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# Risk factors for cardiovascular disease in the elderly in Latin America and the Caribbean

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## KEYWORDS

Cardiovascular diseases;  
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## Summary

**Introduction:** The Latin America and Caribbean (LAC) regions are undergoing a transition from infectious to chronic non-communicable disease, together with and linked to a rapid aging of the population. Although cardiovascular disease is a principal cause of ill-health and death, few data are available among the elderly.

**Materials and methods:** We evaluated people aged 60 and over, living in seven urban centers in LAC: Buenos Aires, Bridgetown, Havana, Mexico City, Montevideo, Santiago, and Sao Paulo, who participated in the 'Salud, Bienestar, y Envejecimiento' study (SABE), conducted in 1999 and 2000. We calculated the prevalence of self-reported cardiovascular disease (CVD), and examined its association with established risk factors, using odds ratios (ORs) and their population attributable risks (PARs).

**Results:** The overall prevalence of CVD was 20.3% (95% CI 18.9–21.6). Rates varied across the region: lowest in Mexico City (10.0%) and Bridgetown (11.1%), intermediate in Buenos Aires (19.6%), Sao Paulo (19.8%), Montevideo (23.8%) and Havana (24.1%), and highest in Santiago (32.2%). CVD prevalence increased by 11% with every additional five-years of age, and was higher in women than men (21.2% vs. 18.9%).

Factors related to higher CVD prevalence included hypertension (odds ratio = 2.67), diabetes (OR = 1.42), obesity (OR = 1.19), and smoking (OR = 1.31),

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while regular exercise (OR = 0.66), adequate nutrition (OR = 0.70), and regular alcohol consumption (OR = 0.79) were related to lower CVD prevalence ( $p = 0.01$  for BMI,  $p = 0.02$  for alcohol consumption, and  $p < 0.001$  for all other risk factors). Collectively, these seven modifiable risk factors accounted for 69.7% of the PAR.

*Discussion:* Established and modifiable risk factors underpin CVD prevalence in LAC. Public health programmes, including reliable measures of their effectiveness are needed to reduce the burden of CVD in the region.

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## Introduction

The mean age of national populations in the Latin America and Caribbean (LAC) regions continues to increase, reflecting the decline in fertility, and delayed adult mortality [1]. Population aging represents a public health success story, and simultaneously creates new health care challenges. The elderly experience disproportionate levels of chronic disease and disability, which reduce quality of life, and increase the demand for health and social services. In recent decades the speed of population aging in many less-developed countries has been dramatic [2], and is likely to exceed the wealth accumulation needed to cope with the increased economic burden on society [3].

The 'epidemiological transition' [4] has led to chronic non communicable diseases (NCDs) being the principal causes of ill health and death in LAC [5]. In spite of this important disease burden, there is still a lack of objective data about cardiovascular risk factors, incidence and prevalence rates, clinical outcomes, and the impact on society of cardiovascular disease (CVD) among the elderly in the region. The Salud, Bienestar, y Envejecimiento en America Latina y el Caribe study (The SABE study) [2] was conducted in elderly populations of seven urban centers in the LAC region, and provides data about CVD and many anticipated risk factors.

In this review of cardiovascular disease in the LAC region we summarize information from the SABE study, presenting demographic characteristics, and the prevalence of cardiovascular disease based on self-reported diagnosis having been made by a healthcare professional. We evaluate the strength of association between CVD and lifestyle risk factors such as self-reported diabetes and hypertension, obesity, tobacco smoking, physical activity, alcohol consumption, and whether participants considered themselves well nourished.

## Methods

SABE was a cross-sectional survey of health and well-being among people born in 1939 or earlier (60 years or older in 1999) from seven urban centers in Latin America and the Caribbean: Buenos Aires, Argentina; Bridgetown, Barbados; Havana, Cuba; Mexico City, Mexico; Montevideo, Uruguay; Santiago, Chile and Sao Paulo, Brazil [6].

Detailed information about study methods has been provided elsewhere [7]. Briefly, the study participants were selected from the population of non-institutionalized elderly in the participating cities. The samples in all countries were selected using a multistage clustered design with two stages in Barbados and Brazil and three stages in all other countries. In every country the primary sampling unit was a cluster of independent households, selected from the geographical city or urban limits according to the norms of the national statistical offices in these countries.

Principal investigators from each participating country were trained in the study methods to ensure standardization, and study participants completed a common questionnaire administered in Spanish, Portuguese or English as appropriate. Anthropometric evaluations were conducted in six of the centers (not in Argentina).

Data management took place at a central site to ensure consistency of the collected information. The final public release data are a set of standardized and comparable datasets with minimal national idiosyncrasies. The data, first released to the public for statistical reporting and analysis in January 2005, are archived at the National Archive of Computerized Data on Aging (NACDA) and can be downloaded for free [8].

Participants were classified with cardiovascular disease if they had been diagnosed at any time by a doctor or nurse with a heart attack, coronary heart disease, angina, congestive heart failure, or other heart problem.

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