce consistency was some loss of precision on a single item or set of items, never a loss of original information. Thus, for example, because of the restricted relationship codes used, it was not always possible to identify with precision the relationship code of a given person in the household roster if a miscode occurred. But, using ancillary

[7] Experimentation with alternative solutions demonstrated that estimates are virtually insensitive to the presence of these isolated strata with single PSUs

[8] An integrated statistical package

information it was always possible to generate relationship codes that were more general (such as other family instead of brother in law).

The data sets available to the public are thus the end result of a cleaning process devoid of imputation and including a few created variables to facilitate some analytic tasks.

After the data cleaning process was completed, sampling errors and design effects were estimated. These are contained in special documents that will be attached to the standardized and raw data files. The final product is a set of standardized data sets that are strictly comparable and with minimal national or local idiosyncrasies.

Table I.8a-1. Sampling errors and design effects for selected variables (females), Buenos Aires (Argentina)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.215	0.017	0.181	0.249	1.189
65-74	0.499	0.021	0.458	0.541	1.160
75 and over	0.285	0.018	0.249	0.322	1.094
Education					
No schooling	0.041	0.008	0.026	0.057	1.066
Primary	0.697	0.020	0.658	0.735	1.202
Secondary and more	0.262	0.019	0.225	0.299	1.226
Marital Status					
Single	0.062	0.011	0.041	0.084	1.356
In union	0.433	0.022	0.390	0.475	1.242
Divorced, separated, widowed	0.504	0.021	0.463	0.545	1.166
Labor force					
Active	0.158	0.015	0.129	0.188	1.120
Self-reported health conditions					
Very good	0.155	0.016	0.125	0.186	1.221
Good	0.437	0.021	0.396	0.478	1.163
Fair	0.315	0.019	0.277	0.353	1.135
Poor	0.061	0.010	0.041	0.081	1.186
Mental health					
Depression	0.152	0.015	0.123	0.181	1.043
Cognitive impairment	0.075	0.010	0.055	0.096	1.030
Reported chronic conditions					
Underweight					
Obese					
Arthritis	0.627	0.020	0.587	0.667	1.162
Hypertension	0.510	0.021	0.469	0.551	1.161
Diabetes	0.114	0.013	0.088	0.139	1.088
Cancer	0.060	0.010	0.040	0.080	1.220
Lung diseases	0.065	0.009	0.045	0.082	0.958
Heart diseases	0.191	0.016	0.160	0.223	1.091
Disability					
ADLs (1 or more)	0.202	0.016	0.170	0.234	1.070
IADLS (1 or more)	0.222	0.017	0.189	0.255	1.091
Household arrangement					
Alone	0.231	0.015	0.201	0.261	0.883
Couple	0.431	0.022	0.390	0.474	1.243
Others	0.337	0.019	0.300	0.375	1.077

Table I.8b-1 Sampling errors and design effects for selected variables (males), Buenos Aires (Argentina)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.228	0.021	0.186	0.270	0.992
65-74	0.512	0.027	0.458	0.566	1.154
75 and over	0.260	0.025	0.211	0.308	1.214
Education					
No schooling	0.019	0.007	0.004	0.033	1.132
Primary	0.611	0.027	0.557	0.664	1.176
Secondary or more	0.371	0.027	0.318	0.423	1.181
Marital Status					
Single	0.040	0.009	0.022	0.058	0.833
In union	0.744	0.021	0.702	0.786	0.916
Divorced, separated, widowed	0.213	0.020	0.174	0.251	0.878
Labor force					
Active	0.374	0.026	0.322	0.426	1.137
Self-reported health conditions					
Very good	0.252	0.024	0.205	0.300	1.182
Good	0.444	0.027	0.390	0.497	1.148
Fair	0.239	0.024	0.192	0.285	1.177
Poor	0.038	0.010	0.017	0.058	1.160
Mental health					
Depression	0.112	0.018	0.077	0.146	1.086
Cognitive impairment	0.060	0.014	0.033	0.087	1.262
Reported chronic conditions					
Underweight					
Obese					
Arthritis	0.365	0.027	0.312	0.417	1.168
Hypertension	0.475	0.028	0.420	0.529	1.160
Diabetes	0.140	0.019	0.102	0.177	1.156
Cancer	0.041	0.011	0.019	0.063	1.236
Lung diseases	0.103	0.017	0.070	0.135	1.142
Heart diseases	0.210	0.023	0.165	0.254	1.186
Disability					
ADLs (1 or more)	0.128	0.018	0.092	0.164	1.145
IADLS (1 or more)	0.096	0.016	0.065	0.127	1.080
Household arrangement					
Alone	0.139	0.016	0.108	0.170	0.790
Couple	0.740	0.022	0.698	0.782	0.919
Others	0.121	0.016	0.090	0.152	0.911

Table I.8a-2 Sampling errors and design effects for selected variables (females), Bridgetown (Barbados)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.198	0.013	0.172	0.224	1.028
65-74	0.393	0.016	0.361	0.425	1.004
75 and over	0.409	0.016	0.377	0.441	1.011
Education					
No schooling	0.008	0.003	0.002	0.013	1.019
Primary	0.774	0.014	0.747	0.801	1.008
Secondary or more	0.216	0.014	0.189	0.243	1.008
Marital Status					
Single	0.258	0.015	0.230	0.287	1.021
In union	0.231	0.014	0.204	0.259	1.001
Divorced, separated, widowed	0.498	0.017	0.465	0.530	1.010
Labor force					
Active	0.118	0.011	0.097	0.139	1.017
Self-reported health conditions					
Very good	0.121	0.011	0.100	0.143	1.006
Good	0.335	0.016	0.304	0.366	1.014
Fair	0.485	0.017	0.452	0.517	1.010
Poor	0.055	0.008	0.040	0.070	1.005
Mental health					
Depression	0.044	0.007	0.031	0.058	1.006
Cognitive impairment	0.075	0.009	0.058	0.092	1.040
Reported chronic conditions					
Underweight	0.041	0.007	0.028	0.053	1.017
Obese	0.295	0.015	0.266	0.325	1.009
Arthritis	0.577	0.016	0.545	0.609	1.010
Hypertension	0.535	0.017	0.503	0.568	1.011
Diabetes	0.235	0.014	0.208	0.263	1.008
Cancer	0.035	0.006	0.023	0.047	1.018
Lung diseases	0.046	0.007	0.033	0.060	1.002
Heart diseases	0.114	0.011	0.094	0.135	1.001
Disability					
ADLs (1 or more)	0.166	0.012	0.142	0.190	1.021
IADLS (1 or more)	0.243	0.014	0.215	0.271	1.014
Household arrangement					
Alone	0.238	0.014	0.210	0.266	1.006
Couple	0.252	0.014	0.224	0.281	1.007
Others	0.510	0.017	0.477	0.542	1.010

Table I.8b-2 Sampling errors and design effects for selected variables (males), Bridgetown (Barbados)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.206	0.018	0.170	0.242	1.201
65-74	0.445	0.021	0.404	0.485	1.011
75 and more	0.349	0.020	0.311	0.388	1.002
Education					
No schooling	0.008	0.004	0.001	0.015	0.953
Primary	0.753	0.018	0.718	0.789	1.033
Secondary or more	0.230	0.018	0.195	0.265	1.038
Marital Status					
Single	0.127	0.014	0.100	0.155	1.027
In union	0.522	0.021	0.481	0.563	1.025
Divorced, separated, widowed	0.341	0.020	0.302	0.380	1.024
Labor force					
Active	0.213	0.018	0.178	0.248	1.092
Self-reported health conditions					
Very good	0.204	0.017	0.170	0.237	1.033
Good	0.375	0.020	0.335	0.415	1.028
Fair	0.371	0.020	0.331	0.410	1.021
Poor	0.050	0.009	0.033	0.068	0.992
Mental health					
Depression	0.055	0.010	0.035	0.074	1.033
Cognitive impairment	0.055	0.010	0.037	0.074	1.021
Reported chronic conditions					
Underweight	0.048	0.009	0.030	0.065	1.014
Obese	0.112	0.013	0.086	0.138	1.028
Arthritis	0.316	0.019	0.278	0.354	1.012
Hypertension	0.378	0.020	0.338	0.418	1.021
Diabetes	0.187	0.017	0.155	0.220	1.048
Cancer	0.022	0.006	0.010	0.033	0.993
Lung diseases	0.037	0.008	0.021	0.052	1.038
Heart diseases	0.116	0.013	0.090	0.142	1.001
Disability					
ADLs (1 or more)	0.109	0.013	0.084	0.135	1.012
IADLS (1 or more)	0.150	0.015	0.120	0.179	1.009
Household arrangement					
Alone	0.268	0.019	0.231	0.304	1.019
Couple	0.507	0.021	0.466	0.548	1.025
Others	0.225	0.018	0.191	0.260	1.042

Table I.8a-3 Sampling errors and design effects for selected variables (females), Sao Paolo (Brazil)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.308	0.018	0.272	0.344	1.907
65-74	0.450	0.020	0.410	0.490	1.989
75 and over	0.242	0.025	0.192	0.292	4.282
Education					
No schooling	0.231	0.021	0.189	0.274	3.246
Primary	0.654	0.021	0.612	0.696	2.439
Secondary or more	0.109	0.020	0.069	0.148	5.156
Marital Status					
Single	0.052	0.008	0.036	0.069	1.785
In union	0.413	0.016	0.381	0.445	1.305
Divorced, separated, widowed	0.533	0.017	0.499	0.568	1.490
Labor force					
Active	0.158	0.011	0.137	0.180	1.099
Self-reported health conditions					
Very good	0.106	0.010	0.086	0.127	1.384
Good	0.336	0.019	0.298	0.375	2.059
Fair	0.465	0.019	0.428	0.503	1.792
Poor	0.089	0.008	0.072	0.106	1.115
Mental health					
Depression	0.233	0.013	0.207	0.258	0.974
Cognitive impairment	0.131	0.010	0.111	0.150	1.047
Reported chronic conditions					
Underweight	0.017	0.004	0.009	0.026	1.461
Obese	0.246	0.015	0.217	0.275	1.462
Arthritis	0.404	0.013	0.377	0.430	0.901
Hypertension	0.566	0.017	0.532	0.560	1.464
Diabetes	0.187	0.012	0.163	0.212	1.248
Cancer	0.035	0.005	0.024	0.045	1.106
Lung diseases	0.107	0.010	0.087	0.127	1.306
Heart diseases	0.189	0.013	0.164	0.214	1.319
Disability					
ADLs (1 or more)	0.223	0.014	0.194	0.252	1.515
IADLS (1 or more)	0.323	0.018	0.287	0.359	1.839
Household arrangement					
Alone	0.170	0.012	0.145	0.195	1.382
Couple	0.404	0.015	0.374	0.435	1.206
Others	0.426	0.015	0.396	0.456	1.160

Table I.8b-3 Sampling errors and design effects for selected variables (males), Sao Paolo (Brazil)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.344	0.027	0.290	0.398	2.837
65-74	0.464	0.030	0.404	0.525	3.207
75 and over	0.192	0.029	0.133	0.251	4.894
Education					
No schooling	0.180	0.019	0.142	0.219	2.201
Primary	0.634	0.028	0.578	0.691	2.998
Secondary or more	0.182	0.030	0.121	0.242	5.366
Marital Status					
Single	0.044	0.008	0.028	0.060	1.338
In union	0.791	0.018	0.756	0.826	1.645
Divorced, separated, widowed	0.165	0.016	0.132	0.198	1.717
Labor force					
Active	0.400	0.025	0.351	0.450	2.231
Self-reported health conditions					
Very good	0.107	0.016	0.076	0.139	2.281
Good	0.377	0.019	0.339	0.415	1.339
Fair	0.444	0.019	0.406	0.482	1.292
Poor	0.072	0.010	0.052	0.091	1.289
Mental health)					
Depression	0.134	0.012	0.109	0.159	1.041
Cognitive impairment	0.125	0.014	0.097	0.153	1.589
Reported chronic conditions					
Underweight	0.021	0.005	0.011	0.030	0.901
Obese	0.091	0.010	0.071	0.111	1.069
Arthritis	0.208	0.015	0.177	0.239	1.266
Hypertension	0.495	0.021	0.452	0.537	1.559
Diabetes	0.170	0.017	0.135	0.205	1.853
Cancer	0.031	0.006	0.018	0.044	1.208
Lung diseases	0.144	0.013	0.118	0.169	1.153
Heart diseases	0.205	0.015	0.175	0.235	1.211
Disability					
ADLs (1 or more)	0.148	0.018	0.113	0.184	2.144
IADLS (1 or more)	0.183	0.016	0.152	0.215	1.431
Household arrangement					
Alone	0.075	0.010	0.055	0.095	1.255
Couple	0.782	0.017	0.748	0.817	1.528
Others	0.142	0.014	0.113	0.172	1.568

Table I.8a-4 Sampling errors and design effects for selected variables (females), Santiago (Chile)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.273	0.021	0.232	0.313	1.837
65-74	0.424	0.022	0.381	0.467	1.651
75 and over	0.303	0.019	0.266	0.341	1.471
Education					
No schooling	0.115	0.013	0.091	0.139	1.318
Primary	0.212	0.018	0.177	0.247	1.606
Secondary or more	0.459	0.022	0.416	0.502	1.656
Marital Status					
Single	0.087	0.011	0.064	0.109	1.413
In union	0.419	0.023	0.374	0.463	1.795
Divorced, separated, widowed	0.482	0.022	0.440	0.525	1.617
Labor force					
Active	0.138	0.015	0.109	0.167	1.560
Self-reported health conditions					
Very good	0.036	0.008	0.021	0.052	1.459
Good	0.303	0.021	0.263	0.344	1.714
Fair	0.437	0.022	0.394	0.480	1.651
Poor	0.223	0.018	0.189	0.257	1.515
Mental health					
Depression	0.295	0.020	0.256	0.334	1.628
Cognitive impairment	0.131	0.014	0.103	0.158	1.447
Reported chronic conditions					
Underweight	0.013	0.005	0.004	0.021	1.221
Obese	0.320	0.021	0.280	0.360	1.656
Arthritis	0.401	0.022	0.359	0.444	1.642
Hypertension	0.556	0.022	0.513	0.599	1.655
Diabetes	0.141	0.016	0.110	0.172	1.753
Cancer	0.057	0.010	0.037	0.077	1.640
Lung diseases	0.108	0.013	0.082	0.134	1.526
Heart diseases	0.353	0.021	0.311	0.394	1.690
Disability					
ADLs (1 or more)	0.251	0.018	0.216	0.286	1.474
IADLS (1 or more)	0.286	0.019	0.249	0.323	1.524
Household arrangement					
Alone	0.106	0.011	0.084	0.128	1.144
Couple	0.413	0.023	0.368	0.457	1.811
Others	0.481	0.022	0.438	0.524	1.619

Table I.8b-4 Sampling errors and design effects for selected variables (males), Santiago (Chile)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.329	0.031	0.268	0.390	1.964
65-74	0.434	0.032	0.372	0.496	1.793
75 and over	0.237	0.031	0.177	0.297	2.291
Education					
No schooling	0.074	0.015	0.046	0.103	1.389
Primary	0.174	0.023	0.129	0.220	1.673
Secondary or more	0.505	0.033	0.441	0.570	1.900
Marital Status					
Single	0.039	0.012	0.016	0.063	1.676
In union	0.772	0.024	0.725	0.819	1.454
Divorced, separated, widowed	0.175	0.020	0.134	0.215	1.283
Labor force					
Active	0.414	0.032	0.351	0.476	1.853
Self-reported health conditions					
Very good	0.096	0.018	0.060	0.132	1.711
Good	0.346	0.033	0.282	0.410	2.115
Fair	0.392	0.031	0.330	0.453	1.827
Poor	0.166	0.022	0.123	0.209	1.541
Mental health					
Depression	0.189	0.023	0.143	0.235	1.552
Cognitive impairment	0.093	0.018	0.058	0.128	1.702
Reported chronic conditions					
Underweight	0.007	0.004	-0.001	0.015	0.988
Obese	0.251	0.028	0.196	0.306	1.875
Arthritis	0.132	0.023	0.087	0.177	1.982
Hypertension	0.450	0.032	0.387	0.514	1.857
Diabetes	0.120	0.021	0.079	0.162	1.834
Cancer	0.018	0.006	0.006	0.029	0.817
Lung diseases	0.136	0.020	0.096	0.176	1.552
Heart diseases	0.278	0.027	0.224	0.332	1.664
Disability					
ADLs (1 or more)	0.173	0.023	0.126	0.219	1.737
IADLS (1 or more)	0.152	0.022	0.109	0.194	1.615
Household arrangement					
Alone	0.063	0.011	0.040	0.085	0.998
Couple	0.766	0.024	0.719	0.813	1.419
Others	0.171	0.021	0.129	0.213	1.432

Table I.8a-5 Sampling errors and design effects for selected variables (females), Havana (Cuba)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.262	0.014	0.236	0.289	1.133
65-74	0.398	0.015	0.368	0.428	1.168
75 and more	0.340	0.014	0.313	0.367	0.997
Education					
No schooling	0.051	0.006	0.039	0.063	0.973
Primary	0.560	0.017	0.526	0.595	1.479
Secondary or more	0.384	0.018	0.349	0.419	1.602
Marital Status					
Single	0.032	0.005	0.023	0.041	0.872
In union	0.230	0.013	0.205	0.255	1.092
Divorced, separated, widowed	0.737	0.013	0.711	0.762	1.041
Labor force					
Active	0.079	0.008	0.063	0.095	1.109
Self-reported health conditions					
Very good	0.044	0.007	0.030	0.057	1.359
Good	0.240	0.013	0.214	0.266	1.161
Fair	0.477	0.013	0.451	0.504	0.872
Poor	0.138	0.010	0.117	0.158	1.081
Mental health					
Depression	0.236	0.013	0.209	0.262	1.208
Cognitive impairment	0.127	0.011	0.105	0.149	1.316
Reported chronic conditions					
Underweight	0.070	0.008	0.053	0.086	1.277
Obese	0.175	0.118	0.152	0.199	1.152
Arthritis	0.669	0.014	0.642	0.697	1.036
Hypertension	0.498	0.015	0.468	0.528	1.100
Diabetes	0.200	0.013	0.175	0.225	1.226
Cancer	0.036	0.006	0.025	0.047	1.075
Lung diseases	0.128	0.011	0.106	0.149	1.262
Heart diseases	0.274	0.014	0.247	0.302	1.154
Disability					
ADLs (1 or more)	0.224	0.012	0.201	0.248	0.995
IADLS (1 or more)	0.246	0.014	0.219	0.273	1.193
Household arrangement					
Alone	0.119	0.010	0.098	0.139	1.186
Couple	0.223	0.013	0.198	0.249	1.131
Others	0.658	0.015	0.630	0.687	1.115

Table I.8b-5 Sampling errors and design effects for selected variables (males), Havana (Cuba)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.304	0.019	0.266	0.342	1.257
65-74	0.431	0.020	0.392	0.471	1.147
75 and over	0.265	0.017	0.231	0.299	1.080
Education					
No schooling	0.040	0.008	0.024	0.056	1.227
Primary	0.434	0.019	0.395	0.472	1.080
Secondary or more	0.526	0.020	0.488	0.565	1.072
Marital Status					
Single	0.029	0.007	0.016	0.042	1.059
In union	0.644	0.021	0.603	0.685	1.348
Divorced, separated, widowed	0.325	0.020	0.285	0.365	1.326
Labor force					
Active	0.350	0.020	0.310	0.389	1.255
Self-reported health conditions					
Very good	0.059	0.011	0.038	0.081	1.506
Good	0.370	0.020	0.330	0.409	1.209
Fair	0.429	0.021	0.387	0.471	1.307
Poor	0.093	0.012	0.069	0.116	1.218
Mental health					
Depression	0.121	0.014	0.093	0.149	1.309
Cognitive impairment	0.065	0.009	0.047	0.083	0.989
Reported chronic conditions					
Underweight	0.099	0.011	0.076	0.121	1.038
Obese	0.056	0.009	0.038	0.074	1.159
Arthritis	0.396	0.020	0.356	0.436	1.219
Hypertension	0.358	0.018	0.322	0.394	1.007
Diabetes	0.073	0.010	0.053	0.092	1.027
Cancer	0.030	0.006	0.019	0.042	0.865
Lung diseases	0.131	0.013	0.104	0.157	1.132
Heart diseases	0.193	0.016	0.162	0.224	1.101
Disability					
ADLs (1 or more)	0.141	0.013	0.115	0.168	1.038
IADLS (1 or more)	0.144	0.015	0.115	0.173	1.262
Household arrangement					
Alone	0.091	0.010	0.072	0.111	0.850
Couple	0.624	0.020	0.583	0.666	1.319
Others	0.284	0.020	0.245	0.324	1.403

Table I.8a-6 Sampling errors and design effects for selected variables (females), Ciudad de Mexico (Mexico)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.295	0.018	0.260	0.330	1.158
65-74	0.436	0.017	0.401	0.470	0.895
75 and over	0.270	0.016	0.238	0.302	0.988
Education					
No schooling	0.213	0.020	0.174	0.252	1.703
Primary	0.578	0.021	0.537	0.619	1.313
Secondary or more	0.193	0.023	0.147	0.238	2.494
Marital Status					
Single	0.057	0.009	0.040	0.075	1.106
In union	0.387	0.017	0.353	0.422	0.959
Divorced, separated, widowed	0.552	0.018	0.515	0.588	1.019
Labor force					
Active	0.154	0.014	0.127	0.181	1.045
Self-reported health conditions					
Very good	0.054	0.009	0.036	0.072	1.243
Good	0.225	0.017	0.190	0.259	1.286
Fair	0.502	0.021	0.461	0.543	1.262
Poor	0.216	0.016	0.186	0.247	1.049
Mental health					
Depression	0.213	0.015	0.183	0.243	0.988
Cognitive impairment	0.220	0.017	0.186	0.253	1.219
Reported chronic conditions					
Underweight	0.007	0.003	0.001	0.013	0.988
Obese	0.304	0.020	0.264	0.343	1.385
Arthritis	0.311	0.019	0.273	0.350	1.303
Hypertension	0.488	0.019	0.450	0.527	1.109
Diabetes	0.209	0.016	0.177	0.241	1.170
Cancer	0.025	0.006	0.013	0.037	1.091
Lung diseases	0.111	0.013	0.085	0.138	1.344
Heart diseases	0.101	0.011	0.080	0.122	0.915
Disability					
ADLs (1 or more)	0.214	0.016	0.182	0.246	1.150
IADLS (1 or more)	0.286	0.017	0.252	0.320	1.068
Household arrangement					
Alone	0.117	0.013	0.092	0.142	1.140
Couple	0.379	0.018	0.344	0.414	0.995
Others	0.505	0.020	0.465	0.544	1.165

Table I.8b-6 Sampling errors and design effects for selected variables (males), Ciudad de Mexico (Mexico)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.361	0.023	0.316	0.406	1.141
65-74	0.436	0.022	0.391	0.480	1.025
75 and over	0.203	0.017	0.170	0.237	0.895
Education					
No schooling	0.151	0.019	0.113	0.189	1.446
Primary	0.585	0.027	0.533	0.638	1.474
Secondary or more	0.250	0.028	0.196	0.305	2.042
Marital Status					
Single	0.019	0.006	0.006	0.031	1.068
In union	0.768	0.019	0.731	0.805	1.010
Divorced, separated, widowed	0.212	0.018	0.176	0.247	0.979
Labor force					
Active	0.467	0.023	0.421	0.512	1.062
Self-reported health conditions					
Very good	0.091	0.015	0.060	0.121	1.473
Good	0.246	0.019	0.208	0.284	1.016
Fair	0.497	0.024	0.450	0.543	1.127
Poor	0.162	0.016	0.130	0.194	0.984
Mental health					
Depression	0.148	0.015	0.118	0.179	0.905
Cognitive impairment	0.139	0.018	0.102	0.175	1.420
Reported chronic conditions					
Underweight	0.005	0.004	-0.002	0.013	1.370
Obese	0.163	0.183	0.127	0.199	1.242
Arthritis	0.159	0.017	0.126	0.192	1.050
Hypertension	0.348	0.023	0.302	0.394	1.190
Diabetes	0.224	0.020	0.184	0.263	1.185
Cancer	0.010	0.005	0.001	0.019	1.055
Lung diseases	0.081	0.012	0.058	0.104	0.921
Heart diseases	0.098	0.014	0.070	0.127	1.164
Disability					
ADLs (1 or more)	0.161	0.018	0.126	0.197	1.197
IADLS (1 or more)	0.144	0.016	0.112	0.177	1.086
Household arrangement					
Alone	0.073	0.011	0.051	0.096	0.953
Couple	0.750	0.020	0.710	0.790	1.093
Others	0.177	0.018	0.141	0.213	1.146

Table I.8a-7 Sampling errors and design effects for selected variables (females), Montevideo (Uruguay)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.219	0.017	0.186	0.252	1.507
65-74	0.471	0.018	0.435	0.507	1.214
75 and over	0.310	0.017	0.278	0.343	1.165
Education					
No schooling	0.050	0.008	0.036	0.065	1.065
Primary	0.672	0.020	0.633	0.711	1.645
Secondary or more	0.274	0.020	0.234	0.313	1.850
Marital Status					
Single	0.036	0.007	0.023	0.049	1.200
In union	0.352	0.020	0.312	0.393	1.670
Divorced, separated, widowed	0.610	0.021	0.568	0.652	1.725
Labor force					
Active	0.115	0.012	0.092	0.139	1.260
Self-reported health conditions					
Very good	0.160	0.014	0.133	0.188	1.339
Good	0.406	0.017	0.373	0.439	1.049
Fair	0.349	0.015	0.318	0.379	0.952
Poor	0.085	0.012	0.061	0.109	1.726
Mental health					
Depression	0.222	0.016	0.191	0.254	1.262
Cognitive impairment	0.021	0.005	0.012	0.030	0.974
Reported chronic conditions					
Underweight	0.011	0.005	0.002	0.021	1.808
Obese	0.399	0.019	0.361	0.436	1.363
Arthritis	0.574	0.018	0.539	0.610	1.220
Hypertension	0.495	0.019	0.458	0.532	1.273
Diabetes	0.145	0.013	0.118	0.171	1.303
Cancer	0.073	0.010	0.054	0.092	1.237
Lung diseases	0.083	0.009	0.066	0.101	0.898
Heart diseases	0.245	0.016	0.213	0.276	1.262
Disability					
ADLs (1 or more)	0.210	0.014	0.181	0.238	1.138
IADLS (1 or more)	0.163	0.013	0.137	0.190	1.173
Household arrangement					
Alone	0.223	0.020	0.182	0.264	2.208
Couple	0.316	0.021	0.273	0.358	1.958
Others	0.461	0.020	0.422	0.500	1.429

Table I.8b-7 Sampling errors and design effects for selected variables (males), Montevideo (Uruguay)

Variable	Estimate	Std. Error	[95% Conf.	Interval]	Design effect
Age					
60-64	0.200	0.018	0.164	0.237	1.124
65-74	0.515	0.023	0.470	0.560	1.089
75 and over	0.285	0.024	0.237	0.333	1.538
Education					
No schooling	0.026	0.009	0.009	0.043	1.540
Primary	0.645	0.027	0.593	0.698	1.644
Secondary or more	0.327	0.025	0.277	0.377	1.554
Marital Status					
Single	0.033	0.008	0.017	0.049	1.019
In union	0.720	0.026	0.667	0.772	1.818
Divorced, separated, widowed	0.239	0.023	0.192	0.285	1.574
Labor force					
Active	0.204	0.023	0.158	0.250	1.745
Self-reported health conditions					
Very good	0.189	0.018	0.154	0.225	1.106
Good	0.501	0.026	0.450	0.552	1.415
Fair	0.268	0.024	0.220	0.316	1.567
Poor	0.042	0.009	0.023	0.060	1.182
Mental health					
Depression	0.113	0.018	0.077	0.148	1.606
Cognitive impairment	0.014	0.006	0.003	0.025	1.199
Reported chronic conditions					
Underweight	0.037	0.009	0.020	0.054	1.124
Obese	0.174	0.024	0.127	0.221	2.087
Arthritis	0.321	0.024	0.272	0.370	1.494
Hypertension	0.377	0.022	0.332	0.421	1.095
Diabetes	0.124	0.017	0.090	0.158	1.401
Cancer	0.045	0.009	0.027	0.062	0.978
Lung diseases	0.109	0.016	0.078	0.140	1.338
Heart diseases	0.226	0.016	0.195	0.258	0.770
Disability					
ADLs (1 or more)	0.108	0.013	0.083	0.134	0.902
IADLS (1 or more)	0.079	0.012	0.054	0.103	1.094
Household arrangement					
Alone	0.128	0.018	0.093	0.163	1.453
Couple	0.337	0.027	0.284	0.391	1.751
Others	0.535	0.028	0.479	0.590	1.666

CHAPTER 4: SPECIAL FEATURES OF THE SABE SURVEY

As it is a survey of older people, the instrument utilized in the SABE study contains a number of features that are rarely encountered within more conventional instruments of data collection. In this chapter the content of the main questionnaire is briefly reviewed focusing on an examination of four of its unique features.

4.1. Nature of questionnaire

The questionnaire design was intentionally geared toward the production of information that could be comparable with that retrieved in other countries. In particular, the aim was to include modules and sections modeled after the Health and Retirement Survey *(citations*), the AHEAD Survey (*citation*) and the set of surveys fielded in various countries of Asia by the Population Studies Center of the University of Michigan and their local collaborators (*citations*). While attempting to strengthen comparability, it was also ensured that the modules included were relevant for the reality of the countries being investigated. The final result is, it is hoped, suitable to identify what is unique in the aging processes in the countries of the region and what similarities they share with other countries.

The questionnaire (See Appendix 2) is divided in a number of modules. These are: basic demographic, social and economic characteristics of the individual; household membership and features of the dwelling; self-reported health and chronic conditions; access and use of health services; medications; cognition and depression; nutritional assessment; activities of daily living (ADL) and instrumental activities of daily living (IADL); work history and income; property and assets; intra-family and institutional transfers.

The questionnaire was only one of two domains of the protocol to gather information. The second domain is anthropometry (weight; height; knee height; arm circumference; waist and hip circumference; triceps fold; calf circumference and wrist width) and mobility and flexibility (one and two-leg balance and a sitting and standing routine).

The sections that follow highlight the nature and importance of four of the special features of the SABE protocol: cognition, depression, nutritional status, and anthropometry.

4.2. Cognition

Cognitive functioning is an important dimension to assess the level of frailty of an individual and is a marker that indicates caregiving and services needs. An adequate level of cognitive functioning is necessary for the performance of the instrumental activities of daily living, for example, shopping, cooking and managing medications and is a necessary condition for the satisfactory accomplishment of basic activities of daily life such as bathing and getting dressed. Not surprisingly, severe cognitive deterioration is one of the principal causes for the institutionalization of older persons in most countries in the world. (*citation)* In Latin America and the Caribbean, although there is little concrete information, anecdotal accounts indicate that the actual prevalence of institutionalization seems to be very low but is on the increase. The rapid growth of assisted group homes and long-term care residences in Argentina, Barbados and

Uruguay may suggest an increase in the prevalence of cognitive deterioration among older populations. Group residences, however, were not included in the sample. The association between cognitive deterioration and long-term caregiving needs imposes an important challenge on all aging societies.

Because of this association a special effort was made to assess levels of cognition in the population being investigated. The challenge was to do this using an instrument devoid of cultural biases and appropriate for a population with relatively low level of education.

a. The MMSE

The measurement of cognitive deterioration is a complicated task made even more difficult by the lack of a validated screening instrument for use with Spanish-speaking persons with low educational levels. The SABE team selected the Folstein "Mini-Mental State Examination" (also known as MMSE) because it had been validated in Chile utilizing clinical examinations as a gold standard. The MMSE is a well-known instrument that elicits information about a number of dimensions of cognition, including orientation, memory, calculation, executive functioning, and language. However, because the validated MMSE was found to retain a strong educational bias (Fillenbaum et al., 1988 Herzog et al., 1997), a decision was made to validate a new version of the MMSE that minimized the low literacy bias.

b. Revisions of MMSE

Using information from the full MMSE found in the Chilean database of the World Health Organization study of Dementia, the SABE research team in Chile proceeded to identify associations between several of its items and diagnosed dementia. This enabled them to formulate an abbreviated version of MMSE that is thought to contain a lesser educational bias than conventional MMSE formulations. The new, reformulated and abbreviated MMSE known as AMMSE consists of 9 items (versus the 19 items of the MMSE). A cut-off point of 12 was identified in this analysis to separate a population with noticeable cognitive deterioration from the rest. As a consequence, individuals with a score of 12 or less were considered to have cognitive deterioration.

When a target individual scored 12 or less in the AMMSE, the Portable Functional Assessment Questionnaire (Pfeffer) was administered to a companion or caregiver of the target. The objective of the PFAQ is to confirm that the level of cognitive decline is indeed accompanied by limitations in the functional capacity of the individual, indicating thereby an advanced form of dementia or related disorders. The cut-off point for the screening version of the PFAQ is 6, and any person scoring 6 or more is considered to be unable to function independently. When a target person's score in the AMMSE was 12 or less but the PFAQ score was below 6, the interview proceeded normally. When the target person's score in the AMMSE was 12 or less and the PFAQ score was 6 or more, the interviewers were instructed to interview a proxy of the target. A substitute proxy was also used when the target individual was too impaired from the outset of the interview to answer some of the basic questions included in the first module of the questionnaire (age, birth date, date of interview). Although these impaired individuals were not even administered the AMMSE, the PFAQ was administered to the proxy to confirm the degree of cognitive and functional impairment.

4.3. Depression

The screening for depression symptoms was carried out using the Abbreviated Geriatric Depression Scale (GDS) (Sheikh et al and Yesavage, 1986) which contains 15 items. The GDS, validated for use with older persons in developed nations has not been validated in Latin America but it is commonly used in clinical practice.

The GDS was only administered to those individuals interviewed who did not evince cognitive deterioration as the test is not applicable to proxies. The prevalence of depressive symptoms in people with cognitive deterioration (those using a proxy interview) requires clinical examination and therefore was not included as part of the survey.

Conventionally, the cut off point for mild depressive symptoms is a score of 6. For severe depressive symptoms the cut-off point is 11. When an individual did not answer all 15 questions, a variable representing the total observed score on answered items was created. Using this pseudo-depression score for the entire sample will naturally yield a lower limit for the total percentage of persons with severe or with mild depressive symptoms.

4.4. Nutritional status

Nutritional deficiencies are common among older people and can have fairly serious consequences. In many cases malnourishment is a result of underlying illness but in many cases is associated with inadequate food intake induced by lack of access, inability to prepare food or difficulties chewing and ingesting.

The Mini Nutritional Assessment (MNA) is a tool used worldwide to evaluate malnutrition in older persons. It was developed and validated on large representative samples of older persons worldwide. A large number of studies have used the MNA to identify persons at nutritional risk. The longer, original version of the MNA was adopted in SABE and was administered in all participating countries. Because in practice the MNA requires the inclusion of information about selected aspects of anthropometric measures, scores derived from it can and should be used jointly with results of anthropometric measurements.

4.5. Physical measurement, anthropometric measures and flexibility or mobility

A great deal of information on nutritional status can be derived from very simple anthropometric measures such as weight and height of individuals. It is standard practice, for example, to use the Body Mass Index (BMI) to generate indicators of malnutrition or obesity. Similarly, information on BMI coupled with statistics on mortality, chronic diseases and disability can open up the space for thought-provoking research seeking a connection between various dimensions of the process of health deterioration. By the same token, other measures that are less routinely collected, such as waist and hip circumference have been recently employed to determine density of fat deposits to provide an empirical basis to the relation between existence of recurrent stress or arousal, hormonal dysfunction, and lipid storage (Adler et al., 2001).

The protocol of SABE included the above as well as other anthropometric measures that had independent importance (such as wrist width) or that could be used to reinforce and make more robust some of the other measures. Such is the case, for example, of knee height that serves as a surrogate of height in a regression model to estimate height for individuals whose skeletal mass has been considerably compressed.

In addition to anthropometric measures, the protocol used in SABE called for the assessment of flexibility and mobility through the use of simple exercise and the interviewer's assessment of the respondent's performance. Such is the case of the one leg stand, the two-leg balance and the repeated get-up and sitting exercises. Poor performance in these simple exercises may indicate the presence of physical limitations and is a good predictor of mortality.

The two components of the protocol used in SABE, the questionnaire as well as the anthropometry and mobility and flexibility exercises, reflect the most recent knowledge available to us regarding assessments of the older adult's physical and mental status. This, jointly with information gathered on the other dimensions of the personal and family life of individuals and of their functioning in the larger social context, should offer immensely rich opportunities to scientists and policy makers alike to evaluate the nature of the aging process in the region.

4.6. Special Modules for Buenos Aires, Montevideo and Santiago de Chile.

The Interamerican Development Bank funded the inclusion of three special modules to the core SABE questionnaire: Module H 31 to H47: questions on domestic economy and consumption of specific goods and services; Module J14- J39: questions on environmental barriers and demand for assistive devices; Module M01 to M06: questions on leisure time activities and use of free time. These modules were included at the end of the survey and were used in Santiago de Chile, Buenos Aires and Montevideo. These modules were designed to assess demand for special markets to satisfy the specific needs and desires of older persons and their willingness to pay for them.

SECTION II

PRELIMINARY RESULTS

1. INTRODUCTION

This section presents a very brief summary of some of the most salient results from the surveys. No attempt is made to engage any hypotheses nor to provide a solid, comparative perspective by systematically tracing differences and signaling similarities across countries. Rather, the intent is to display important features that stand out within each of the most important modules contained in the questionnaire, namely, demographic and social characteristics, living arrangements, labor force participation, and physical and metal health status. This section is organized to address and highlight the concerns associated with the aging process in the region that were raised earlier in Chapter 1 of Section I. It is hoped that the section is informative in a general way and, most importantly; that it will raise questions and doubts that can only be resolved through more thorough analyses of the data.

The data are presented in tables and in the form of simple graphs that are arrayed by themes and countries. Two types of graphs are included here. First are those with all the age detail that was retrievable from the data itself. These graphs reveal general patterns but are also affected by the noise produced by sparse numbers, especially at older ages. The second type of graph is constructed using three broad age groups, 60-64, 65-74 and 75 and over. The decision to use this grouping instead of alternative age breakdowns was made for several reasons. First, the age groups 60-64 and 75 and over may be considered as, respectively, "younger" and "older" elders, of a nature distinct from those in the intermediate age group. Of course, this distinction is excessively coarse to capture subtle changes that occur continuously not discretely, but it is useful to identify characteristics in different stages of aging. Second, it was the only breakdown that permitted separating the oldest old (aged 75 and over) and other age groups that sometimes are treated together and sometimes are treated apart. In some countries the older population refers to the population aged 65 and above whereas the usage in most countries has generally described the population above age 60. Presenting information separately for both of them can at least provide an idea about the differences that follow from using one or the other definition.

2. DEMOGRAPHIC AND SOCIAL CHARACTERISTICS

2.1 Age and gender

Figures 1a-1 to 1b-7 and show for each city the age profile of the population studied by sex. The figures for each city are “spike-plots” that display the **absolute** number of individuals by single year of age in the sample. This was done instead of plotting the more traditional proportional age distribution to give the reader a sense of magnitude and to associate each age group with an absolute number of individuals being investigated.

These age profiles reveal two main patterns. For most countries a curve is obtained which rises from age 60, peaks at around age 70 and then descends gradually. Only Mexico and Cuba display a monotonically decreasing profile. The lack of monotonicity of the age curves in the remaining countries could be the result of past fertility fluctuations and, particularly, of the baby

bust that followed the great depression. This led to older birth cohorts being of a sufficiently larger size as to offset the increased mortality they experience by virtue of being older. However, further checking with national figures is necessary to ascertain whether the sample reproduces a generalized feature rather than being idiosyncratic. Most other irregularities are attributable to small sample sizes at more advanced ages.

Table II.1 shows the distribution by sex and age group of the study population in the seven cities. Of some note should be the contrast between a rather "young" age distributions--such as those of Mexico City and Sao Paulo --and the older ones of Bridgetown, Buenos Aires and Montevideo. These contrasts are, as mentioned before, only a function of the past histories of fertility and mortality decline in the region. Countries that experience a later demographic transition show a rather young age distribution above age 60 while the forerunners show the signs of a much older population in this group of elders.

Table II.1 Percent distribution of older adults by sex and age group, study cities, 2001

	60 years and over		Female			Male		
City	Female	Male	60-64	64-74	75+	60-64	64-74	75+
Buenos Aires	62	38	21.52	49.94	28.55	22.82	51.22	25.96
Bridgetown	60	40	20.79	42.51	36.69	15.62	46.99	37.40
Sao Paulo	58	42	30.80	45.00	24.20	34.40	46.43	19.17
Santiago	66	34	27.29	42.40	30.31	32.88	43.38	23.73
Havana	59	41	26.24	39.78	33.98	30.39	43.14	26.47
Mexico City	56	44	29.48	43.55	26.97	36.10	43.56	20.34
Montevideo	64	36	21.91	47.06	31.03	20.00	51.48	28.52

Source: PAHO. SABE Survey, 2001 & preliminary report

Figure 1a-1. Distribution of older female population by age, Buenos Aires (Argentina)

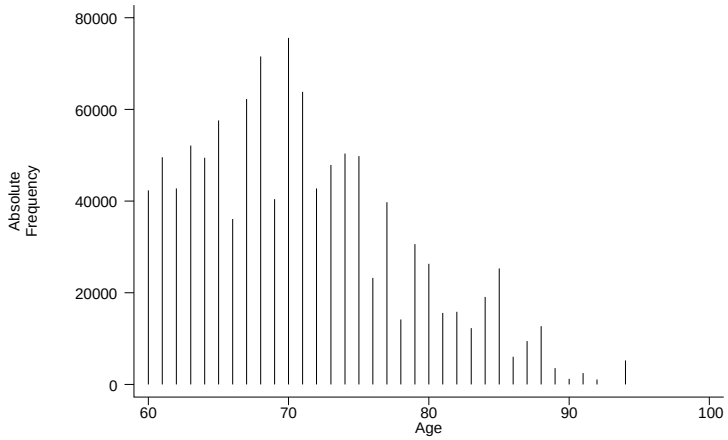


Figure 1b-1. Distribution of older male population by age, Buenos Aires (Argentina)

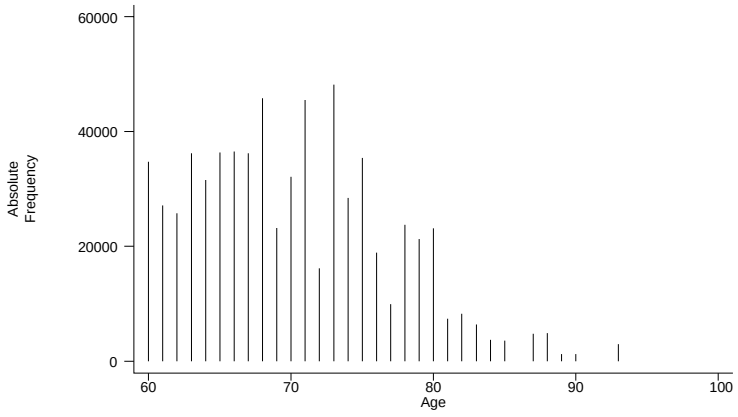


Figure 1a-2. Distribution of older female population by age, Bridgetown (Barbados)

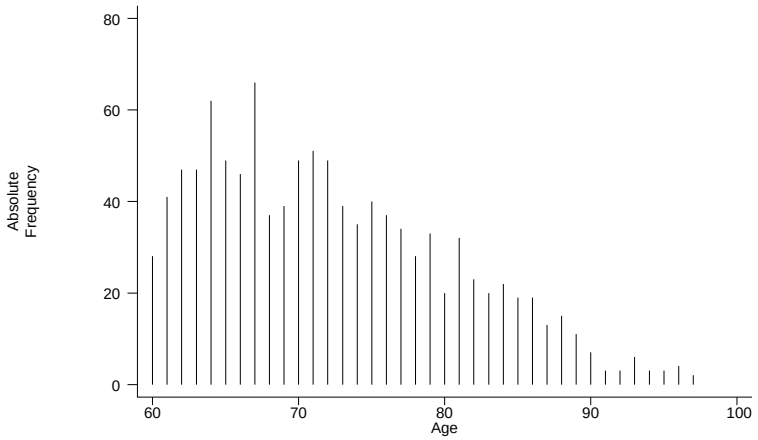


Figure 1b-2. Distribution of older male population by age, Bridgetown (Barbados)

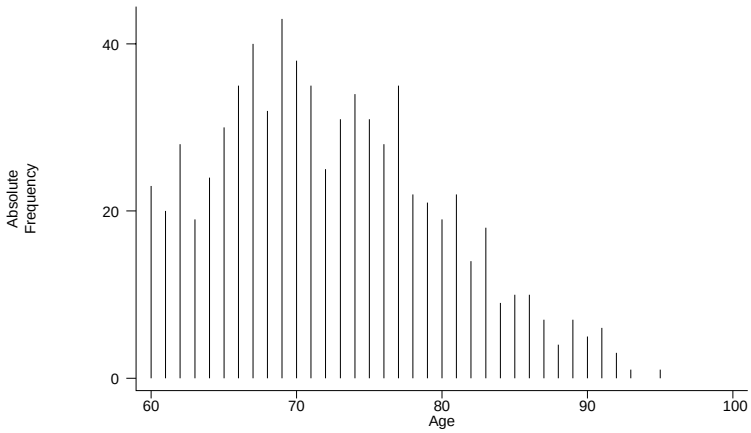


Figure 1a-3. Distribution of older female population by age, Sao Paulo (Brazil)

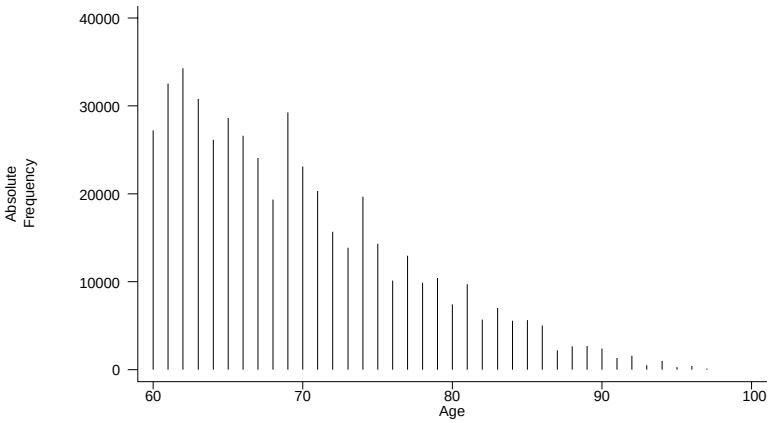


Figure 1b-3. Distribution of older male population by age, Sao Paulo (Brazil)

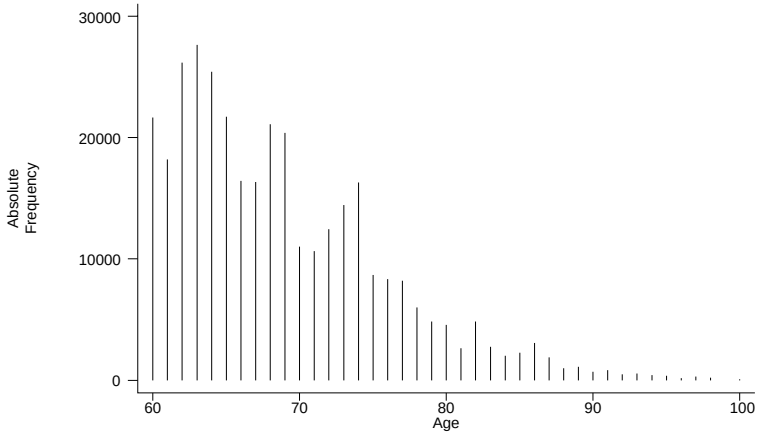


Figure 1a-4. Distribution of older female population by age, Santiago (Chile)

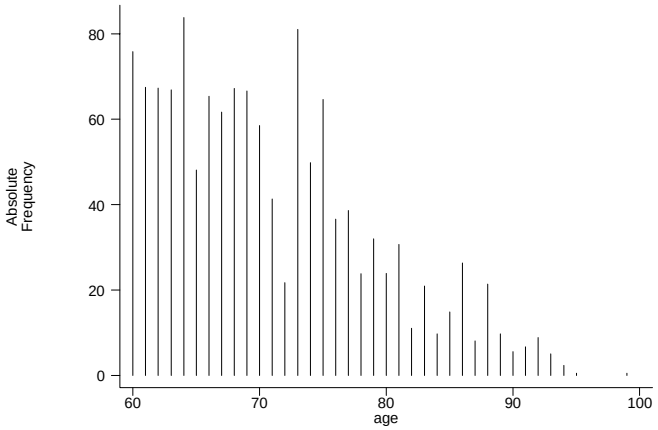


Figure 1b-4. Distribution of older male population by age, Santiago (Chile)

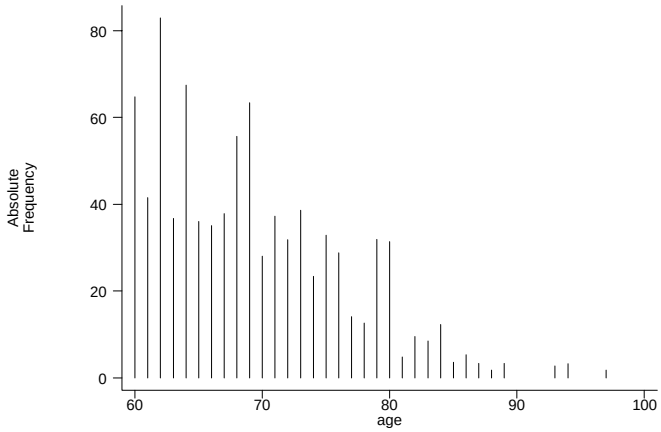


Figure 1a-5. Distribution of older female population by age, Havana (Cuba)

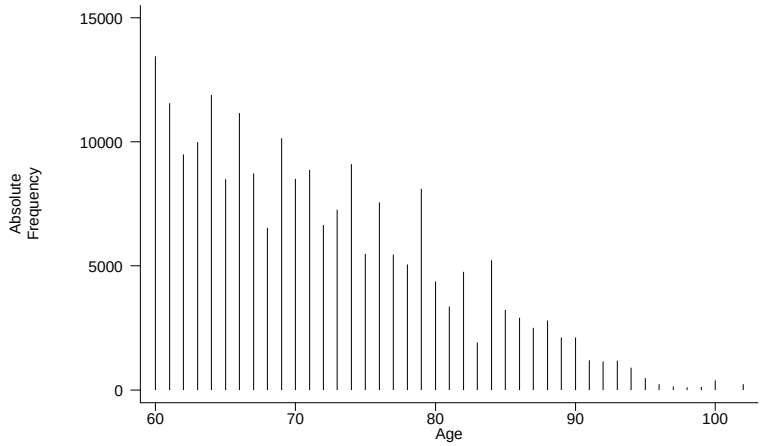


Figure 1b-5. Distribution of older male population by age, Havana (Cuba)

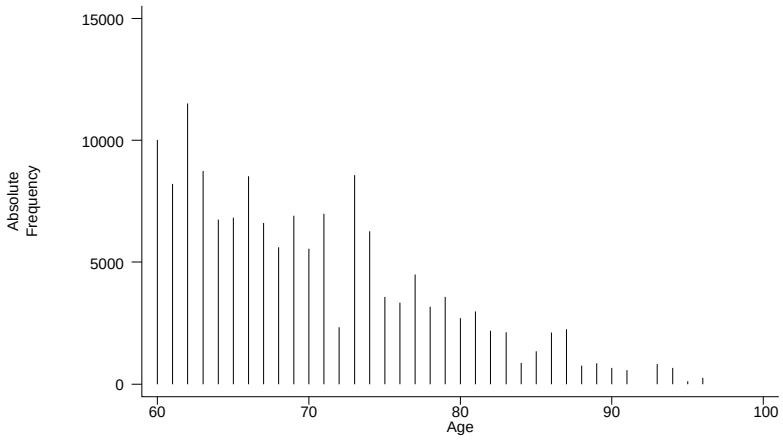


Figure 1a-6. Distribution of older female population by age, Mexico City (Mexico)

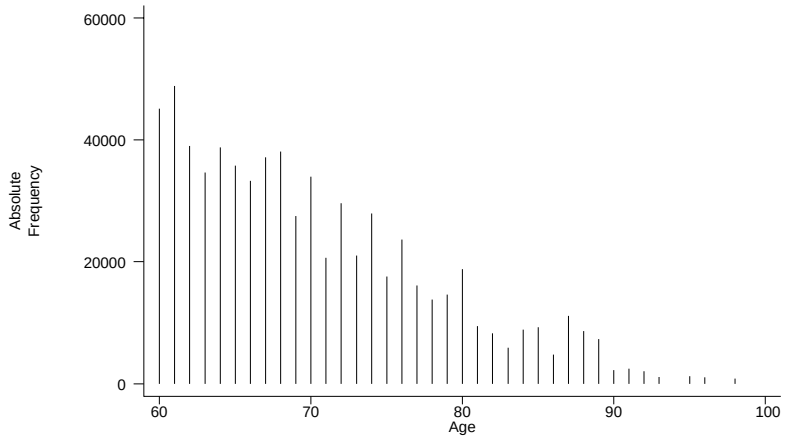


Figure 1b-6. Distribution of older male population by age, Mexico City (Mexico)

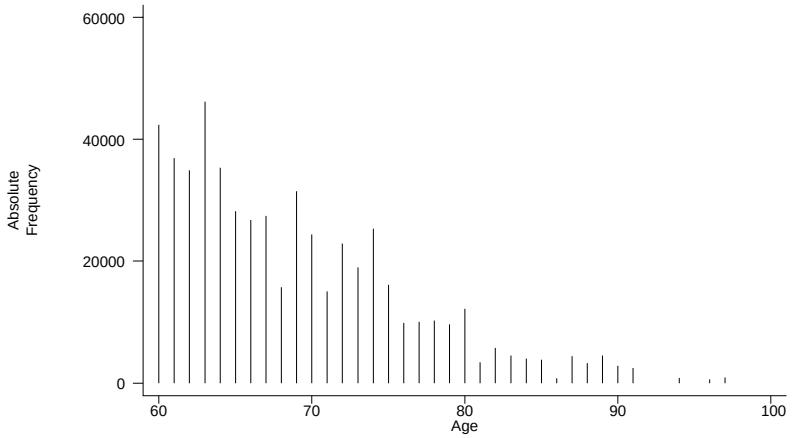


Figure 1a-7. Distribution of older female population by age, Montevideo (Uruguay)

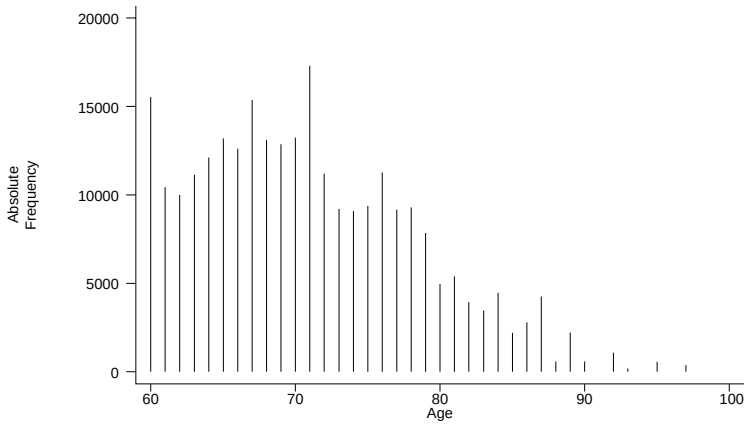
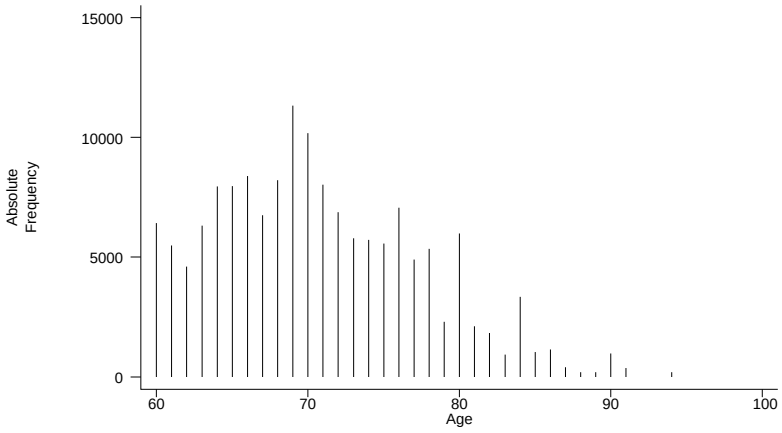


Figure 1b-7. Distribution of older male population by age, Montevideo (Uruguay)



2.2 Marital status

Table II.2 shows the marital status of older adults by sex and age group.

These data, and Figures 2a-1 to 2b-7, are expected and corroborate information from censuses, namely, that there is a sharp increase by age in the proportion of older adults who are unmarried (separated, divorced, widowed) and that the rates of increase (by age) and the absolute levels are far larger among women than men. Take the case of Havana, for example, where almost 90 percent of women older than 75 are unmarried (versus about 43 percent among males in the same age group). These contrasts are reproduced in other cities that, overall, display a remarkable similarity to each other.

Table II.2: Marital status of older adults according to sex and age: study cities, 2001.

Marital status, sex and age	Buenos Aires (Argentina)	Bridgetown (Barbados)	Sao Paulo (Brazil)	Santiago (Chile)	Havana (Cuba)	Mexico City (Mexico)	Montevideo (Uruguay)
			Percent of population				
Never married							
Female							
60-64 years	5.52	24.32	6.23	8.87	1.46	5.50	2.12
65-74 years	5.82	21.81	4.26	7.69	4.42	3.61	4.17
75 years +	7.48	22.14	5.86	10.16	3.11	9.54	3.83
Male							
60-64 years	3.32	11.40	3.44	1.62	2.49	3.22	1.73
65-74 years	3.42	11.01	5.45	5.71	2.86	1.33	4.64
75 years +	5.78	10.41	3.61	4.12	3.50	0.67	2.15
In union							
Female							
60-64 years	59.75	44.59	54.97	56.96	41.72	53.66	51.58
65-74 years	49.20	43.61	42.27	49.36	23.75	42.77	38.82
75 years +	20.61	18.07	22.14	19.63	7.82	16.40	18.53
Male							
60-64 years	81.09	63.16	83.27	85.29	79.48	84.60	79.80
65-74 years	74.90	65.18	80.90	76.33	61.01	78.63	72.83
75 years +	68.79	53.53	67.24	72.16	53.04	58.58	67.04
Separated, divorced widowed							
Female							
60-64 years	34.73	31.08	38.80	34.16	56.82	40.85	46.31
65-74 years	44.98	34.58	53.47	42.95	71.83	53.62	57.01
75 years +	71.91	59.80	72.00	70.20	89.08	74.06	77.64
Male							
60-64 years	15.59	25.44	13.29	13.09	18.03	12.18	18.47
65-74 years	21.69	23.81	13.66	17.96	36.13	20.04	22.53
75 years +	25.42	36.06	29.15	23.72	43.46	40.74	30.81

Source: PAHO. SABE Survey, 2001

Figure 2a-1. Percentage of older females by marital status and age groups, Buenos Aires (Argentina)

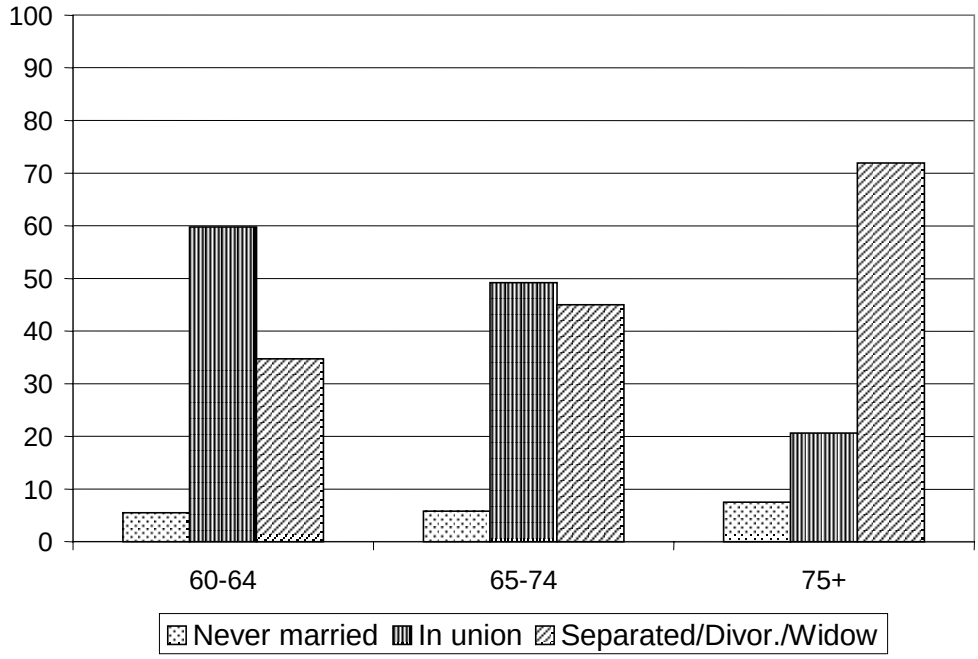


Figure 2b-1. Percentage of older males by marital status and age groups, Buenos Aires (Argentina)

Figure 2a-2. Percentage of older females by marital status and age groups, Bridgetown (Barbados)

Figure 2b-2. Percentage of older males by marital status and age groups, Bridgetown (Barbados)

Figure 2a-3. Percentage of older females by marital status and age groups, Sao Paolo (Brazil)

Figure 2b-3. Percentage of older males by marital status and age groups, Sao Paolo (Brazil)

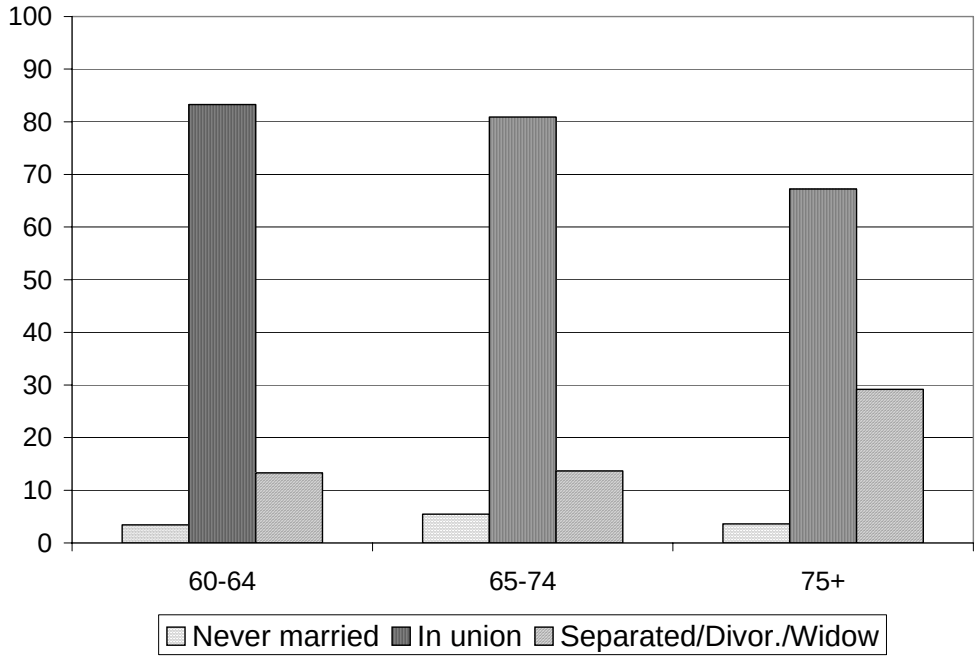


Figure 2a-4. Percentage of older females by marital status and age groups, Santiago (Chile)

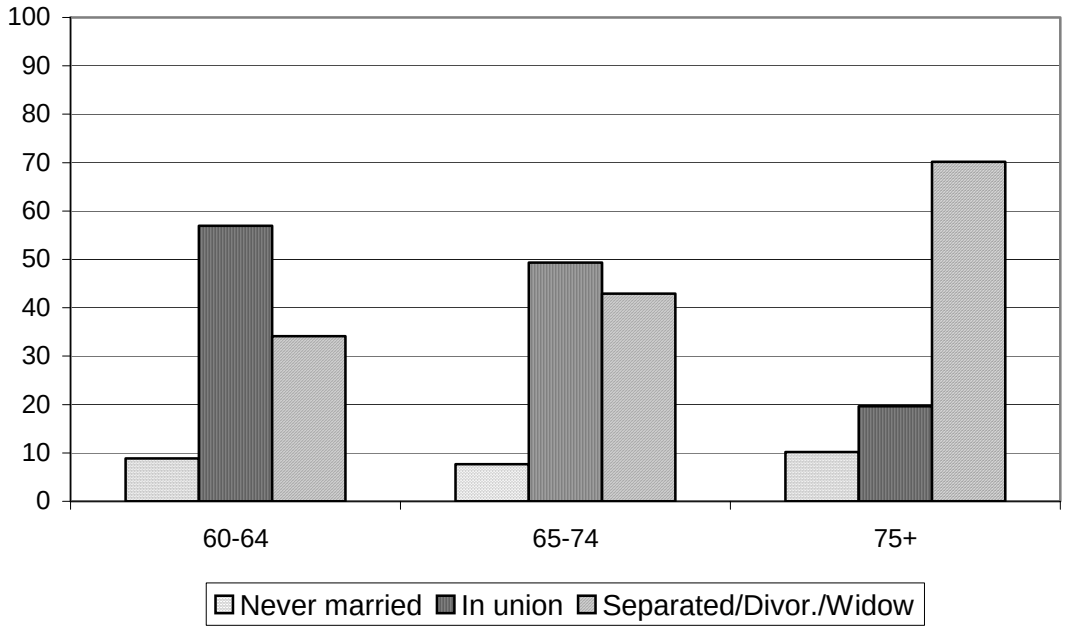


Figure 2b-4. Percentage of older males by marital status and age groups, Santiago (Chile)

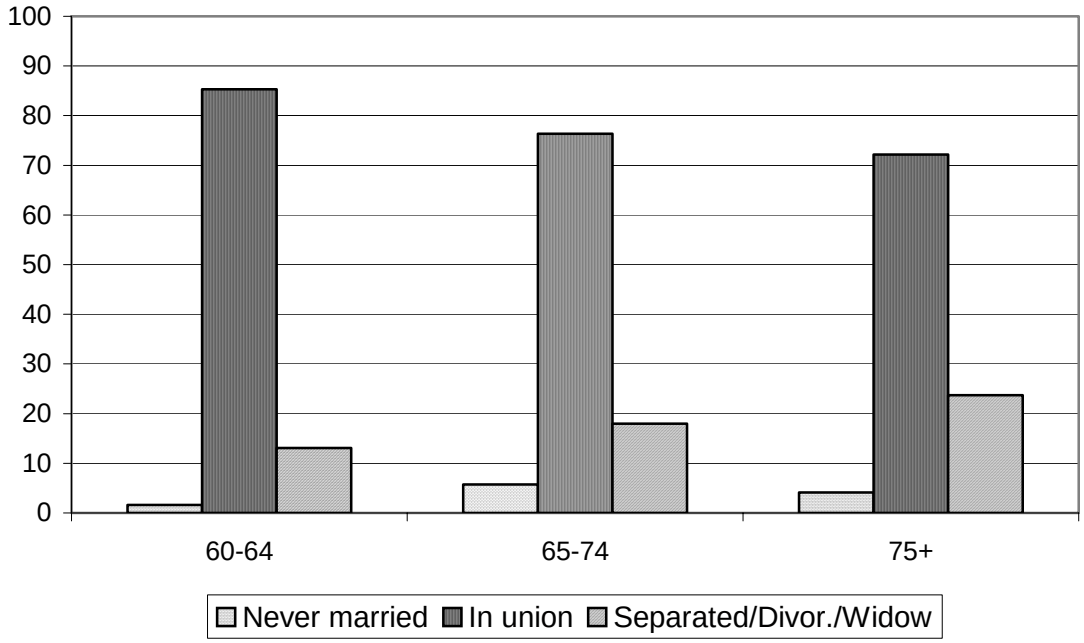


Figure 2a-5. Percentage of older females by marital status and age groups, Havana (Cuba)

Figure 2b-5. Percentage of older males by marital status and age groups, Havana (Cuba)

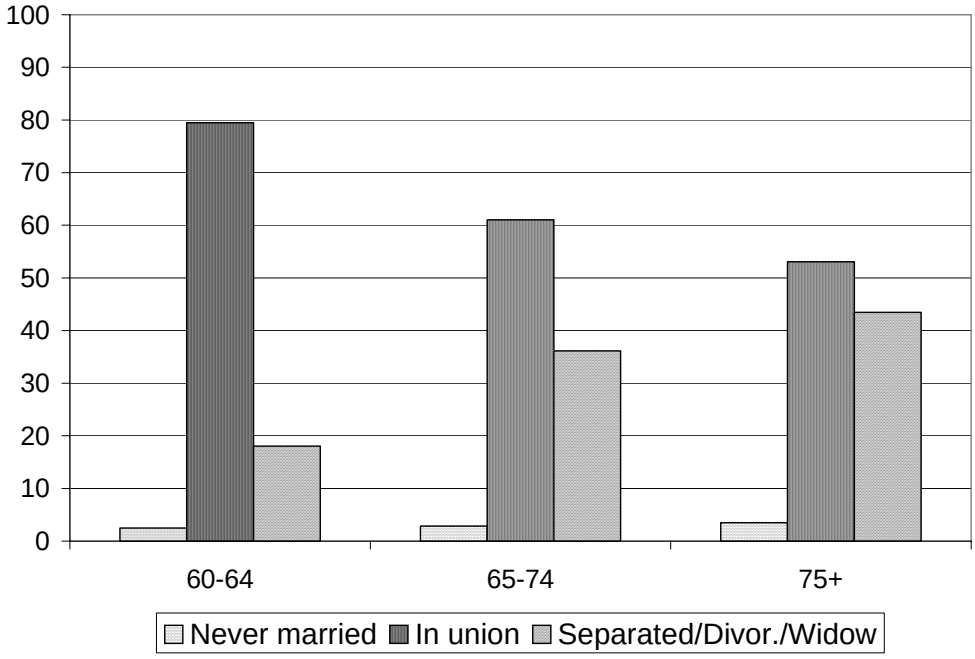


Figure 2a-6. Percentage of older females by marital status and age groups, Ciudad de Mexico (Mexico)

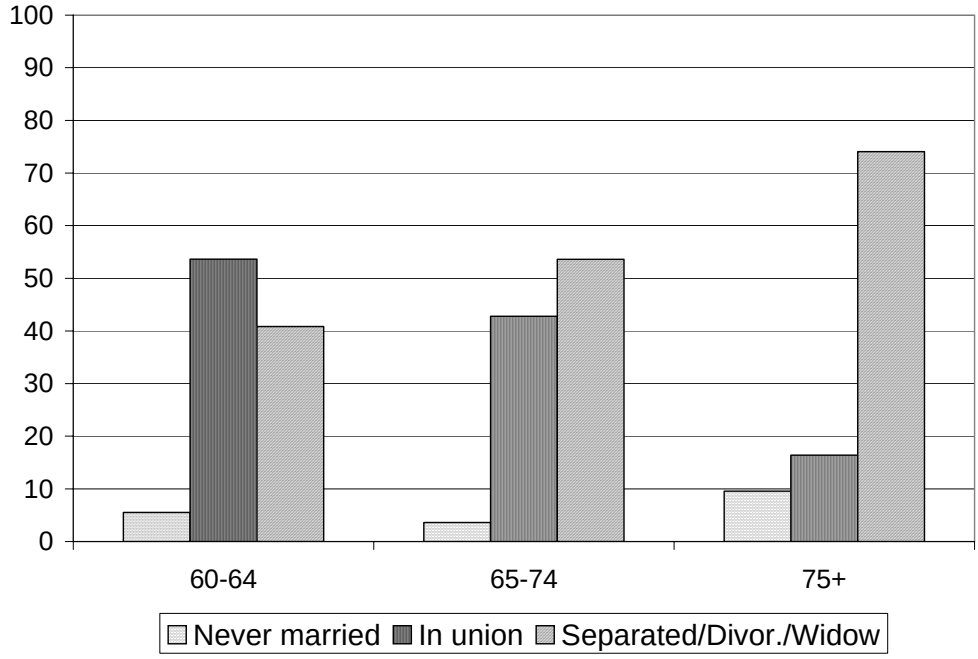


Figure 2b-6. Percentage of older males by marital status and age groups, Ciudad de Mexico (Mexico)

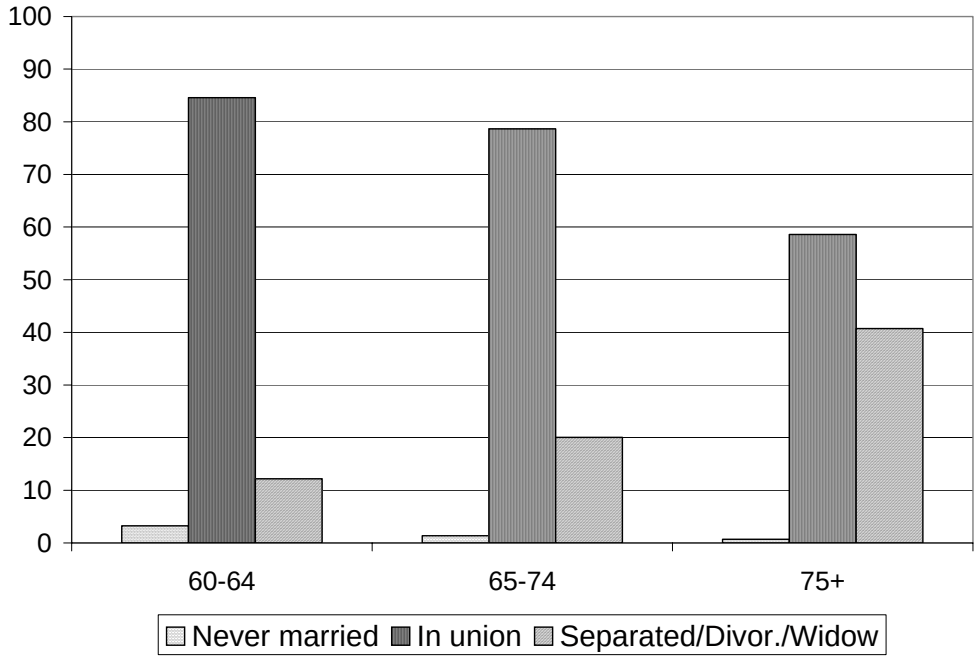


Figure 2a-7. Percentage of older females by marital status and age groups, Montevideo (Uruguay)

Figure 2b-7. Percentage of older males by marital status and age groups, Montevideo (Uruguay)

3. LABOR FORCE PARTICIPATION

Despite the fact that labor force participation decreases sharply with age in all countries, the levels are quite high. As shown in Figure 3a-1 o 3b-7, the levels of labor force participation fluctuate between .40 and .80 among males in the age range 60-64, and in a range half as large as that among females. While in some countries, such as Uruguay, the age at which labor force participation drops is relatively young (less than 65) in others such as Mexico, withdrawal from the labor force occurs later and tends to be more gradual. The disparity in labor force participation across gender, as shown in Table II.3, is universal and in keeping with expectations derived from knowledge about participation in the labor market in the region.

It is very likely that older people remain in the labor force (and may even re-enter after withdrawing) out of necessity rather than as a preferred choice. This can, in part at least, be studied by examining the association between labor force participation and pension receipts. Figure 3b displays, by age and sex, the fraction of the older population that receives a pension (private, public or a combination). It is worthwhile noting that while there are some important disparities across countries, the similarities are more dominant. In particular, in just about all cities (the exceptions being Mexico City and Sao Paulo Brazil) the fraction of males receiving some type of pension is very close to 80% near the peak of the curves. Buenos Aires Argentina and Montevideo Uruguay stand out as cities where pension receipts are as virtually universal within the young older adults as within the intermediate and oldest old age groups.

Second, the disparities by gender in pension receipts are sharp and universal. Not unexpectedly, only a minority of women receives any pension income at all.

From the above one could argue that there is an association, albeit very weak, between pension receipts and labor force participation. The study identified the monetary value of pensions and the magnitude of other income flows however, the number of no responses to these questions makes the analysis of this section extremely difficult. Yet, the information obtained suggests that statements alerting to poverty levels among older persons (see Chapter 1 in Section I) are not unfounded.

Table II.3. Percent of older adults in labor force, by sex and age group: study cities, 2001

	Female			Male		
City	60-64	64-74	75+	60-64	64-74	75+
Buenos Aires	35.22	15.96	1.06	67.38	33.08	19.44
Bridgetown	30.67	9.35	2.77	26.44	14.13	5.53
Sao Paulo	26.44	14.13	5.53	57.46	37.88	14.03
Santiago	25.07	14.36	3.00	59.19	39.55	19.93
Havana	15.93	8.56	0.95	51.83	36.04	13.84
Mexico City	29.63	11.56	6.13	64.40	44.75	19.29
Montevideo	21.80	11.16	4.90	57.02	17.49	3.66

SOURCE: PAHO. SABE SURVEY, 2001

Figure 3a-1. Proportion of older adults in the labor force by sex and age, Buenos Aires (Argentina)

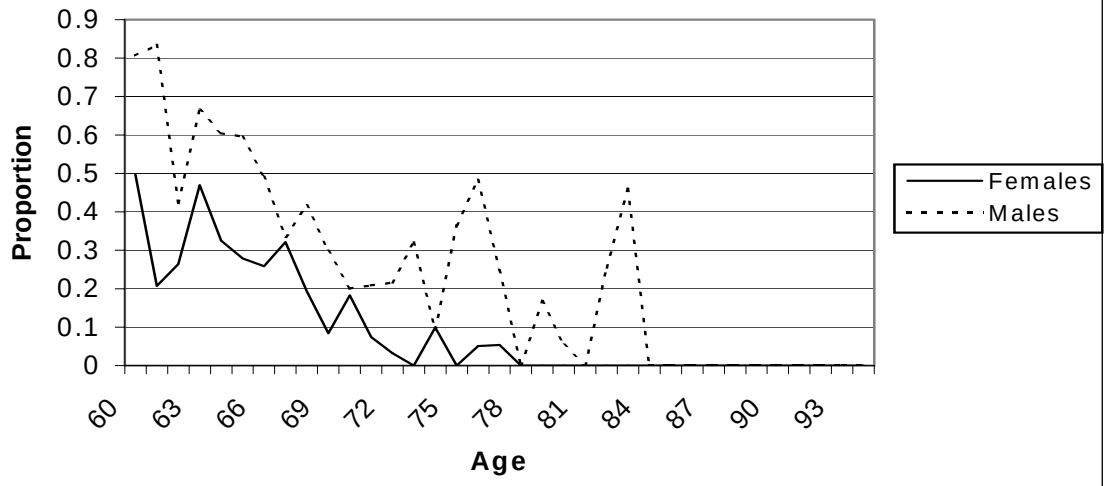


Figure 3a-2. Proportion of older adults in the labor force by sex and age, Bridgetown (Barbados)

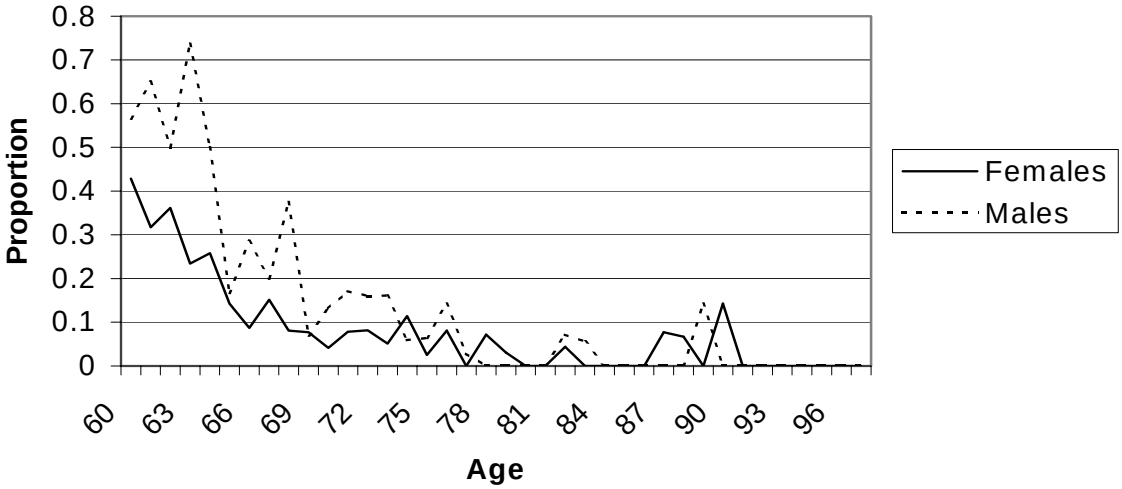


Figure 3a-3. Proportion of older adults in the labor force by sex and age, Sao Paulo (Brazil)

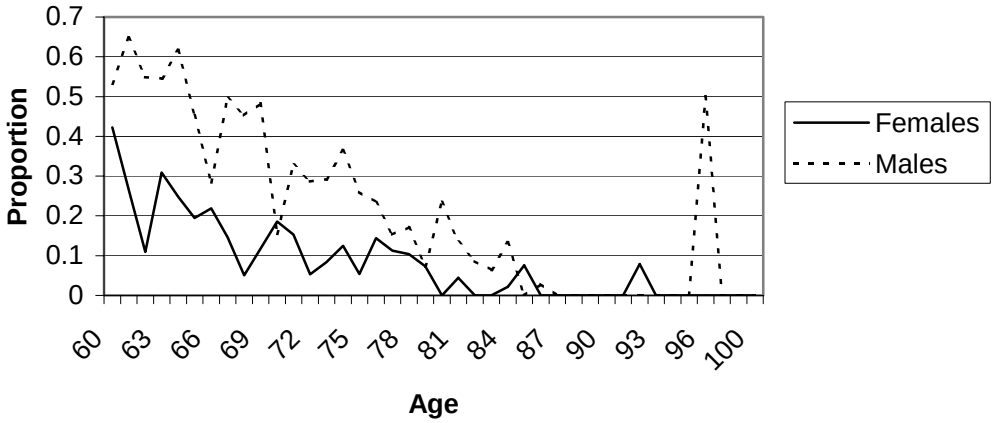
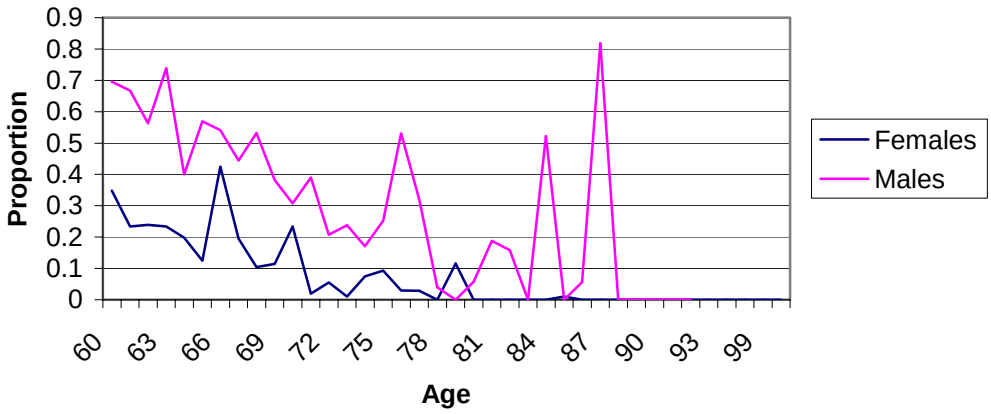


Figure 3a-4. Proportion of persons in the labor force by sex and age, Santiago (Chile)



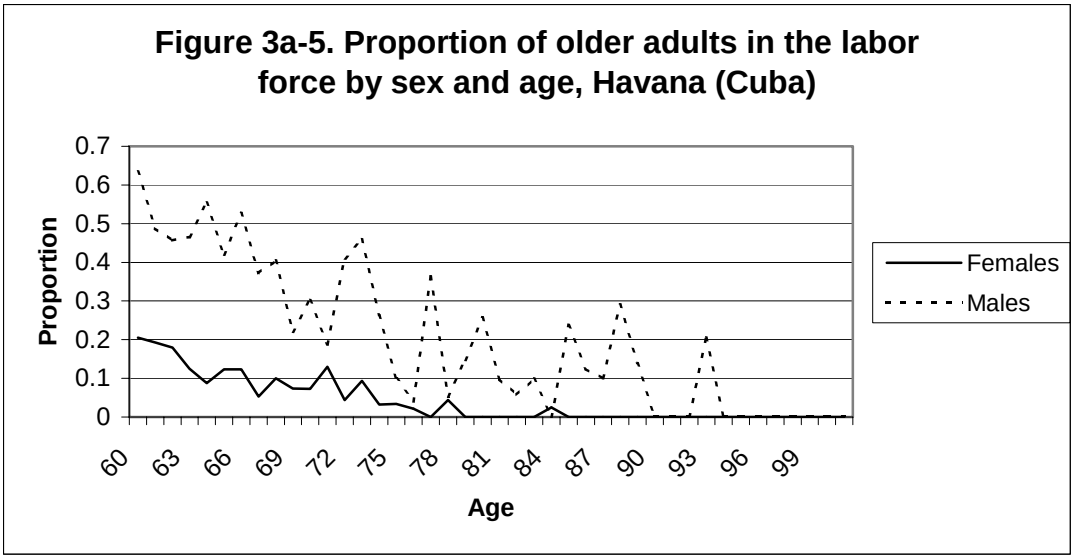


Figure 3a-5. Proportion of older adults in the labor force by sex and age, Havana (Cuba)
Proportion
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
60
63
66
69
72
75
78
81
84
87
90
93
96
99
Age
Females
Males

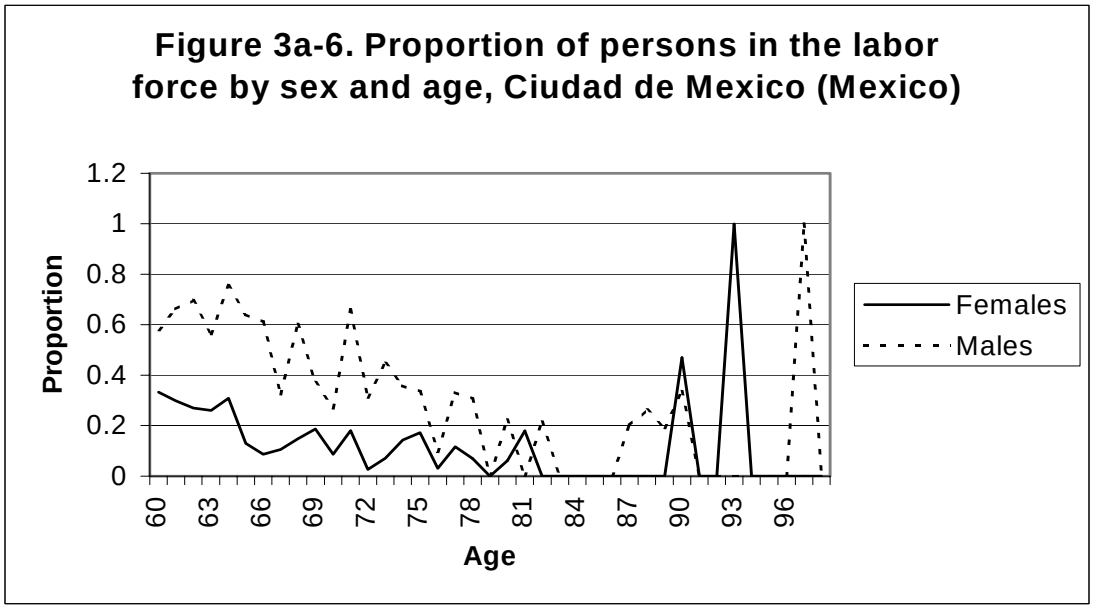


Figure 3a-6. Proportion of persons in the labor force by sex and age, Ciudad de Mexico (Mexico)
Proportion
1.2
1
0.8
0.6
0.4
0.2
0
60
63
66
69
72
75
78
81
84
87
90
93
96
Age
Females
Males

Figure 3a-7. Proportion of older adults in the labor force by sex and age, Montevideo (Uruguay)

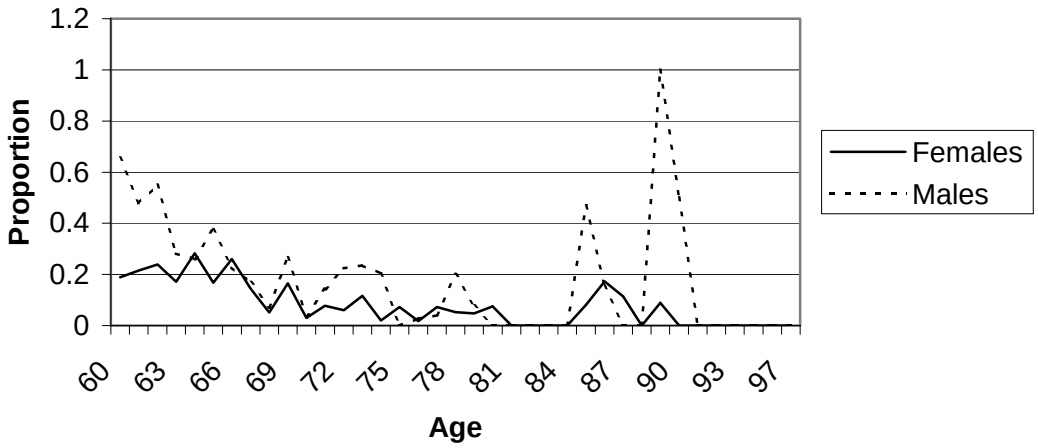


Figure 3b-1. Proportion of older adults receiving pensions, by sex and age, Buenos Aires (Argentina)

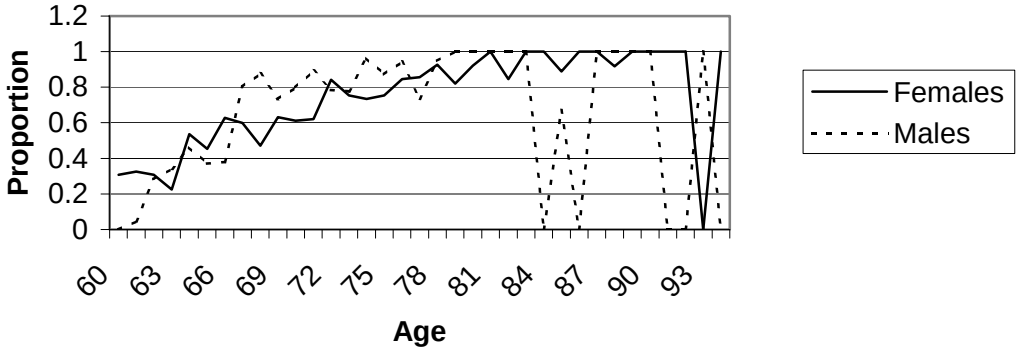


Figure 3b-2. Proportion of older adults receiving pensions, by sex and age, Bridgetown (Barbados)

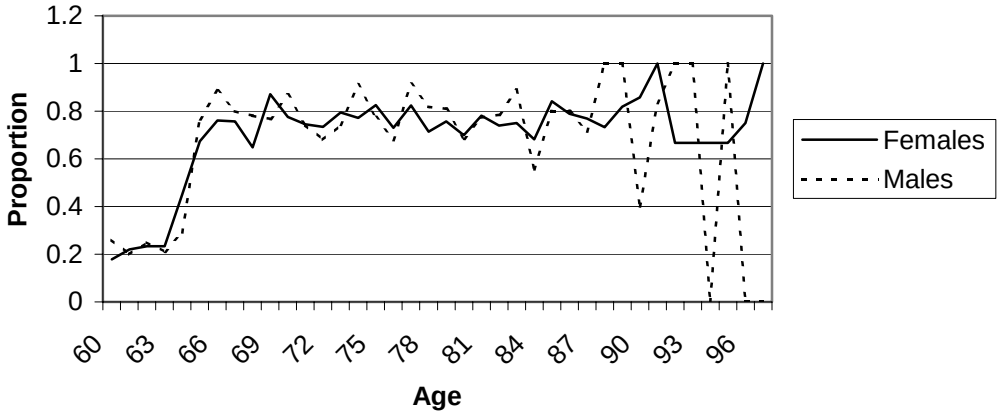


Figure 3b-3. Proportion of older adults receiving pensions, by sex and age, Sao Paulo (Brazil)

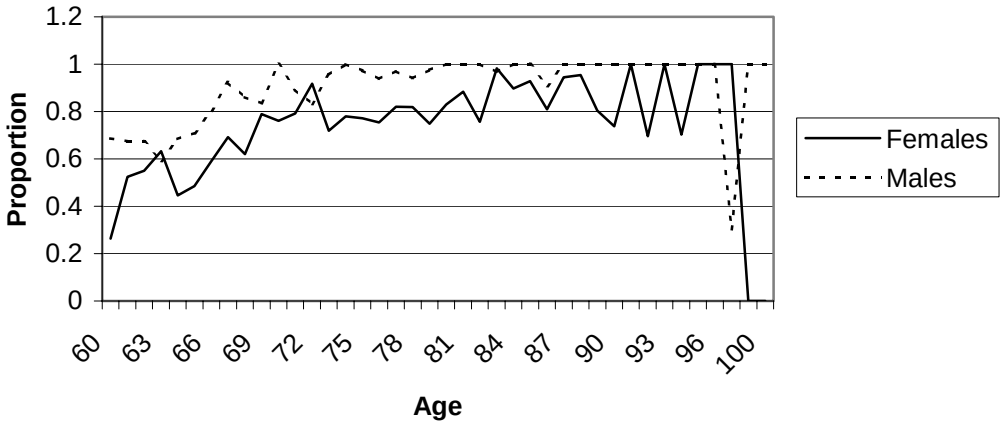


Figure 3b-4. Proportion of persons receiving pensions by sex and age, Santiago (Chile)

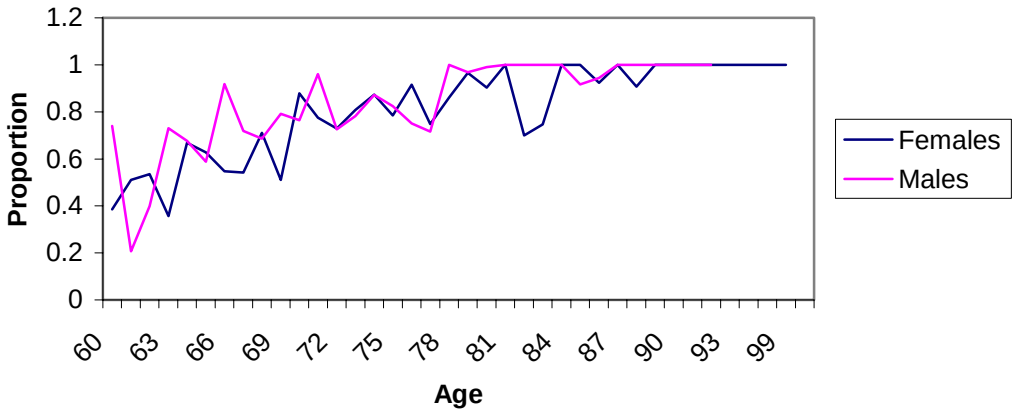


Figure 3b-5 Proportion of older adults receiving pensions, by sex and age, Havana (Cuba)

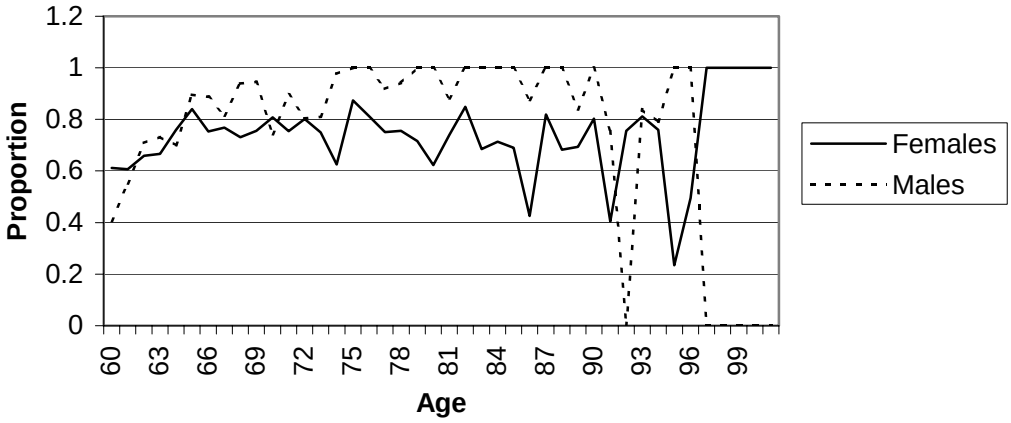


Figure 3b-6. Proportion of older adults receiving pensions, by sex and age, Mexico City (Mexico)

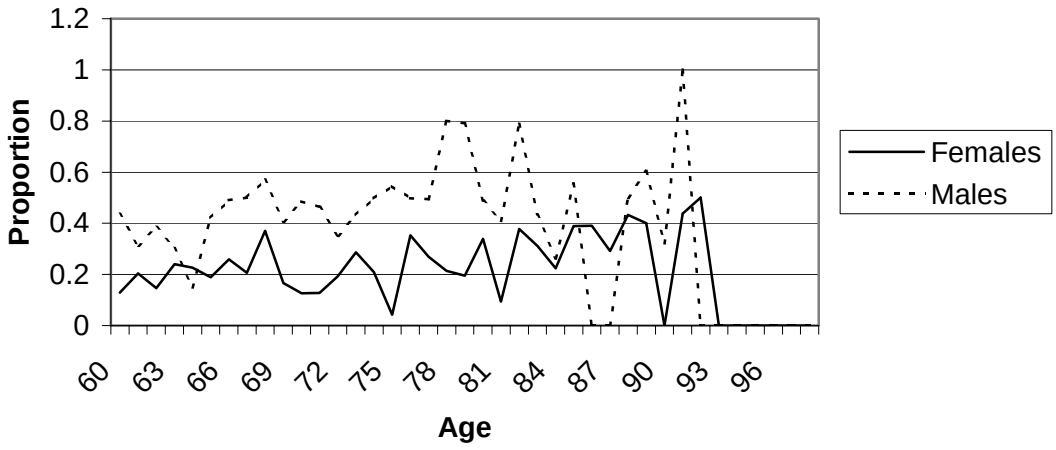
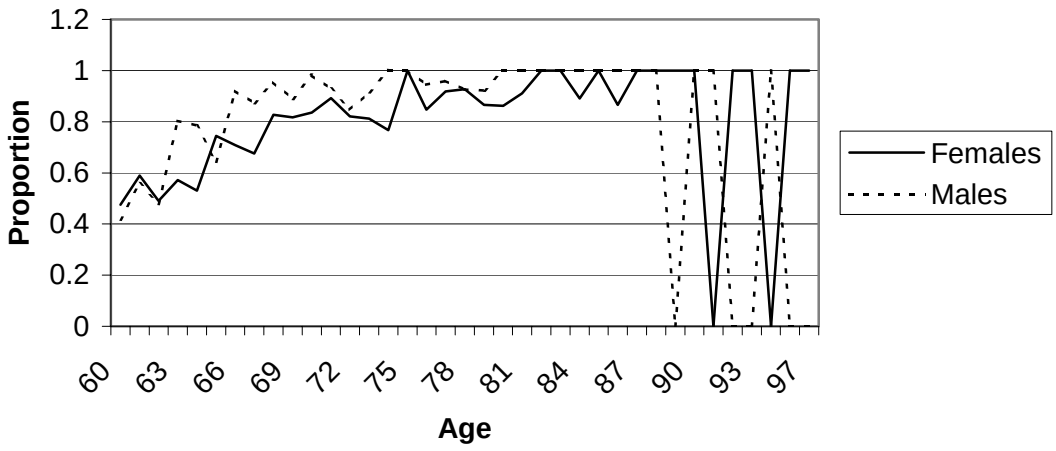


Figure 3b-7. Proportion of older adults receiving pensions, by sex and age, Montevideo (Uruguay)



4. LIVING ARRANGEMENTS

In Latin America older adults living alone is not as common as it is in North America and Western Europe but it is probably higher than in countries in Asia. This is in keeping with the idea of strong familial relations and the safety net they provide.

Because of the male-female mortality disparities, at all ages females are always more likely to live alone than males. There is nothing unusual about this. More interesting is the low level of prevalence of living alone among females in various cities. Note in Table II.4 and in Figures 4.1-4.7 that the age patterns are uniformly flat rather than increasing or fluctuating by age, as one would expect if the prevalence of older adults living alone responded in part to the differences in the age of their children. Note also that there are important inter-city contrasts. In fact, whereas in Buenos Aires and Montevideo the levels of living alone among females exceed 25 percent, in cities such as Havana and Sao Paulo the prevalence is below 15 percent. Other cities occupy an intermediate position. It is unclear from these observed patterns whether the inter-city disparities reflect more variation in kin availability rather than in social preferences. Argentina and Uruguay, and to some extent Barbados, experienced earlier fertility and mortality transitions, and older adults there could encounter stronger demographic constraints regarding kin availability than those found in other countries. But the association between demographic regime and prevalence of living alone is quite tenuous, and one should resist jumping to conclusions on the basis of this evidence alone.

Is there any evidence of the end of traditional arrangements whereby older adults co-reside with at least one of their surviving children? There is no point of comparison to answer this question more definitely and it is plainly too risky to assume that Mexico City, or Havana for that matter, will go the same way Buenos Aires and Montevideo did. In any case, the levels of living alone among older adults in all these seven cities is lower than in North America and Western Europe but higher than those found in Asia. (Palloni, 2001; Devos and Palloni, 2002)

Table II.4. Living arrangements of older adults according to sex and age: study cities, 2001.

Living arrangements, sex and age	Buenos Aires (Argentina)	Bridgetown (Barbados)	Sao Paulo (Brazil)	Santiago (Chile)	Havana (Cuba)	Mexico City (Mexico)	Montevideo (Uruguay)
				Percent of population			
Living alone							
Female							
60-64 years	14.90	9.33	11.36	4.98	12.10	7.89	12.98
65-74 years	19.66	19.35	16.00	10.39	12.91	11.99	21.35
75 years +	34.05	28.97	26.10	15.94	10.42	15.26	29.97
Male							
60-64 years	10.40	15.79	3.95	7.67	9.11	5.92	11.39
65-74 years	11.95	19.83	8.03	4.96	9.47	5.98	14.30
75 years +	19.36	26.37	12.70	6.80	8.57	12.68	11.10
Living with spouse							
Female							
60-64 years	34.16	25.33	37.71	54.57	30.02	40.23	35.53
65-74 years	19.83	25.47	23.82	45.88	15.93	29.08	17.13
75 years +	2.33	5.97	10.71	19.06	5.92	9.31	5.45
Male							
60-64 years	56.74	41.23	65.77	80.53	50.49	69.41	51.17
65-74 years	36.60	37.03	49.91	72.58	42.18	59.40	34.12
75 years +	20.34	23.08	35.28	68.56	37.25	37.11	26.65
Living with others							
Female							
60-64 years	50.94	65.33	50.93	40.44	57.88	51.88	51.49
65-74 years	60.50	56.09	60.18	43.73	71.16	58.93	61.52
75 years +	63.62	65.24	63.19	65.00	83.66	75.43	64.58
Male							
60-64 years	32.86	42.98	30.28	11.80	40.40	24.67	37.44
65-74 years	51.45	43.15	42.06	22.46	48.34	34.62	51.58
75 years +	60.31	50.55	52.02	24.63	54.18	50.22	62.25

Source: PAHO. SABE Survey, 2001

Figure 4.1. Proportion of older adults living alone, by sex and age, Buenos Aires (Argentina)

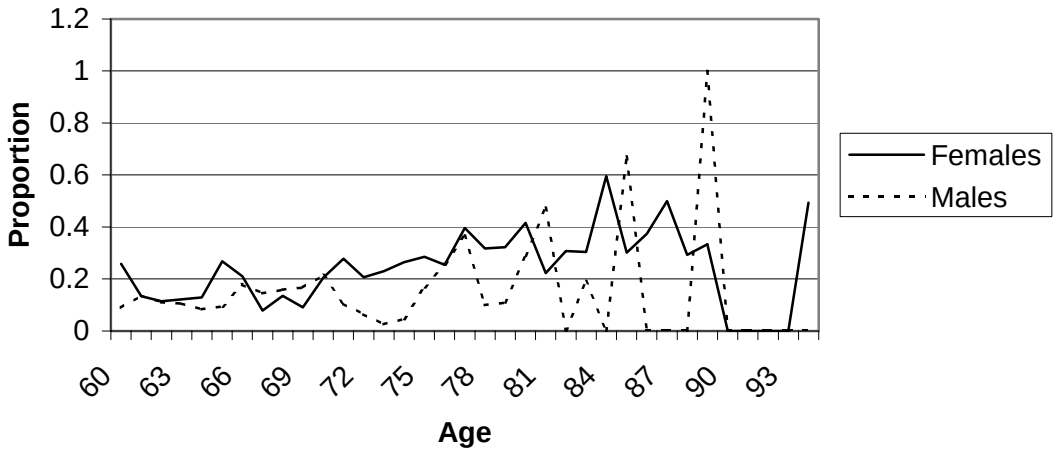


Figure 4.2. Proportion of older adults living alone, by sex and age, Bridgetown (Barbados)

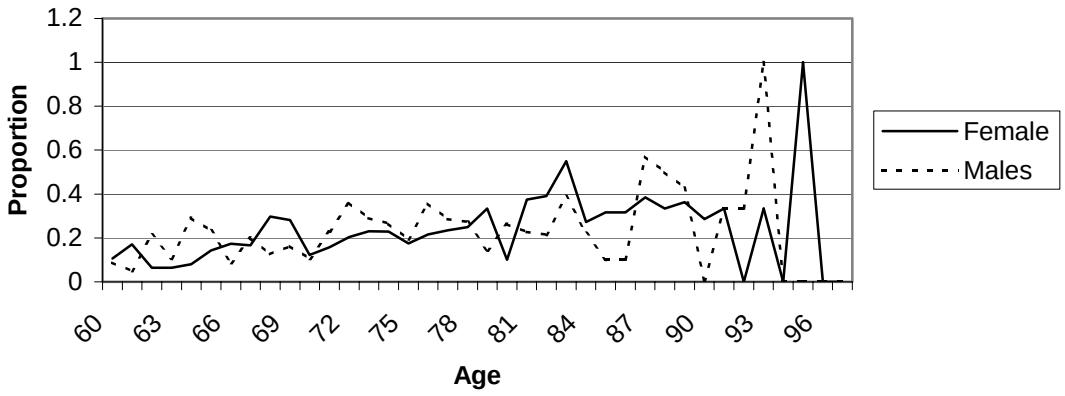


Figure 4.3. Proportion of older adults living alone, by sex and age, Sao Paulo (Brazil)

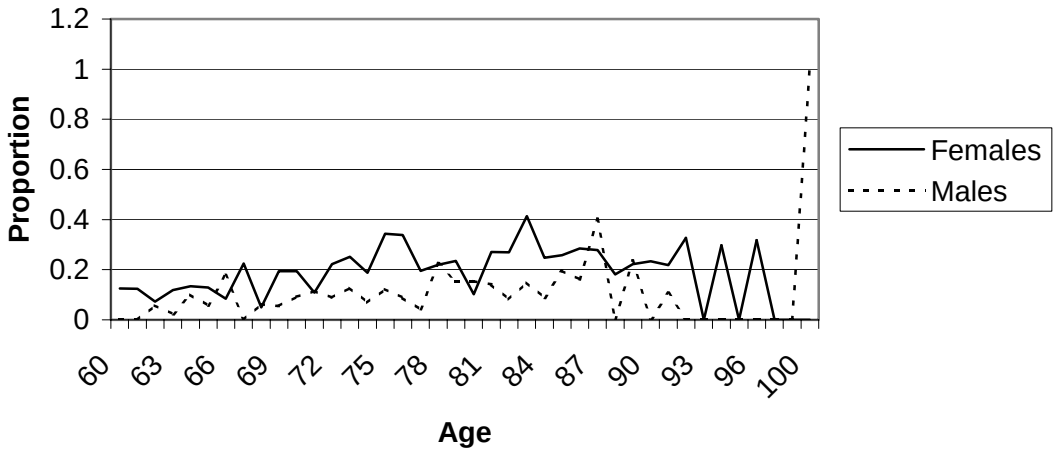


Figure 4.4. Proportion of persons living alone by sex and age, Santiago (Chile)

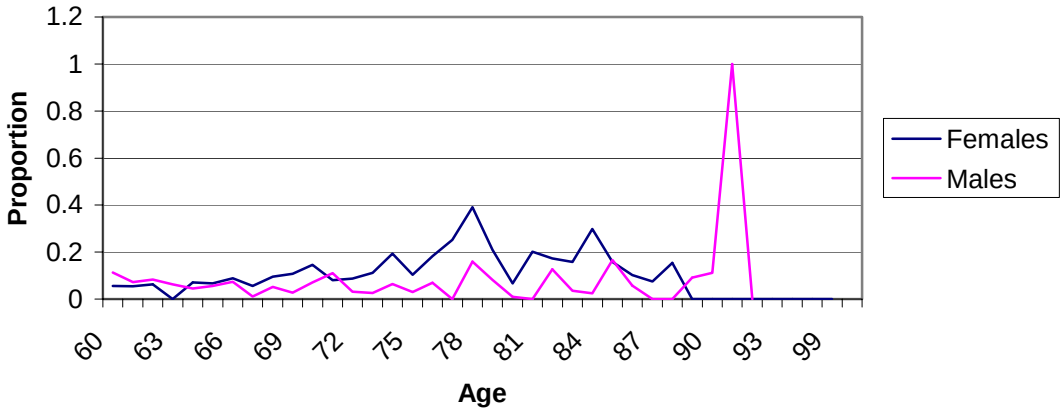


Figure 4.5. Proportion of older adults living alone, by sex and age, Havana (Cuba)

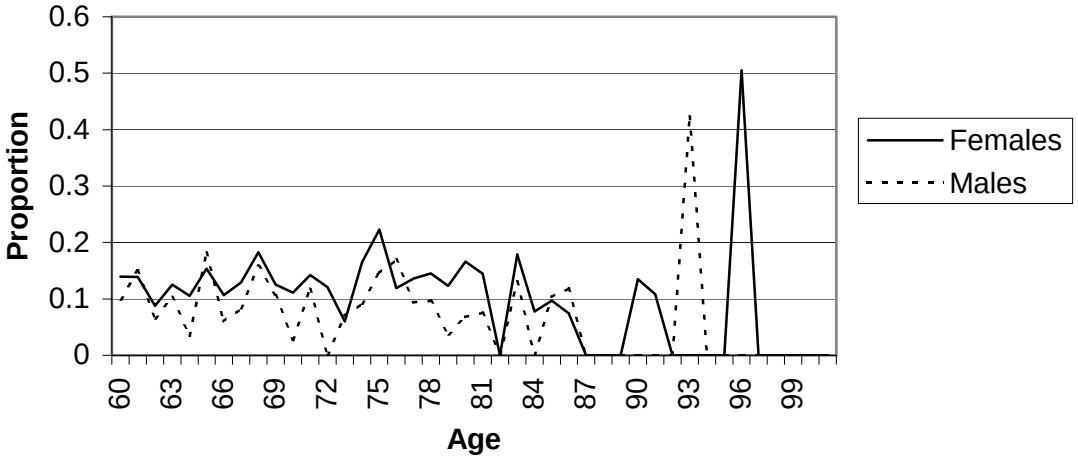
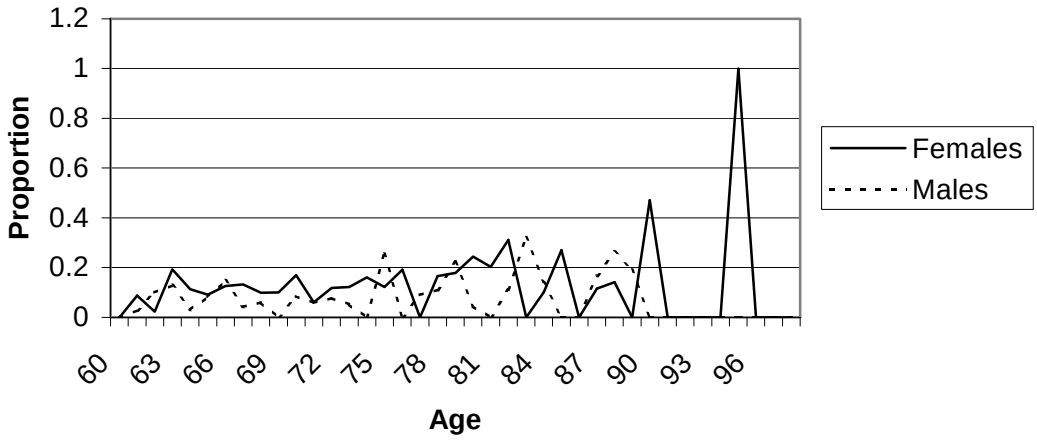
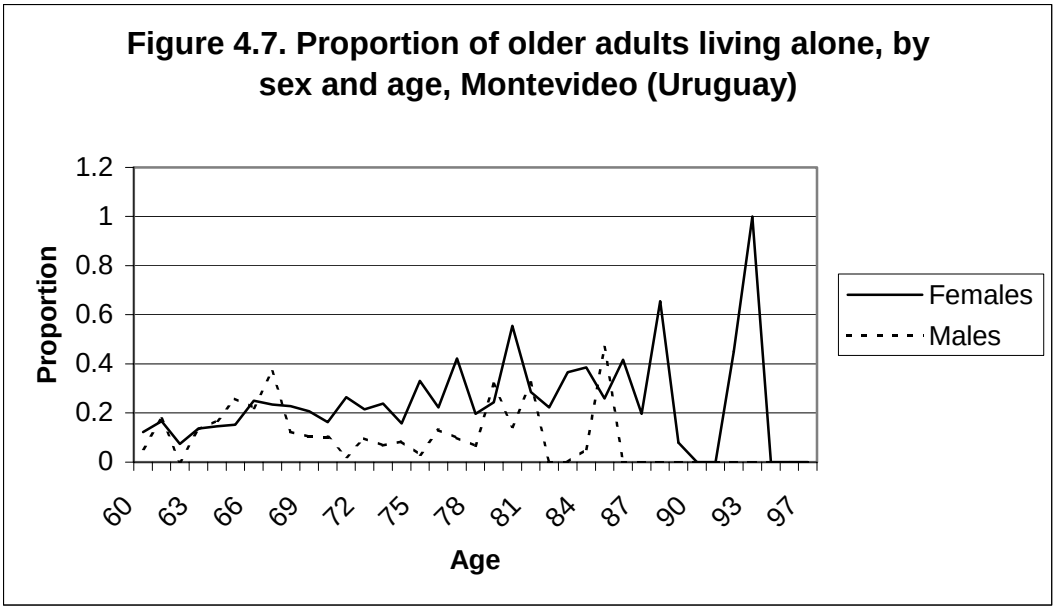


Figure 4.6. Proportion of older adults living alone, by sex and age, Mexico City (Mexico)





5. EDUCATIONAL LEVELS

Health status, labor force participation and living arrangements are known to depend in non-trivial ways on the educational status of the older adults. For this reason figures reflecting the distribution of elders by educational levels in all countries are presented. Three categories have been chosen: no schooling, primary or less, and secondary and more.

In all countries males experience higher levels of educational attainment than females, and older cohorts are generally more impaired than younger ones. The age pattern of educational inequalities is expected given the improvements in the educational systems that took place in the region beginning after World War II. But the most important feature is the large inter-country contrasts at all ages and for both genders. In Cuba, more than 50 percent of elders fall in the highest educated group, regardless of age and gender while in Brazil, less than 20 percent do so. These disparities reflect the existence of different institutions and policies that may have endowed individuals with different levels of education by facilitating and universalizing access to higher education.

The impact of individual educational disparities in health status and other characteristics of older adults remains to be investigated. But it should be borne in mind that the presence or absence of those institutions is highly correlated with the nature of the institutional context within which aging is taking place. The existence of educational systems that more efficiently promote higher education may be accompanied by the development of public resources that play in favor of elders in a number of dimensions unrelated to individual educational attainment. It is the task of the analyst to identify properly those effects that pertain to individual characteristics and those that belong to social contexts.

Table II.5: Level of education of older adults according to sex and age: study cities, 2001.

Level of education, sex and age	Buenos Aires (Argentina)	Bridgetown (Barbados)	Sao Paulo (Brazil)	Santiago (Chile)	Havana (Cuba)	Mexico City (Mexico)	Montevideo (Uruguay)
				Percent of population			
No schooling							
Female							
60-64 years	3.89	0.44	14.82	8.06	2.47	15.79	2.53
65-74 years	5.18	0.43	23.50	9.62	4.74	22.11	4.21
75 years +	2.53	1.53	33.10	17.43	7.66	27.10	8.08
Male							
60-64 years	0.00	0.00	13.04	3.38	1.92	12.15	2.79
65-74 years	3.00	0.00	17.34	9.79	3.56	17.54	1.06
75 years +	1.34	2.22	28.52	8.83	7.07	16.09	5.33
Primary							
Female							
60-64 years	58.22	65.78	68.12	62.33	42.69	64.32	62.90
65-74 years	68.76	77.17	66.90	55.58	55.29	55.21	67.35
75 years +	79.89	83.54	59.26	51.88	68.12	57.80	69.98
Male							
60-64 years	56.54	68.14	68.46	57.31	30.39	62.93	61.68
65-74 years	62.46	71.85	61.61	57.85	44.55	53.47	63.34
75 years +	62.30	81.11	58.89	52.41	56.31	63.61	68.74
Secondary and higher							
Female							
60-64 years	37.89	33.78	16.43	29.62	54.84	19.09	34.57
65-74 years	26.06	22.39	9.18	34.80	39.96	22.34	28.13
75 years +	17.58	14.94	6.88	30.69	24.22	15.51	21.13
Male							
60-64 years	43.46	31.86	18.50	39.31	67.69	24.47	35.54
65-74 years	34.54	28.15	20.76	32.36	51.89	28.21	35.60
75 years +	36.37	16.67	11.23	38.76	36.62	20.18	25.49

Source: PAHO. SABE Survey, 2001

6. PHYSICAL AND MENTAL HEALTH STATUS

Figures 6a-1 to 6a-7 display the age profile of individuals reporting themselves in poor or fair health ("salud mala" o "salud regular") separately for males and females. The observed fraction of individuals reporting to be in poor or fair health is rather flat with age except in the case of Bridgetown where there is a smooth increase. Figures (not shown) displaying the fraction of people reporting in poor health alone show a much sharper age profile. This suggests that the mixture of 'fair' and 'poor' health may reflect offsetting conditions: a decrease in the fraction reporting fair health is counterbalanced by an increase of those reporting poor health. But the net result is an invariant proportion reporting in the mixed category.

Of interest in the figures are two issues. First, the absolute levels of prevalence of poor-fair health as a rule quite high, higher than 60 percent. These are unusually high levels especially relative to comparable figures in North America and Western Europe (see Chapter 1, Section 1.2. (*citation*)There are many determinants of self-reported health, and cultural idiosyncrasies in self-perceptions is one of them. This warning not withstanding, the levels are uniformly high in countries whose cultural diversity is well known.

The second issue relates to gender disparities. In all SABE countries the male profile appears to be better than that for females. This is a feature of patterns of self-reports in other countries as well, and not a unique characteristic of the SABE data. But if self-reports do indeed reflect health problems, it is important to know that it is the subgroup with the lowest labor force participation, the highest levels of living alone and the lowest education and pension receipts that is experiencing simultaneously the worst self-reported health conditions.

The series of graphs included as Figures 6a-1 to 61-7 should be contrasted with those displaying the fraction of individuals with at least one ADL limitation (Figures 6b-1 to 6b-7). The presence and development of ADL limitations is known to follow the onset of chronic conditions and, as such, is an additional indicator of health status. Note that the age profile of people with at least one ADL limitation in Figure 7 follows a sharp age gradient, the same one followed by the proportion of people who self-report in poor health (not shown) and the one Figures 6a was expected to reflect. With the exception of Montevideo Uruguay, in all cities the fraction reporting at least one ADL limitation by age 70 exceeds 20 percent for both males and females. And in all countries males fare better than do females, thus confirming the pattern found with self-reported health.

As can be observed in Table II.6, hypertension, cardiovascular disease, arthritis and diabetes are, in that order, fairly prevalent among the older adults in SABE. There are important differences by gender, with women experiencing far more arthritis than do males, and sharp contrasts by countries, with Mexico City and Bridgetown Barbados experiencing much higher levels of diabetes than the other cities. Elsewhere, it has been shown that the prevalence of self-reported conditions such as cardiovascular diseases, arthritis and diabetes in SABE countries is higher than that reported by elders in North America (Ham and Palloni, 2002). Because the self-reported chronic conditions are those that a doctor or nurse has diagnosed and the older adult population in most of these countries receives much less and more erratic medical attention than

older persons elsewhere, (*citation*) the noted disparity is alarming as it suggest that actual prevalence could be even higher than what is seen from the SABE survey.

Finally, Figures 6c-1 to 6c-7 provide a unique view of a heretofore unknown dimension of elders in the region, namely the state of their mental health. This figure displays the fraction of elders with cognitive impairments (see Chapter 2, Section I). Note that the age curve rises steeply with age, that there are only minor gender differentials and trifling city contrasts. In all cities the prevalence of cognitive impairment is low up until age 75 or so after which it raises quite rapidly to levels around 20 percent. The data become rather shaky after age 80 or 85 due to small sample sizes and so little can be said about levels at those higher ages. However, the prevalence of mental impairment after age 75 (of 20 percent or more) is surprisingly high and deserves further consideration.

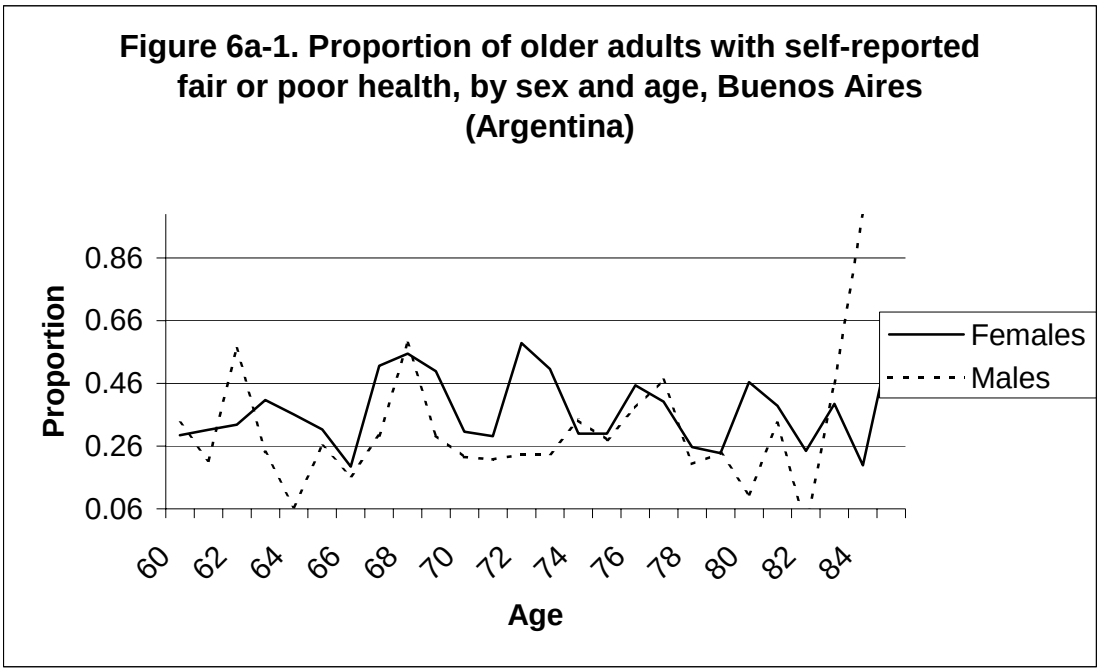


Figure 6b-1. Proportion of older adults with one or more ADL limitations, by sex and age, Buenos Aires (Argentina)

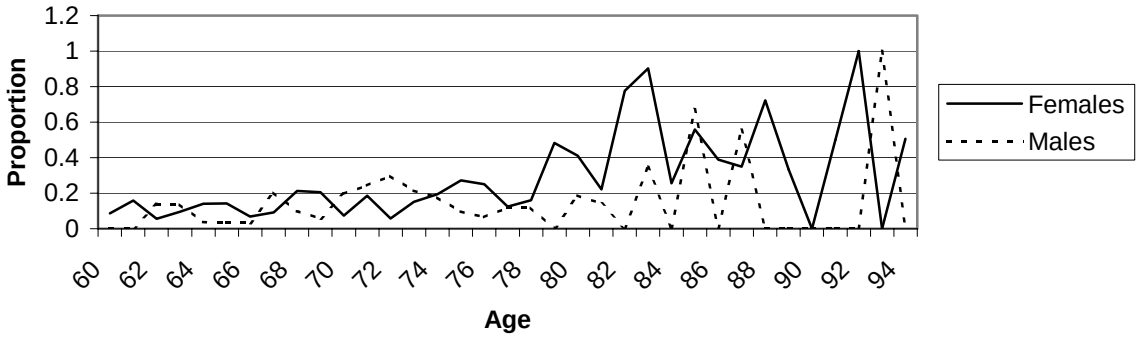


Figure 6a-2. Proportion of older adults with self-reported fair or poor health, by sex and age, Bridgetown (Barbados)

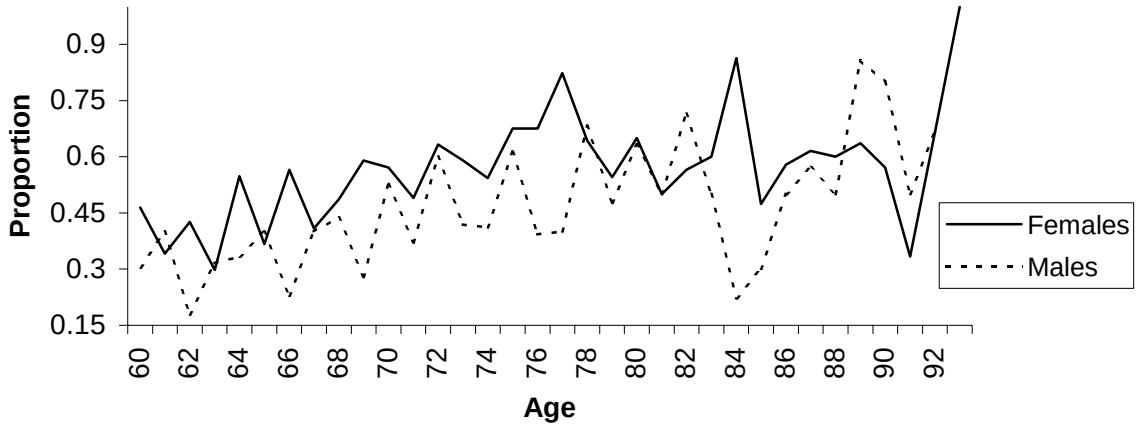


Figure 6b-2. Proportion of older adults with one or more ADL limitations, by sex and age, Bridgetown (Barbados)

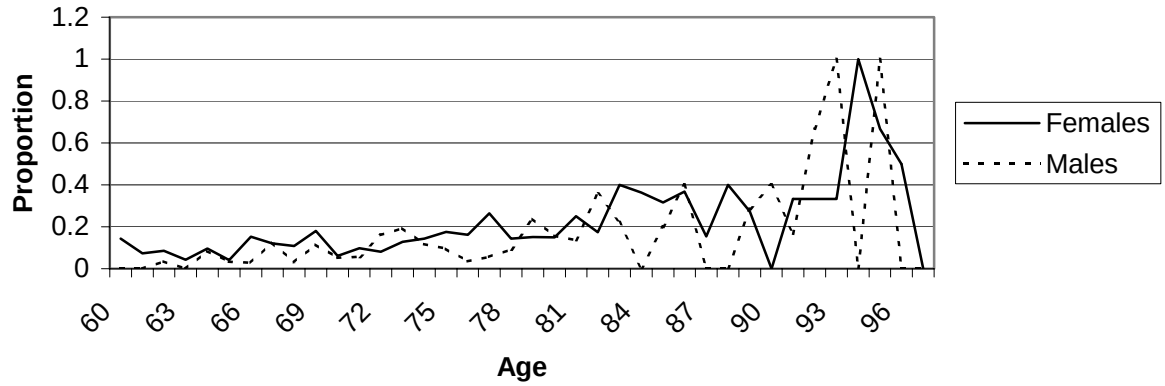


Figure 6a-3. Proportion of older adults with self-reported fair or poor health, by sex and age, Sao Paulo (Brazil)

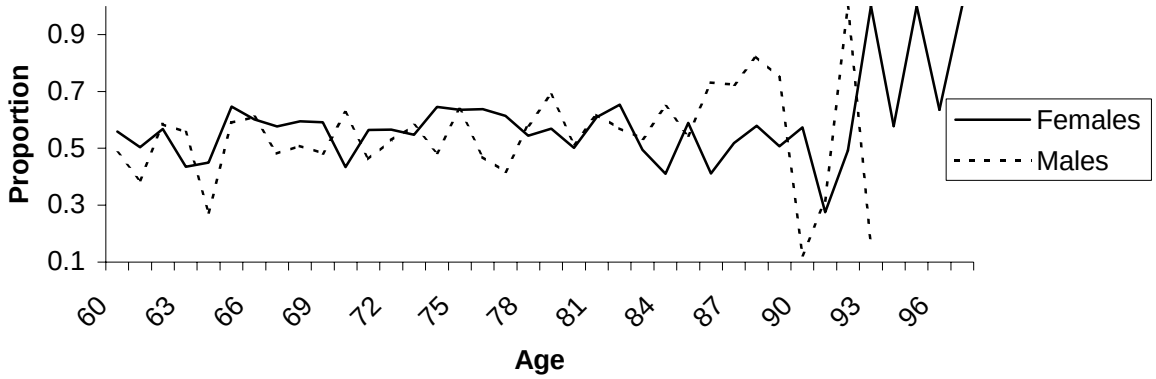


Figure 6b-3. Proportion of older adults with one or more ADL limitations, by sex and age, Sao Paulo (Brazil)

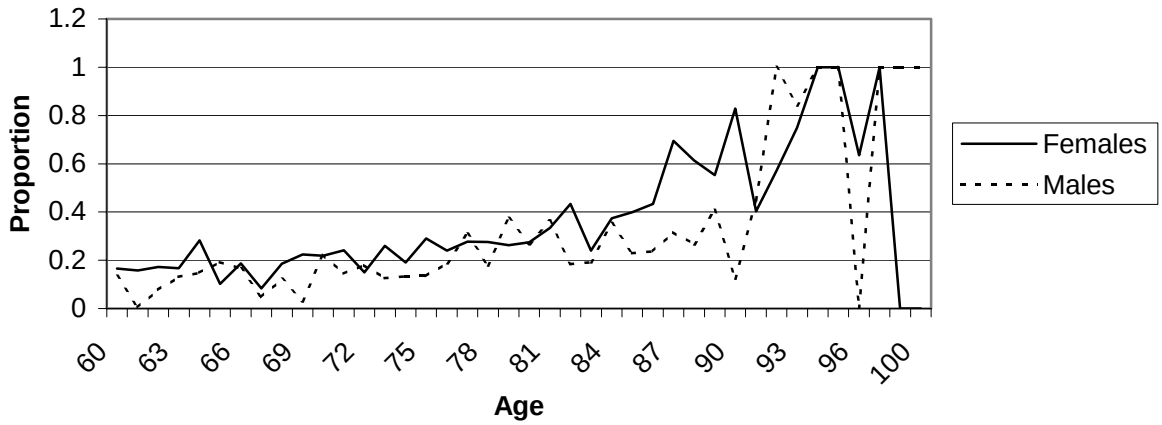


Figure 6a-4. Proportion of persons with fair or poor self-reported health conditions by sex and age, Santiago (Chile)

Figure 6b-4. Proportion of persons with one or more ADLs by sex and age, Santiago (Chile)

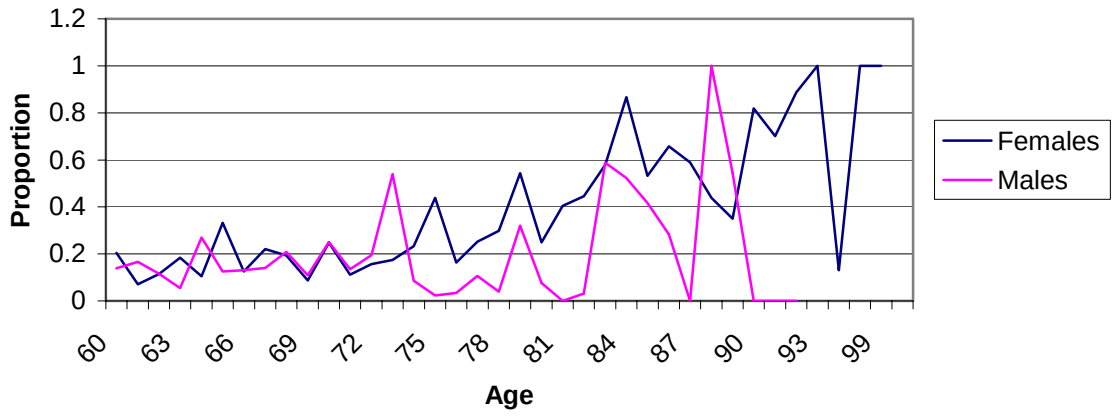


Figure 6a-5. Proportion of older adults with self-reported fair or poor health, by sex and age, Havana (Cuba)

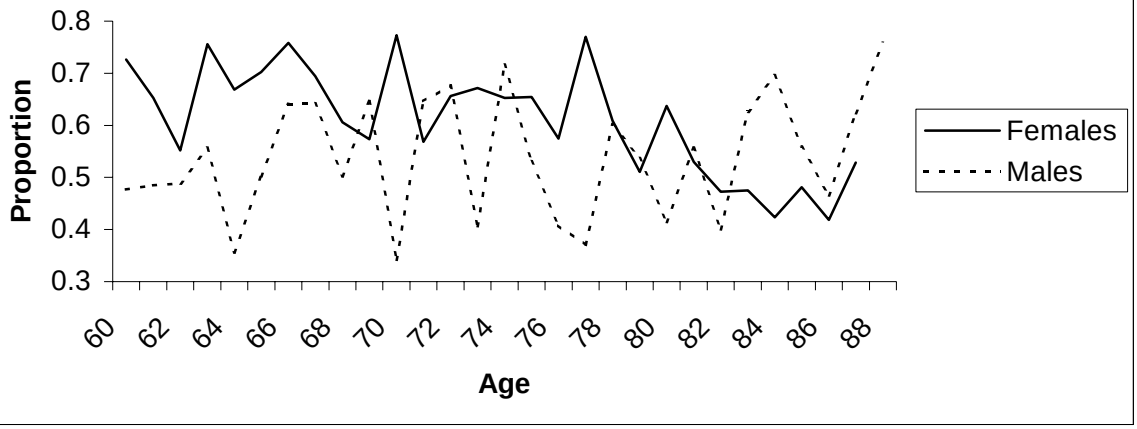


Figure 6b-5. Proportion of older adults with one or more ADL limitations, by sex and age, Havana (Cuba)

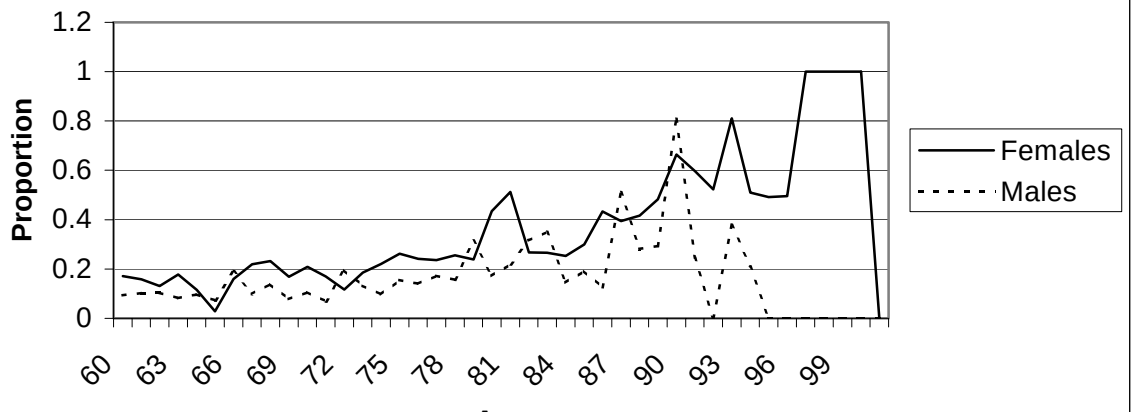


Figure 6a-6. Proportion of older adults with self-reported fair or poor health, by sex and age, Mexico City (Mexico)

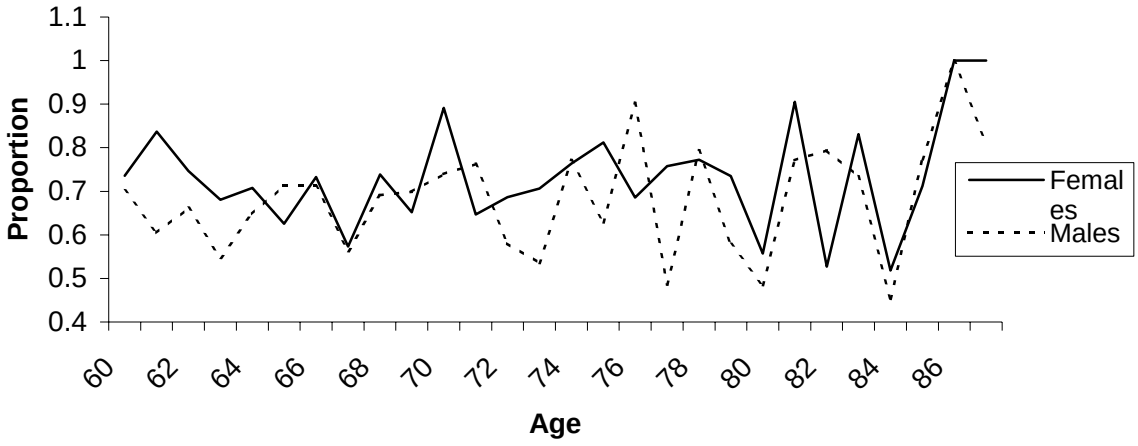


Figure 6b-6. Proportion of older adults with one or more ADL limitations, by sex and age, Mexico City (Mexico)

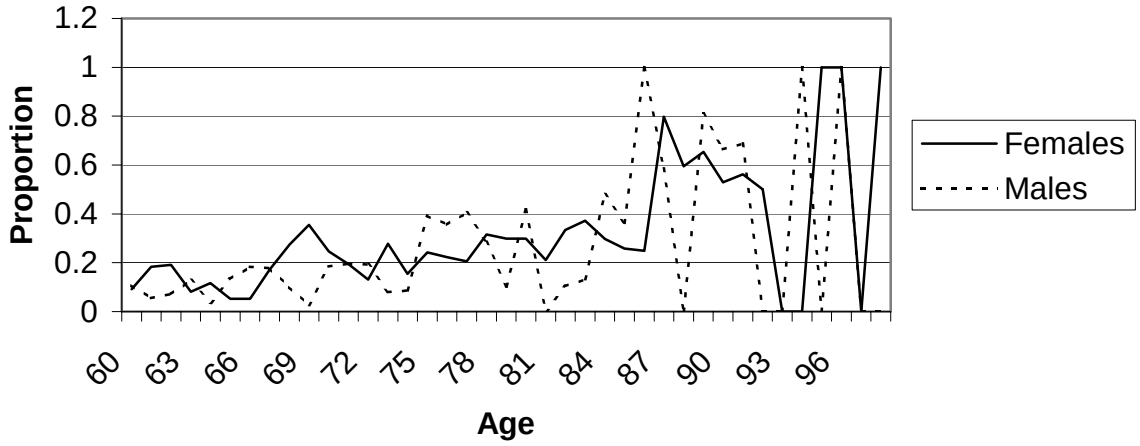


Figure 6a-7. Proportion of older adults with self-reported fair or poor health, by sex and age, Montevideo (Uruguay)

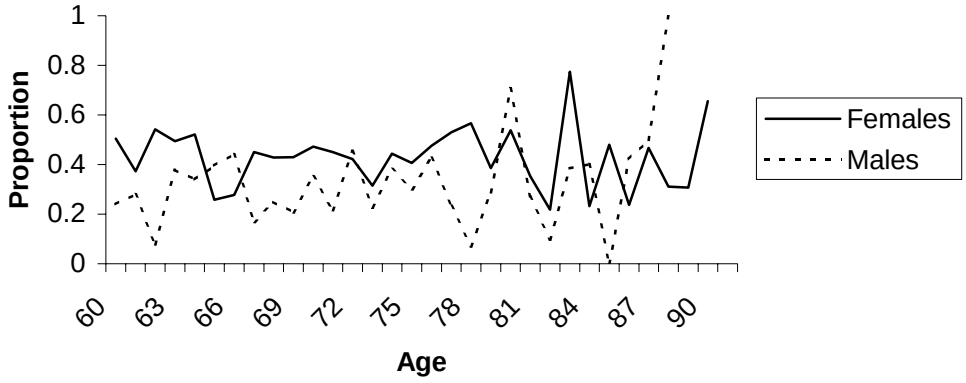


Figure 6b-7. Proportion of older adults with one or more ADL limitations, by sex and age, Montevideo (Uruguay)

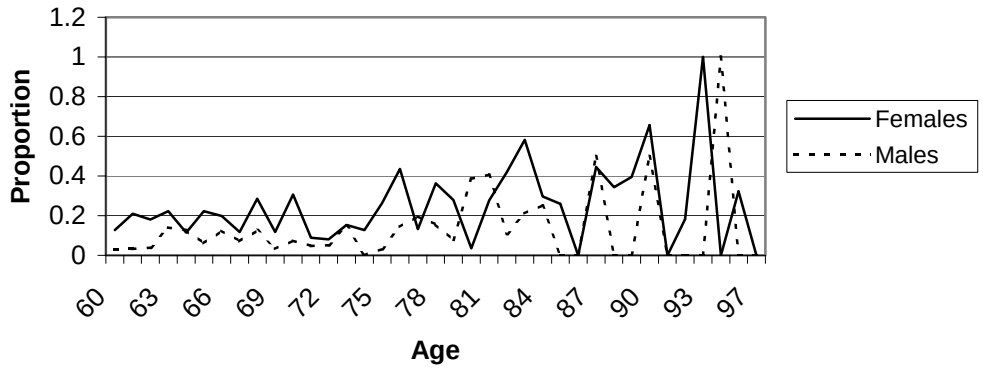


Table II.6. Older adults with selected chronic conditions according to sex and age: study cities, 2001.

Chronic condition, sex and age	B. Aires (Argentina)	Bridgetown (Barbados)	Sao Paulo (Brazil)	Santiago (Chile)	Havana (Cuba)	Mexico City (Mexico)	Montevideo (Uruguay)
				Percent of population			
Hypertension							
Female							
60-64 years	45.40	54.22	50.16	56.47	53.95	44.14	50.66
65-74 years	52.28	52.28	58.43	53.21	50.84	52.38	49.24
75 years +	52.41	50.88	60.22	56.69	45.26	47.99	49.03
Male							
60-64 years	48.11	35.96	44.15	41.36	43.26	38.08	38.02
65-74 years	46.69	36.73	54.06	47.47	37.67	33.09	39.76
75 years +	46.70	39.93	45.92	43.79	23.67	32.20	33.38
Diabetes							
Female							
60-64 years	7.36	27.11	18.28	13.90	16.96	19.65	12.90
65-74 years	12.97	24.13	19.81	16.16	19.85	21.32	15.97
75 years +	11.45	23.93	17.00	10.77	22.36	21.29	13.15
Male							
60-64 years	13.70	25.44	12.61	14.42	7.00	22.50	10.73
65-74 years	15.19	15.74	20.62	10.13	8.67	21.35	13.55
75 years +	11.65	19.41	14.93	11.48	5.26	24.14	11.49
Heart problems							
Female							
60-64 years	16.97	7.56	14.12	31.39	26.34	5.31	17.42
65-74 years	18.43	9.57	19.29	33.87	26.47	12.86	22.00
75 years +	21.92	16.62	24.02	39.61	26.47	10.66	32.89
Male							
60-64 years	18.48	10.53	15.19	21.38	14.63	9.41	10.09
65-74 years	18.61	10.50	22.65	35.30	21.06	6.81	25.21
75 years +	18.61	14.29	24.66	22.93	21.53	17.04	26.72
Cancer							
Female							
60-64 years	7.49	4.00	3.05	7.34	2.95	3.08	8.79
65-74 years	5.30	4.78	2.92	3.35	2.62	2.45	7.84
75 years +	5.99	3.27	4.96	7.51	5.19	1.90	5.37
Male							
60-64 years	3.04	0.88	1.03	1.36	3.07	0.52	1.85
65-74 years	5.51	2.04	4.25	2.11	2.23	0.81	5.48
75 years +	2.20	4.40	3.98	1.56	4.30	2.42	4.40
Arthritis							
Female							
60-64 years	55.57	48.89	33.32	32.50	68.38	24.96	60.11
65-74 years	63.94	58.26	41.96	40.68	66.87	31.60	54.47
75 years +	64.97	59.70	43.26	44.54	65.45	36.71	59.43
Male							
60-64 years	30.74	24.56	16.79	11.39	40.43	14.10	26.18
65-74 years	38.58	31.49	22.36	15.07	41.31	16.54	30.89
75 years +	37.39	36.26	23.13	11.90	35.63	17.73	38.15

Lung diseases							
Female							
60-64 years	2.44	2.22	12.89	6.64	16.94	8.94	8.75
65-74 years	5.98	6.09	9.21	10.66	12.15	9.89	7.33
75 years +	9.95	5.04	9.21	14.54	10.26	15.40	9.57
Male							
60-64 years	9.51	1.75	14.14	14.56	13.75	6.01	26.18
65-74 years	10.82	1.75	14.14	9.10	13.75	8.22	30.89
75 years +	9.80	4.76	16.44	20.00	11.07	11.65	38.15

Source: PAHO. SABE Survey, 2001

Figure 6c-1. Proportion of older adults with cognitive impairment, by sex and age, Buenos Aires (Argentina)

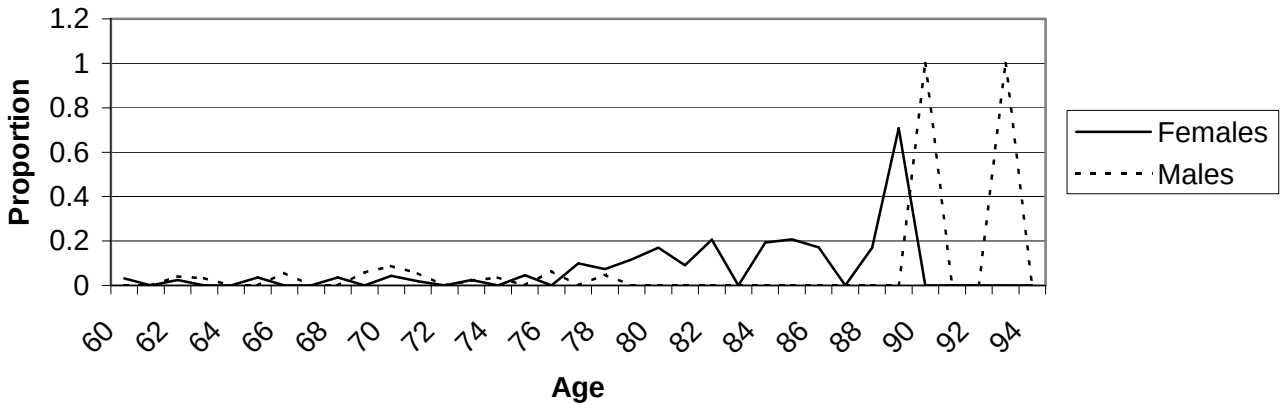


Figure 6c-2. Proportion of older adults with cognitive impairment, by sex and age, Bridgetown (Barbados)

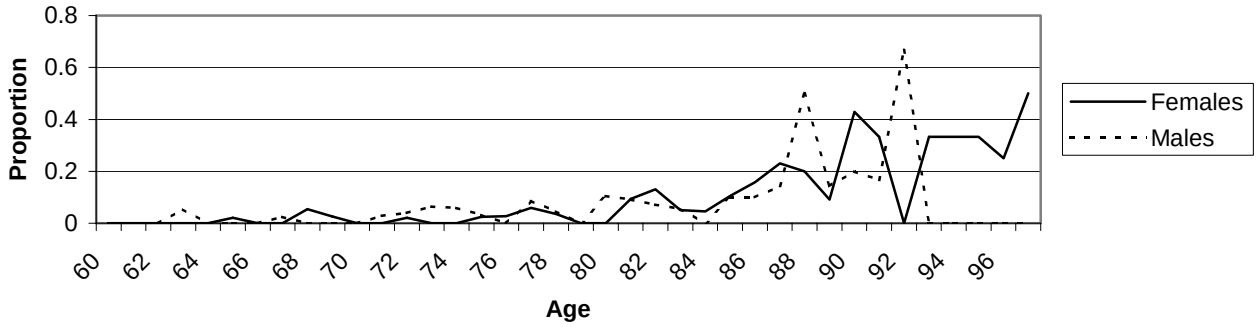


Figure 6c-3. Proportion of older adults with cognitive impairment, by sex and age, Sao Paulo (Brazil)

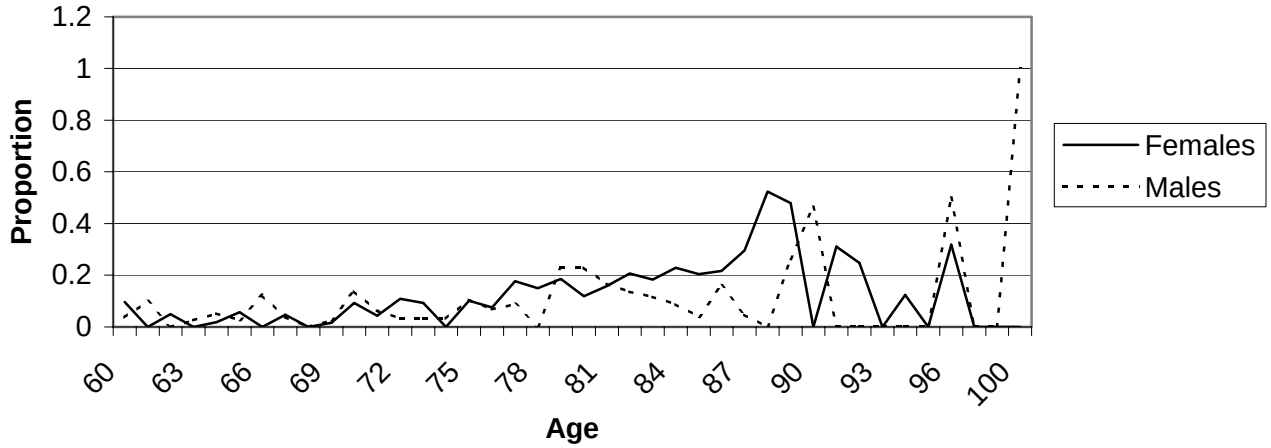


Figure 6c-4. Proportion of persons with cognitive impairment by sex and age, Santiago (Chile)

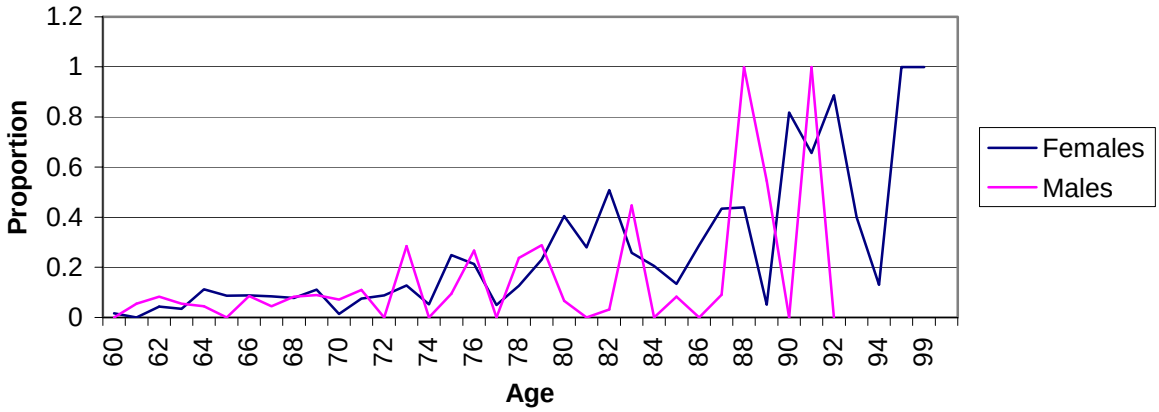


Figure 6c-5. Proportion of older adults with cognitive impairment, by sex and age, Havana (Cuba)

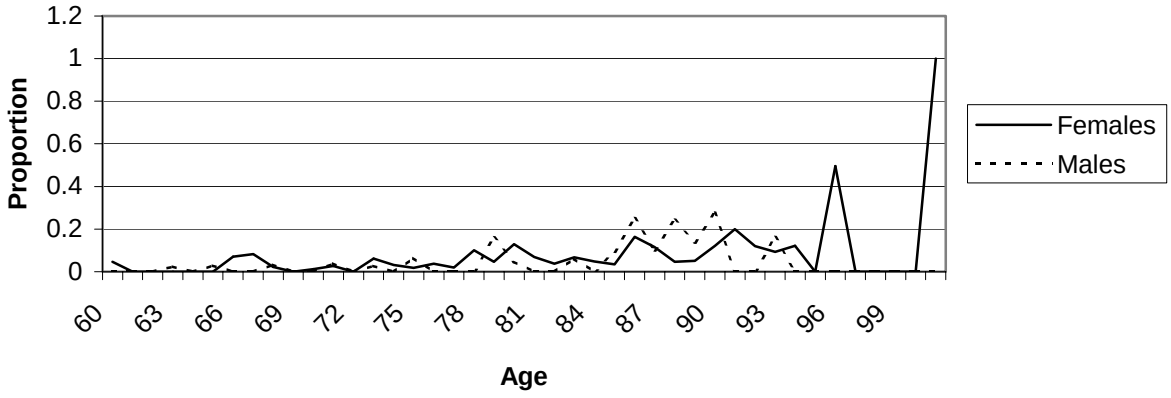


Figure 6c-6. Proportion of older adults with cognitive impairment, by sex and age, Mexico City (Mexico)

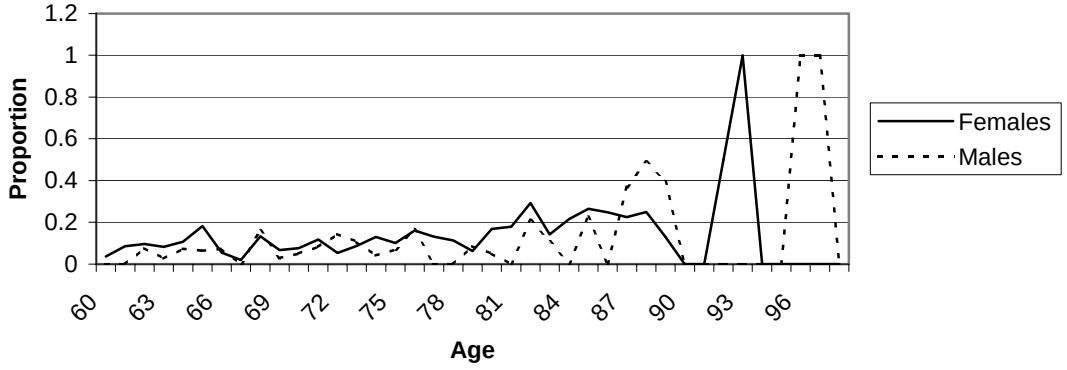
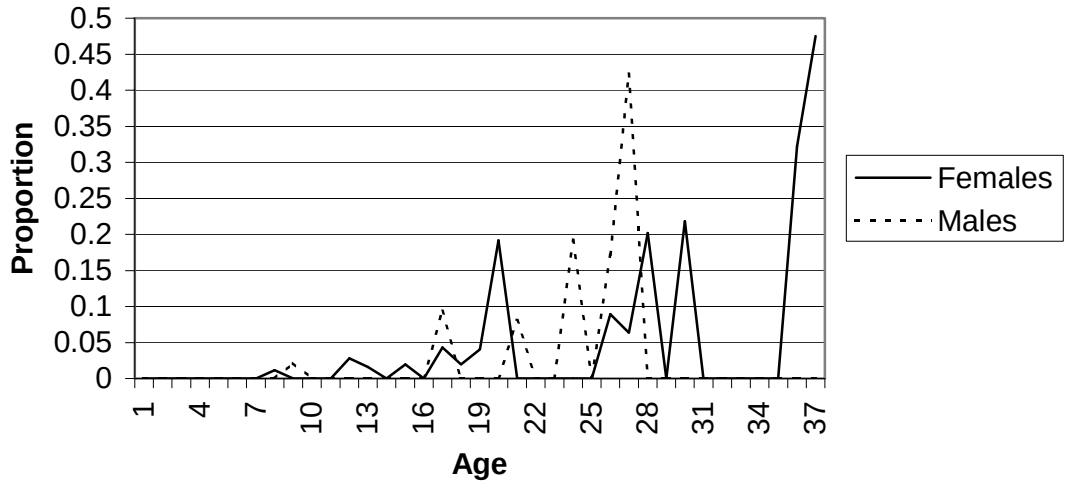


Figure 6c-7. Proportion of older adults with cognitive impairment, by sex and age, Montevideo (Uruguay)



7. HELP RECEIVED

Figures 7.1 to 7.7 display the fraction of older people who report receiving any help (financial and otherwise) from others (including relatives and friends). Without exception, less that 15 percent of all elders do so and there is little if any disparity by country, age or gender. This is a quite remarkable and unexpected finding. It implies one of three possibilities.

The first is that the data reflect a low demand for help and assistance. This is unlikely since, if anything, as health deteriorates and labor force participation becomes less likely, demand for help should increase in societies with fragile regimes of social support. Much larger disparities across countries and much higher variability with age would be seen than what was actually observed in the data.

The second possibility is that older people under-report assistance from others. Even if this were true, it would be important to account for the rather remarkable uniformity across countries, age and gender: it is highly unlikely that underlying patterns will be diverse but distorted by misreporting in all countries in the same way.

The third and most likely explanation is that the demand is quite high but time or economic constraints on those who are capable or willing to provide assistance are even larger. Additional in-depth analyses of the data should prove fruitful to answer these and related queries.

Figure 7.1. Proportion of older adults receiving help from family and friends, by sex and age, Buenos Aires (Argentina)

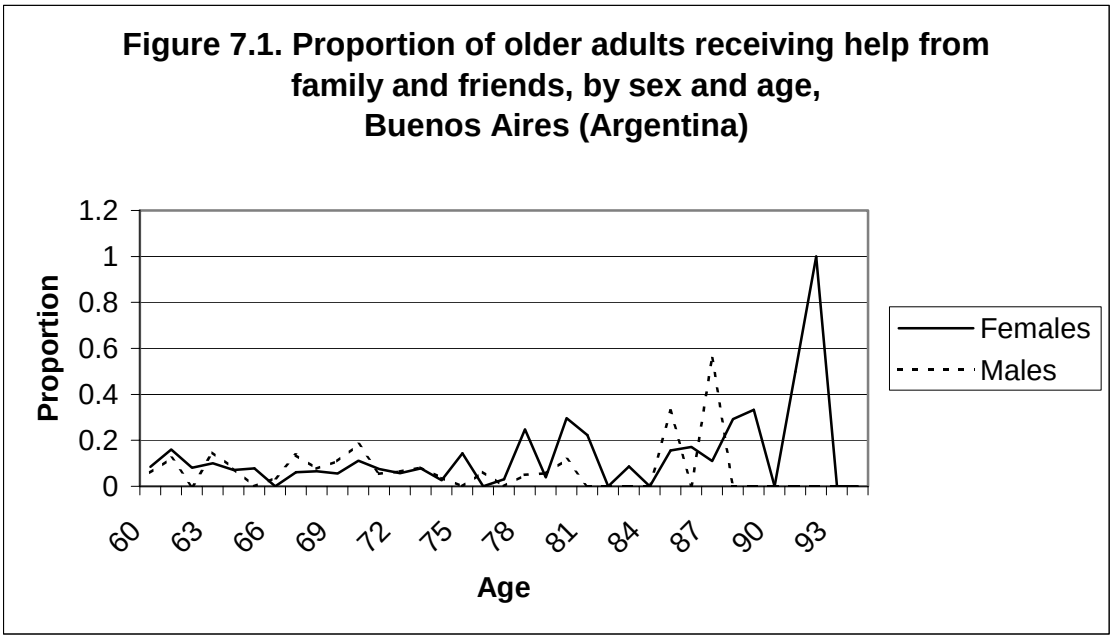


Figure 7.2. Proportion of older adults receiving help from family and friends, by sex and age, Bridgetown (Barbados)

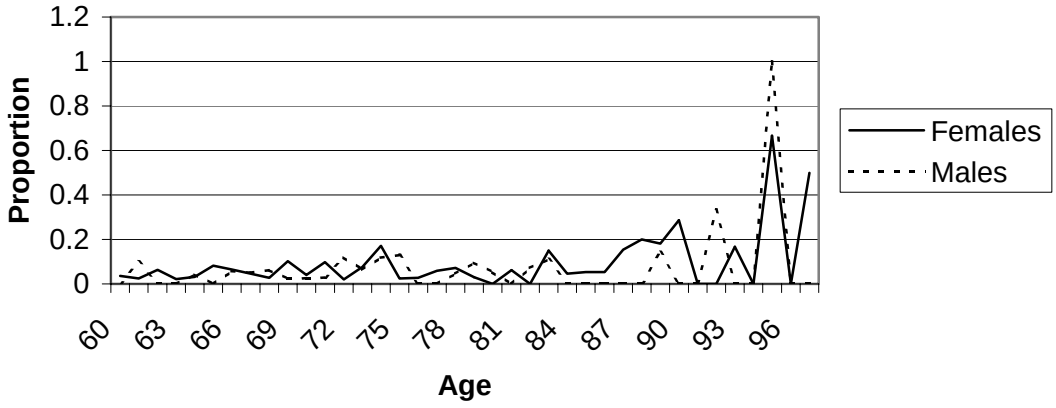


Figure 7.3. Proportion of older adults receiving help from family and friends, by sex and age, Sao Paulo (Brazil)

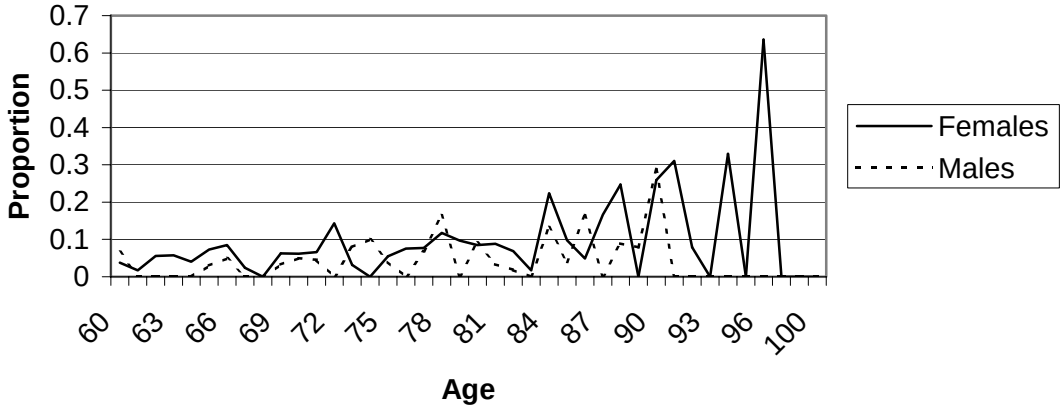


Figure 7.4. Proportion of persons receiving help from friends and other relatives by sex and age, Santiago (Chile)

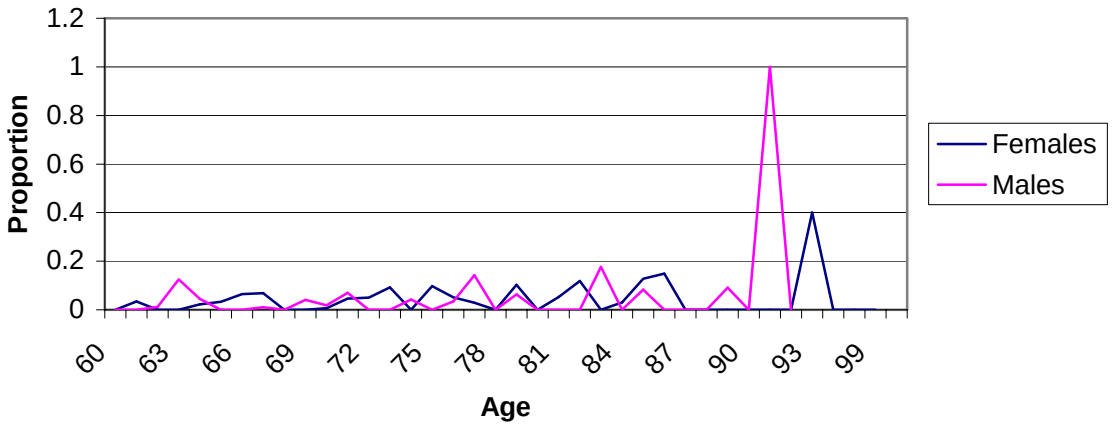


Figure 7.5. Proportion of older adults receiving help from family and friends, by sex and age, Havana (Cuba)

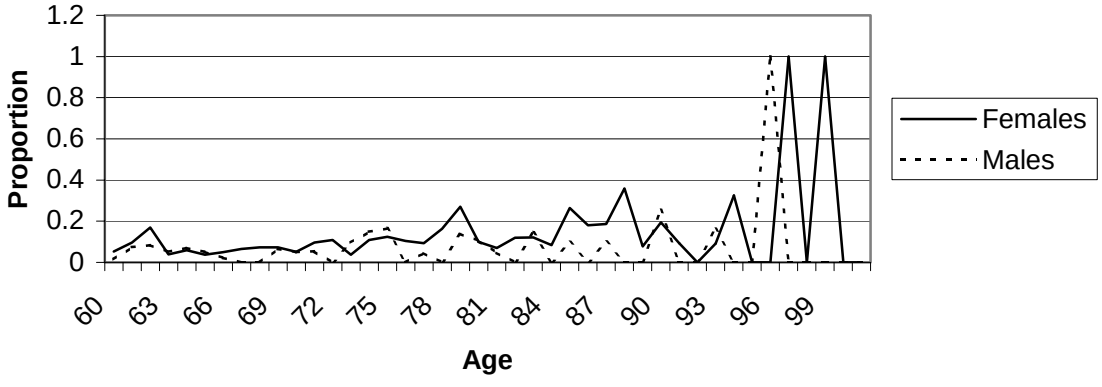


Figure 7.6. Proportion of older adults receiving help from family and friends, by sex and age, Mexico City (Mexico)

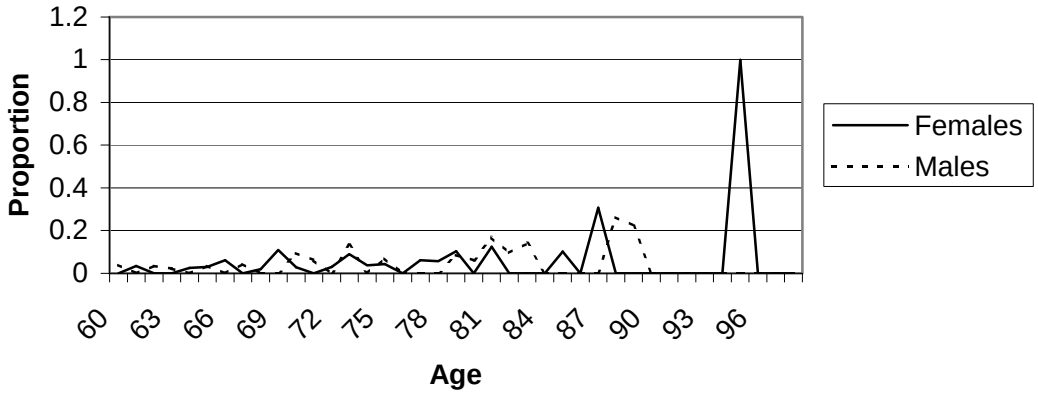
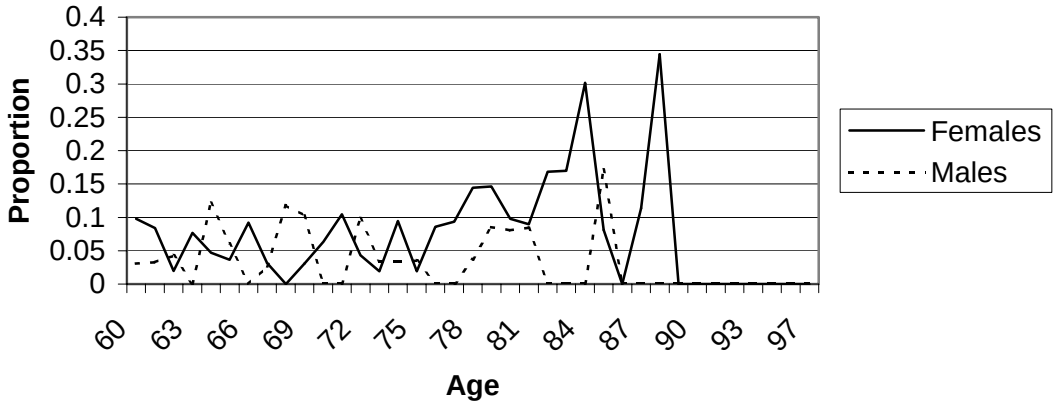


Figure 7.7. Proportion of older adults receiving help from family and friends, by sex and age, Montevideo (Uruguay)



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