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Estimating diabetes and diabetes-free life expectancy in Mexico and seven major cities in Latin America and the Caribbean

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Abstract

Objectives—To estimate diabetes and diabetes-free life expectancy in seven major cities in Latin America and the Caribbean, plus Mexico as a whole.

Methods—Data from the Health, Well-being, and Aging in Latin America and the Caribbean project (n = 10 602) and Mexican Health and Aging Study (n = 6 953) on individuals 60 or more years of age were used in this study. Estimates of diabetes and diabetes-free life expectancy were obtained by applying the Sullivan method.

Results—Diabetes life expectancy for men 60 years of age was highest in Mexico City (4.5 years) and Bridgetown (3.4 years), and lowest in Havana (1.3 years). Diabetes-free life expectancy for men 60 years of age was highest in Santiago (17.6 years) and lowest in Bridgetown (14.2 years) and São Paulo (14.3 years). For women, diabetes life expectancy was highest in Bridgetown (5.4 years), followed by Mexico City and Havana. Bridgetown, Mexico City and Havana had the lowest diabetes-free life expectancy. Women 60 years of age in Buenos Aires had the lowest diabetes life expectancy (2.5 years), and in Santiago, the highest, with a diabetes-free life expectancy of 20.7 years.

Conclusions—Older individuals in Latin America and the Caribbean can expect to live a large proportion of their remaining lives with diabetes. There were also important differences across settings; in particular, the pronounced diabetes burden in Barbados and Mexico and among women. Given the fast growth of the elderly population in these societies, it is crucial to promote healthy eating and exercising as a way of reducing the burden of diabetes.

Keywords

Diabetes mellitus; data analysis; life expectancy; Latin America; Caribbean Region; Mexico

During the last 50 years, life expectancy at birth in Latin America has increased from 52 years to almost 72, with further increases expected in the next decades (1). Moreover, since the elderly population is growing faster than the younger, the percentage of those 65 or more years of age is expected to rise from its current 5.5% to 10% by 2025 (1). Therefore, a

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pressing concern is whether or not increases in life expectancy will imply better health for a larger, aging population.

Along with the demographic transition, epidemiologic and nutritional transitions are underway (2–8). Noncommunicable diseases are becoming increasingly more important and obesity is on the rise in Latin America and the Caribbean. One of the fastest growing diseases is diabetes, which in 1995 had a prevalence rate of 5.7% among the general population; by 2025, it is expected to reach 8.1% (9). That is, the number of cases in Latin America will rise from 15 million in 1995 to 39 million in 2025 (9), with 50% in Brazil and Mexico. Diabetes prevalence among the elderly is even higher. Current estimates indicate that in Latin America and the Caribbean there are more than 5 million adults 60 years of age and over with diabetes (9).

The relatively high prevalence of diabetes in Latin America and the Caribbean imposes high costs for its populations. Barceló and colleagues (10) estimate a total annual diabetes-associated cost of more than US$ 65 billion. The indirect costs contributed 82% of the overall cost. Indirect costs include over 330 000 deaths occurring in the year 2000 (over 757 000 years of productive life lost) and approximately 178 000 individuals with permanent disability (over 136 000 years of productive life lost). However, in geographic areas as diverse as Latin America and the Caribbean, prevalence levels are hardly homogeneous (11, 12). Diabetes prevalence rates are generally higher in urban settings and among women and older people (13, 14), and increase parallel to the rise in obesity (4, 15–17). The area's obesity prevalence is more marked in the lower socioeconomic strata, urban settings, and among women (14, 15, 18, 19).

Previous studies have estimated the prevalence of chronic conditions, diabetes in particular, based on two surveys of seven major cities in Latin America and the Caribbean: Survey on Health and Wellbeing of Elders (Salud, Bienestar y Envejecimiento en América Latina y el Caribe, SABE) and the Mexican Health and Aging Study (Estudio Nacional sobre Salud y Envejecimiento en México, MHAS) (12, 20–22). The goal herein is to provide diabetes and diabetes-free life expectancy estimates for seven major cities in Latin America, the Caribbean and Mexico, by applying the Sullivan method to SABE and MHAS data for the first time These estimates allow for a better understanding of the disease burden from diabetes–in terms of years lived with and without the disease–in this area of the world.

MATERIALS AND METHODS

Prevalence data

Data on self-reported diabetes prevalence in seven major cities in Latin America, the Caribbean and Mexico come from SABE and MHAS. Both samples include detailed information on demographics and diabetic health status. In both surveys, individuals were asked if they had ever been told by a doctor that they have diabetes. Those responding affirmatively received additional questions on the use of oral medication, insulin injections, and diet.

SABE was a multicenter project that surveyed the health and well-being of older individuals (60 or more years of age), and in some cases, of the surviving spouse, in seven capital/major cities: Buenos Aires, Argentina; Bridgetown, Barbados; São Paulo, Brazil; Santiago, Chile; Havana, Cuba; Mexico City, Mexico; and Montevideo, Uruguay (23, 24). The general survey was funded and supported by the Pan American Health Organization (Washington, D.C., United States), Center for Demography and Ecology, University of Wisconsin-Madison (Madison, W.I., United States) and National Institute on Aging (Bethesda, M.D., United States). In each country, international and national institutions contributed to the project.

The questionnaire design was intentionally geared toward producing information that could be compared across countries. In particular, the aim was to include modules and sections modeled after the Health and Retirement Study (HRS) conducted in the United States (25). A standardized questionnaire was used to collect detailed information through face-to-face interviews. Samples were drawn using multistage clustered sampling with stratification of the units at the highest levels of aggregation. Detailed information on sample selection is presented elsewhere (26).

The initial sample was composed of 10 602 individuals who were 60 or more years of age. Fifty-seven (0.54% of the sample) were excluded because they did not answer the question regarding a prior diabetes diagnoses. There were no age or sex differences between those who answered the question and those who did not. Of those who answered the question, 8 782 did not have a previous diabetes diagnoses and 1 763 did. Five individuals had missing values on the sample weight variable and were excluded. The final sample was composed of 10 540 individuals; the mean age was 70.2 years of age (weighted estimates) and females accounted for 59.7% of the sample. Among the diabetics, the mean age was 70 years and females, 59.3%. For non-diabetics, the mean age was 70.2 years and females, 59.8%.

MHAS was a prospective two-wave panel study of a nationally representative cohort of Mexicans born prior to 1951 (50 years or more). The survey has national and urban/rural representation. The baseline interview was conducted in 2001, and the second wave in 2003. In 2001, individuals 50 or more years of age and their surviving spouses/partners, regardless of their age if residing in the same household, were interviewed. Data collection was done in collaboration with the Instituto Nacional de Estadística y Geografía, INEGI (National Institute of Statistics and Geography in Mexico). The study was designed with field protocol and content similar to that of HRS. Data were collected based on face-to-face interviews with the target individuals or proxy respondents. Detailed information is presented elsewhere (23, 27).

Only data obtained during the first wave of the MHAS were used in this study. A total of 15 144 complete interviews were obtained (94.2% response rate at the household level). From the initial 15 144, there were 7 988 excluded due to being less than 60 years of age. Another 203 individuals who did not report their diabetic status at baseline were also excluded. The final sample was composed of 6 953 individuals 60 or more years of age with complete information on age, sex, and diabetic status. There were no age differences between those with complete and those with incomplete information on diabetic status, but more males

than females lacked this information. Of the final sample (6 953), the mean age was 69.8 years (weighted estimate) and females accounted for 53%. Among the diabetics, the mean age was 69.4 years and females, 58.9%. Among non-diabetics, the mean age was 69.9 years and the females, 51.4%.

Prevalence estimates were obtained taking into account the complex survey design and the need for results that could be generalized to the SABE and MHAS populations. This study used STATA SE 9.0 software (StataCorp LP, College Station, Texas, United States) and applied SABE and MHAS weights in all analyses. All reported *P* values are 2-sided.

Mortality data

Mortality data were obtained from official sources, except for Havana. Data for Buenos Aires were obtained from the "Anuario Estadistico" for the years 2000 and 2001, and deaths from both years were averaged. Population estimates for Buenos Aires were obtained from the Instituto Nacional de Estadísticas y Censos (National Institute for Statistics and Census, Argentina) based on census data (28, 29). Data were not available from Bridgetown, so the 2001 life table produced by World Health Organization (WHO) for Barbados was used for Bridgetown (30). Using the Barbados life table was justifiable since, according to the Pan American Health Organization (PAHO), 37% of the total population lives in Bridgetown. For the São Paulo metropolitan area, population data were obtained from Brazil's national census bureau and mortality data from the data analysis foundation that analyzes relevant social, demographic, and economic data for the state (31). Data for Santiago came from life tables for the period 2001–2002 published by the Chile's national population bureau; they were disaggregated by sex and regions (32). Life tables for Havana were created by the Center of Population and Development Studies (CEPDE) of the National Statistics Office in Cuba[1]. The life table for Mexico was obtained from the WHO website, while the life table for Mexico City uses data from the country's national population bureau, the Consejo Nacional de Población (33). The life table for Montevideo refers to the year 2000 and was published by the Uruguayan population bureau on its website (http://www.ine.gub.uy) (34).

Statistical methods

The Sullivan method was used to estimate the diabetes and diabetes-free life expectancy based on prevalence data from SABE and MHAS 2001. The Sullivan method is the most widely used method to estimate population health indicators. It is based on a standard life table with two states (alive and dead). The "alive" state is subdivided into healthy and diseased/disabled using observed prevalence of disease (35–37). The main inputs are: age-specific prevalence of the population in the healthy and diseased states, and age-specific mortality rates. Data were also disaggregated to include the covariate sex. The Sullivan method provides estimates of the general burden of diabetes in terms of years lived with and without diabetes.

[1]Life tables for Havana were provided by Dr. Esther Maria Leon Diaz, SABE co-investigator in Cuba. (Personal communication, May, 2006).

The Sullivan method provides estimates of diabetes-free life expectancy (DFLE), and diabetes life expectancy (DLE). Total life expectancy is therefore the sum of healthy (non-diabetic) and unhealthy (diabetic) years of life. Both DFLE and DLE are independent of the age structure of the population. DFLE and DLE can be obtained using the following equations (34):

$$DFLEx_x = \frac{1}{l_x} \sum_{i=x}^{w} L_i(DF)$$
$$DLE_x = \frac{1}{l_x} \sum_{i=x}^{w} L_i(D)$$

Where $L_i(DF)$ and $L_i(D)$ are the number of person years lived from age *x* onwards in the diabetes-free (DF) and diabetic (D) states, respectively. Given the hypothesis that the number of person years lived from age *x* onwards in the diseased state is proportional to the prevalence of diabetes at age *I* (π_i), we have:

$$L_i(D) = \pi_i L_i$$

Therefore, DFLE and DLE formulas can be rewritten as:

$$DFLE_x = \frac{1}{l_x} \sum_{i=x}^{w} (1-\pi_i) L_i$$
$$DLE_x = \frac{1}{l_x} \sum_{i=x}^{w} \pi_i L_i$$

DFLE incorporates a dichotomous weighting in which ‘one’ is ascribed to perfect health and ‘zero’ to the diseased and death statuses (36).

RESULTS

Bridgetown and Mexico City had the highest self-reported prevalence rates of diabetes mellitus in 2000. In Bridgetown, self-reported prevalence of diabetes among individuals 60 or more years of age was 21.7% (95% Confidence Interval (95%CI) = 19.6–23.8); in Mexico City, it was 21.6% (95%CI = 19.3–23.9). There was no statistical difference between these two cities. São Paulo had an intermediate rate, 18% (95%CI = = 16.1–19.9). Buenos Aires, Havana, Montevideo, and Santiago had the lowest rates of self-reported diabetes: Buenos Aires, 12.4% (95%CI = 10.2–14.5); Havana, 14.8 (95%CI = 13.1–16.4); Montevideo, 13.3% (95%CI = 11.7–15.7); and Santiago, 13.7% (95%CI = 10.8–15.8%).

In Mexico, self-reported prevalence rates in 2001 were higher in urban settings than in rural ones: 21% (95%CI = 18.6–23.5%) versus 13.5% (95%CI = 11.2–15.9). Overall rates for Mexico were lower than that of Mexico City, reinforcing the evidence that large urban areas may have higher prevalence rates than smaller ones and rural areas. Prevalence rates in some of these areas were as high or higher than that of the United States and the rate of increase was twice as high (9, 22). Using SEGI and WHO standard populations to obtain age

standardized rates does not change these analyses (results available from the authors upon request).

Data from SABE indicate that there are no statistical differences in self-reported diabetes prevalence rates between males and females in São Paulo and Santiago. In Bridgetown and Montevideo, women were more likely to report diabetes than men (23.6% vs. 18.7% and 14.5% vs. 12.4%, respectively). In Havana, there was a significant difference in self-reported diabetes between women and men, 20% vs. 7.3%, respectively. On the other hand, in Buenos Aires and Mexico City, women were less likely to report having diabetes than men. In Buenos Aires 11.4% of women and 14% of men 60 or more years of age reported having diabetes. In Mexico City, 21% of women and 22.4% of men aged 60 or over reported the condition. The finding that women in Mexico City were less likely to report being diabetic contrasts with a higher prevalence of diabetes among women in Mexico (TABLE 1). Age differentials between males and females do not explain the differences in prevalence rates (results available upon request).

At 60 years of age, the total life expectancy (see Table 2) for men ranged from 17.2 years in São Paulo to 20.4 years in Mexico in the period 2000–2001. Life expectancy at age 60 for women was also lowest in São Paulo at 21.9 years, but highest in Santiago at 24.0 years.

As a result of high prevalence rates, at 60 years of age, men in Mexico City can expect to live 20.3 years, 22.2% of those years with diabetes. Their female counterparts are expected to live longer (22.1 years), but a similar number of years with diabetes (4.6 years). The prevalence of diabetes in Mexico was lower than in Mexico City and, as a consequence, the expected number of years with diabetes was lower for both men and women. At 69 years of age, Mexican men are expected to live an average of 2.9 years with diabetes, while their female counterparts are expected to live 4.1 years.

Given the high prevalence of diabetes in Bridgetown, at 60 years of age men are expected to live 3.4 years (19.3% of their remaining lives) and women, 5.4 years (23.7% of their remaining lives) with diabetes.

In São Paulo, at 60 years of age, males are expected to live about 3.0 years or 16.9% of their remaining lives with diabetes, while their female counterparts will live about 4 years or 18.3% of their life expectancy with diabetes.

In Havana, there was a statistically significant difference between diabetes prevalence rates among men 60 or more years of age and that of women of the same age. As a result, at 60 years of age, men are expected to live 1.3 years with diabetes, but women are expected to live 4.5 years with the disease.

The lower prevalence of diabetes in Buenos Aires translated into a smaller percentage of remaining years of life expected with diabetes. For men residing in Buenos Aires, 13.8% of the years lived beyond 60 years of age were expected to be lived with diabetes. Their female counterparts were expected to live about 11% of their remaining years with diabetes.

Tables 3 and 4 present the total, diabetes and diabetes-free life expectancies by age, for men and women, respectively. In general, results indicate that the impact of diabetes on life expectancy declines with age given the lower prevalence rates at older ages. At age 75, diabetes-life expectancy among men ranges from 0.5 years in Havana to 2.5 years in Mexico City. This means that between 5.4% of the remaining lives of men in Havana to over 22% of the remaining lives of men in Mexico City will be spent with diabetes. Among their female counterparts, diabetes life expectancy ranges from 1.2 years in Buenos Aires to 2.8 years in Bridgetown, which represents 11.4% and 22.5% of their remaining lives, respectively, with diabetes.

DISCUSSION

Data from the two surveys, SABE and MHAS, show that diabetes imposes a serious burden on the health status of the populations in Latin America and the Caribbean. Results indicate that a large proportion of the remaining life-years of those 60 or older in these geographic areas are expected to be lived with diabetes. However, there are important differences among the various cities. For instance, men who are 60 years of age in Havana are expected to live 7.1% of their remaining years with diabetes, while in Mexico City that percentage is 22.2%. Among women, the diabetes burden is even more pronounced. In Buenos Aires, women aged 60 and over are expected to live 11.3% of their remaining lives with diabetes, but their counterparts in Bridgetown are expected to live an average of 23.7% of their remaining years of life with diabetes.

Results show that of the areas included in the study, diabetes prevalence is highest in Bridgetown and Mexico City. Buenos Aires, Santiago, and Montevideo have the lowest rates, while São Paulo has intermediate levels (12, 20, 21, 39). Differences in prevalence rates across settings may be due to several factors. Data from SABE and MHAS used similar questionnaire content, but differences in culture and economic conditions, including education and access to health care, can influence the proportion of individuals aware of their diabetic status, the way their health status is reported (40, 41), and survivorship of those with the condition. Differences in translation may also influence the results. In addition, environmental differences, in particular, diet and physical activity and its interaction with genetic markers may result in true differences across settings (20, 21).

A fast aging process is under way in Latin America and the Caribbean and has impacted the prevalence of diabetes in these areas. Urbanization and economic growth have changed diets and lifestyles, which have contributed to the prevalence of diabetes (42–46). Economic development has increased the availability of foods rich in saturated fat and refined carbohydrates, but low in complex carbohydrates and fiber, and reduced the consumption of beans, fruits, and legumes (46). Modernization and urbanization have given rise to sedentary lifestyles and its associated Type 2 diabetes prevalence (44, 45). Some risk factors, such as gestational diabetes and impaired glucose tolerance, are more common among Latinos. Other early life experiences, such as low birth weight and early malnutrition, which have been linked to obesity and diabetes later in life, are also common in Latin America and the Caribbean. As a result of these changes, prevalence rates are expected to rise in Latin

America and the Caribbean with consequences in terms of morbidity, disability, and mortality.

This study had many limitations. The first refers to the fact that data on diabetes prevalence is self-reported; therefore, its prevalence may be underestimated. There is some evidence that undiagnosed rates are quite high in Latin America and the Caribbean. In a national survey conducted in Mexico's urban areas in the early 1990s, 42% of diabetics less than 40 years of age were unaware of their condition, while 74% of diabetics 40 years or more were aware of their diabetic status (47). In Argentina, undiagnosed cases account for about half of the cases (48). In Brazil, levels of undiagnosed diabetes are estimated to be around 40–50% (49, 50), but there is some evidence that awareness is higher among older individuals (41). In Chile, 45% of diabetes cases among the population 20 years of age and younger were undiagnosed (51). However, undiagnosed rates can be even higher among certain social groups. For instance, Goldenberg et al. (52) report that almost 60% of men in São Paulo constituted undiagnosed cases, while among women the percentage was close to 41%. Therefore, the values presented in this paper are conservative estimates of the real burden because undiagnosed diabetes and pre-diabetes–those with impaired glucose tolerance and impaired fasting glucose–have not been taken into account. It is important to note, though, that awareness of diabetic status increases with age (51). This is consistent with the fact that older people have more time to develop the disease and to present complications that may trigger medical diagnosis and treatment. Thus, the self-reporting bias may be smaller than among younger age groups.

Other limitations of the paper originate from the empirical application of the Sullivan method. First, the data from diabetes prevalence in Latin America and the Caribbean refers to the non-institutionalized population, while mortality data refers to the total population. Data from SABE and MHAS focused on the civilian population not residing in institutions. As a result, estimates may be biased downwards if one expects that institutionalized populations, particularly those residing in nursing homes, are more likely to have poor health, in particular, higher prevalence of diabetes, than the non-institutionalized population. However, the institutionalized population in Latin America and the Caribbean is relatively small. Thus, this bias is likely to be small. Second, estimates based on the Sullivan method are interpreted following the stationary population approach since the obtained health indicator, in this case diabetes prevalence, is meant to reflect the current population health status. As a consequence, results should be interpreted with caution since data are dependent on past conditions of the population (38). Finally, results reported in this study are based on self-reports obtained in the early 2000s. Given the undiagnosed rates in Latin America and the Caribbean, the estimates provided in this study underestimate the burden of diabetes in this geographic area.

It is well known that diabetes reduces quality of life. This study showed that many older individuals are expected to spend a significant amount of their remaining lives with diabetes. For the next decades, the impact of diabetes on healthy life expectancy is expected to rise unless preventive measures are taken. Social and economic costs associated with the disease, including comorbid macrovascular/microvascular complications and disability-related/premature mortality are also expected to increase. Recent studies have indicated that

changes in lifestyle, particularly in diet and exercise, and some medications can delay the onset of the condition. Therefore, health promotion campaigns that emphasize healthy eating and exercise are needed to encourage healthier lives. Changes in urban planning that promote physical activity should also be implemented. Finally, better access to health care can also improve diabetes management and reduce adverse consequences associated with poor glycemic control.

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TABLE 1

Sample size, self-reported diabetes prevalence rates among elderly individuals and confidence intervals by sex, Survey on Health and Wellbeing of Elders (SABE) and Mexican Health and Aging Study (MHAS)

	Males				Females				*P* value
Data source and geographic area	***N***	**Prev. (%)**	**95% CI**		***n***	**Prev. (%)**	**95% CI**		
SABE, 2000 (60+ years of age)									
Buenos Aires (Argentina)	381	14.0	10.2	17.7	658	11.4	8.8	13.9	0.007
Bridgetown (Barbados)	583	18.7	15.5	22.0	920	23.6	20.9	26.4	0.033
São Paulo (Brazil)	872	17.0	14.0	20.0	1 254	18.7	16.3	21.1	0.271
Santiago (Chile)	440	12.0	7.9	16.2	845	14.1	11.0	17.2	0.136
Havana (Cuba)	708	7.3	5.3	9.2	1 195	20.0	17.6	22.4	0.000
Mexico City (Mexico)	505	22.4	18.7	26.1	734	21.0	18.0	24.0	0.036
Montevideo (Uruguay)	528	12.4	9.2	15.6	917	14.5	11.9	17.0	0.076
MHAS, 2001									
Mexico (60+)	3 217	14.5	12.2	16.8	3 736	18.7	16.2	21.2	0.000
Mexico (urban, 60+)	1 950	18.3	14.9	21.8	2 493	23.2	19.7	26.6	0.000
Mexico (rural, 60+)	1 267	12.0	8.9	15.1	1 243	15.0	11.5	18.5	0.000

Source: SABE and MHAS 2001 (24, 27)

TABLE 2

Total life expectancy, diabetes-free life expectancy (DFLE) and diabetes life expectancy (DLE) at 60 years of age, by sex, based on self-reported diabetes from SABE, 2000 and MHAS, 2001 (weighted estimates)

Sex and geographic area	Total life expectancy at age 60 (e_{60})	Diabetes life expectancy (DLE_{60})	Diabetes-free life expectancy ($DFLE_{60}$)	Standard error of DFLE
Males				
Buenos Aires (Argentina)	17.4	2.4	15.0	0.01
Bridgetown (Barbados)	17.6	3.4	14.2	0.29
São Paulo (Brazil)	17.2	2.9	14.3	0.01
Santiago (Chile)	19.9	2.3	17.6	0.22
Havana (Cuba)	18.4	1.3	17.1	0.01
Mexico City (Mexico)	20.3	4.5	15.8	0.01
Montevideo (Uruguay)	17.6	2.1	15.5	0.01
Mexico	20.4	2.9	17.5	0.13
Females				
Buenos Aires (Argentina)	22.1	2.5	19.6	0.01
Bridgetown (Barbados)	22.8	5.4	17.4	0.32
São Paulo (Brazil)	21.9	4.0	17.9	0.01
Santiago (Chile)	24.0	3.3	20.7	0.23
Havana (Cuba)	22.0	4.5	17.6	0.02
Mexico City (Mexico)	22.1	4.6	17.5	0.01
Montevideo (Uruguay)	22.9	3.1	19.9	0.01
Mexico	22.3	4.1	18.3	0.01

Source: SABE and MHAS, 2001 (24, 27)

TABLE 3

Total life expectancy, diabetes-free life expectancy and diabetes life expectancy of male population according to age based on self-reported diabetes from SABE, 2000 and MHAS, 2001 (weighted estimates)

	Buenos Aires	Bridgetown	São Paulo	Santiago	Havana	Mexico City	Montevideo	Mexico
Total life expectancy in years								
60–64	17.4	17.6	17.2	19.9	18.4	20.3	17.6	20.4
65–69	14.0	14.4	14.1	16.1	15.0	16.9	14.2	16.9
70–74	11.0	11.4	11.4	12.7	12.0	13.7	11.5	13.8
75–79	8.2	8.7	8.9	9.9	9.2	11.0	9.0	11.0
80–84	5.8	6.5	6.7	7.4	7.0	8.5	6.9	8.5
85+	4.0	4.7	5.2	5.2	4.9	6.5	5.2	6.4
Diabetes life expectancy in years								
60–64	2.4	3.4	2.9	2.3	1.3	4.5	2.1	2.9
65–69	1.9	2.4	2.6	1.7	1.1	3.7	1.7	2.5
70–74	1.1	2.0	1.8	1.3	0.8	3.0	1.4	2.0
75–79	0.9	1.5	1.3	1.1	0.5	2.5	0.9	1.4
80–84	0.3	0.7	0.8	0.3	0.2	1.6	0.6	1.1
85+	-	0.5	0.4	0.6	0.2	0.9	0.2	0.7
Diabetes-free life expectancy in years								
60–64	15.0	14.2	14.3	17.6	17.1	15.8	15.5	17.5
65–69	12.2	12.1	11.5	14.4	13.9	13.1	12.5	14.4
70–74	9.8	9.5	9.6	11.5	11.1	10.7	10.1	11.8
75–79	7.4	7.2	7.6	8.8	8.7	8.4	8.1	9.6
80–84	5.5	5.7	5.9	7.0	6.8	7.0	6.3	7.4
85+	4.0	4.2	4.8	4.6	4.7	5.6	5.0	5.6

Source: SABE and MHAS 2001 (24, 27)

TABLE 4

Total life expectancy, diabetes-free life expectancy, and diabetes life expectancy of female population according to age based on self-reported diabetes from SABE, 2000 and MHAS, 2001 – Seven major cities in Latin America and the Caribbean and Mexico (weighted estimates)

	Buenos Aires	Bridgetown	São Paulo	Santiago	Havana	Mexico City	Montevideo	Mexico
Total life expectancy in years								
60–64	22.1	22.8	21.9	24.0	22.0	22.1	22.9	22.3
65–69	18.0	19.0	18.1	19.9	18.1	18.3	18.9	18.5
70–74	14.1	15.3	14.6	16.0	14.4	14.7	15.2	15.1
75–79	10.5	12.1	11.4	12.6	11.1	11.6	11.8	12.0
80–84	7.2	9.4	8.6	9.4	8.3	8.9	8.9	9.2
85+	4.9	7.0	6.6	7.0	5.6	6.6	6.5	6.8
Diabetes life expectancy in years								
60–64	2.5	5.4	4.0	3.3	4.5	4.6	3.1	4.1
65–69	2.2	4.4	3.3	2.7	3.8	3.9	2.6	3.4
70–74	1.7	3.7	2.5	2.1	3.1	3.0	2.0	2.6
75–79	1.2	2.8	1.9	1.4	2.5	2.4	1.3	2.0
80–84	0.9	1.7	1.4	1.0	1.8	1.6	0.6	1.5
85+	0.7	1.4	1.0	0.6	1.1	1.0	0.4	0.7
Diabetes-free life expectancy in years								
60–64	19.6	17.4	17.9	20.7	17.6	17.5	19.9	18.3
65–69	15.8	14.6	14.8	17.2	14.2	14.4	16.4	15.1
70–74	12.4	11.6	12.1	13.9	11.4	11.8	13.2	12.5
75–79	9.3	9.3	9.5	11.2	8.6	9.2	10.5	10.0
80–84	6.4	7.7	7.2	8.4	6.5	7.3	8.3	7.6
85+	4.2	5.6	5.6	6.5	4.6	5.6	6.1	6.2

Source: SABE and MHAS 2001 (24, 27)