

POPULATION AGING AND IMPLICATIONS FOR EPIDEMIC CARDIOVASCULAR DISEASE IN SUB-SAHARAN AFRICA

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Within the clinical and public health communities, it is often unnoticed that the developing world is experiencing an aging population with its attendant increase in the burden of chronic, noncommunicable diseases. From July 1999 to July 2000, 77% of the world's net gain in elderly persons occurred in developing countries. In Sub-Saharan Africa alone, the number of persons aged 65 years and older is expected to increase by 50% in 2015, from 19.3 million to 28.9 million. This demographic change has profound implications for developing countries that already shoulder a huge burden of communicable diseases, especially the HIV/AIDS epidemic, and continue to be challenged by basic infrastructure needs and economic development.

In the 30-year period from 2000 to 2030, the population of elderly persons is projected to double in many Sub-Saharan African countries including the Democratic Republic of Congo, Mozambique, Cameroon, and Ghana. The scale and magnitude of these demographic changes are unprecedented. Since advancing age is the most powerful independent predictor of cardiovascular morbidity and mortality, the impact of these demographic changes on heart disease and stroke will be substantial. Aggressive efforts in promoting healthy aging and the prevention of cardiovascular risk factors will be crucial in preventing an impending cardiovascular epidemic in these countries. (*Ethn Dis.* 2003;13[suppl2]:S2-77-S2-80)

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INTRODUCTION

The population of the world is aging at an unprecedented rate. Both an increase in the average life span during the second half of the 20th century and declines in fertility have contributed to an increase in the median age across the globe.² As a result, mortality patterns in the developed world have already changed from infectious diseases to cardiovascular diseases and cancer as the leading causes of death. What is less well appreciated is that the developing world is also experiencing an aging population, having profound implications for countries that continue to be challenged by basic infrastructure needs, economic development, and the HIV/AIDS epidemic.

An aging population can be considered a modern success story. Basic public health measures have led to the control of infectious and parasitic diseases and declines in child and maternal mortality, so that more children are reaching maturity. Family planning measures have led to lower fertility rates. As a result of the lower fertility rates and growing numbers of persons surviving to older ages, the shape of the global age distribution is changing. For developed countries, age distribution had changed from the characteristic pyramid shape to a fairly rectangular shape by 1990 (Figure 1). For developing countries, the population distribution is projected to become more rectangular by 2030.

DEMOGRAPHIC CHANGES IN THE DEVELOPING WORLD

While the proportion of elderly will grow dramatically from 2000 to 2030

in Europe (15.5% to 24.3%), North America (2.6% to 20.3%), Asia (6.0% to 12.0%), and in Latin America and the Caribbean (5.5% to 11.6%),² the Sub-Saharan picture differs. Because of continued high fertility, the proportion of elderly in Sub-Saharan Africa will grow rather modestly (0.3%) for the next 3 decades.² However, this modest proportional growth masks the overall size of the expected population growth. The largest increases in absolute numbers of elderly are taking place in the developing world. Seventy-seven percent of the world's net gain in elderly persons in the period from July 1999 to July 2000 occurred in developing countries.² In Sub-Saharan Africa, the number of elderly (age 65 years and older) is expected to increase by 50% in 2015, from 19.3 million to 28.9 million.²

Regional averages can hide great diversity. Census data from 2000 and population projections for 2030 show a range of estimates for the proportion of elderly in Sub-Saharan Africa (Figure 2).² Of the countries in this region, only South Africa is anticipated to have as much as 8.0%–12.9% of the population age 65 and older by 2030. Yet, the number of countries in the region with 2 million or more elderly will more than double by 2030 (Figure 3). Additionally, in the 30-year period from 2000 to 2030, the population of elderly persons is projected to double in many Sub-Saharan African countries including the Democratic Republic of Congo, Mozambique, Cameroon, and Ghana.³ The rapid growth of the elderly is occurring much more swiftly in the developing world. Most developed countries have experienced aging over a century, yet the developing world will see dramatic growth in less than 3 decades.

The impact of the HIV/AIDS epi-

demographic change in Sub-Saharan Africa somewhat uncertain. HIV/AIDS may reduce life expectancy at birth by more than 30 years from otherwise-expected levels in Botswana, Namibia, South Africa, and Zimbabwe.² In Sub-Saharan Africa, it was estimated in 1999 that 8.6% of the population age 15 to 49 years was infected with the HIV virus.²

PUBLIC HEALTH IMPLICATIONS OF AN AGING POPULATION

There is great interest in the health and functioning status of those who are surviving to older ages. Evidence from US surveys has shown that some measures of disability have declined.⁴ Results of a recent longitudinal study in the United States supported the hypothesis that disability can be postponed through healthier lifestyles.⁵ These trends are critical because the growing burden of chronic illnesses in Western countries has placed severe demands on the healthcare system. In the United States, spending for the federally funded Medicare system more than doubled from 1990 to 2001, mostly due to increasing volume and intensity of services.⁶ Future growth in the numbers of elderly persons raises concerns about potential increases in spending. In addition, the projected growth in the number of elderly persons relative to working age persons is a concern because there will be fewer working age adults relative to the number of elderly receiving publicly financed pensions, health care, and long-term care. In Africa, the loss of young adults to the AIDS epidemic has resulted in a cumulative estimate of 12.1 million orphaned children who also require support.²

An aging population layers additional challenges onto those that have yet to be fully addressed in the developing world. In many areas of the world, maternal and child mortality remains high,

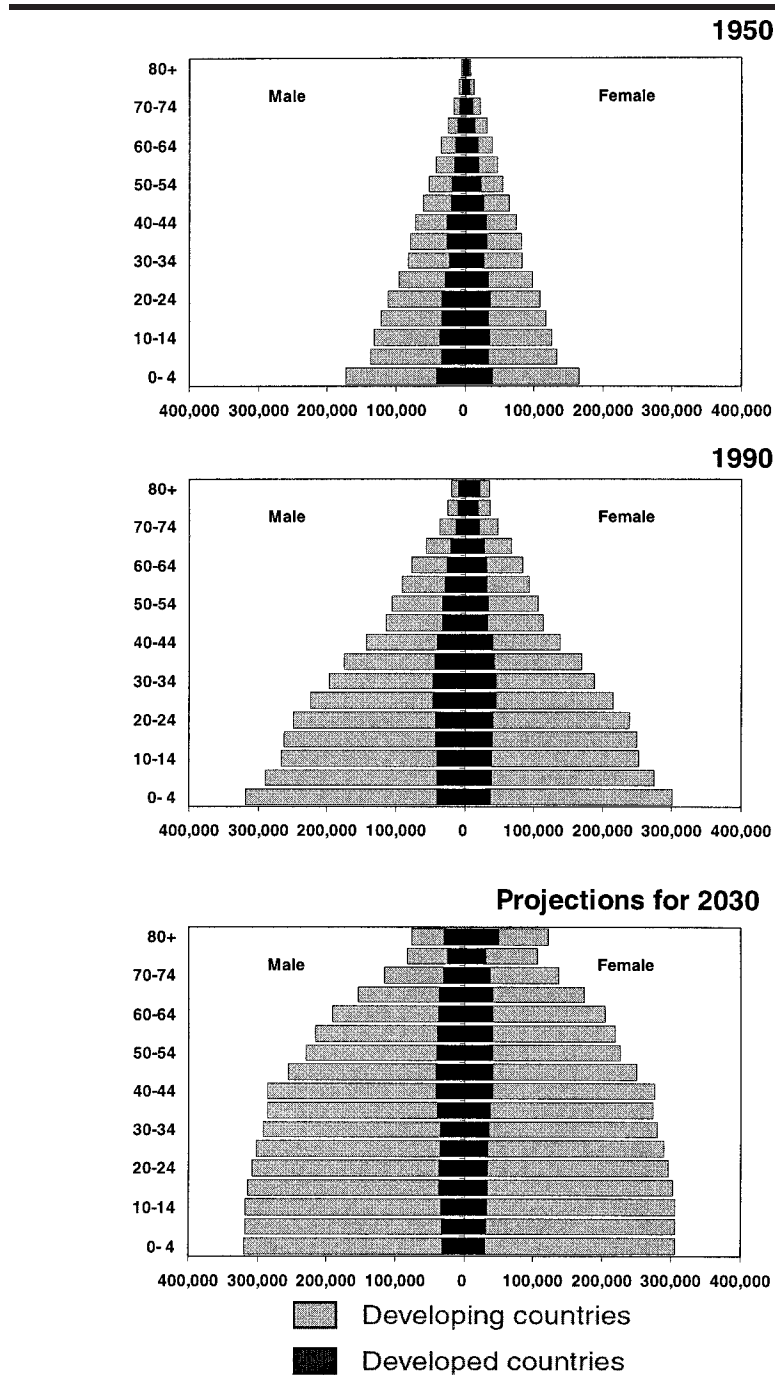


Fig 1. Population age distribution for developing and developed countries, by age group and sex—worldwide, 1950, 1990, and 2030. Source: United Nations, 1999 and U.S. Census Bureau, 2000

and infectious diseases have yet to be controlled as they have been in the developed world. AIDS has been a true pandemic in much of Sub-Saharan Africa, and continues to grow exponentially in much of the developing world.

In the United States, approximately 80% of all adults aged 65 or older have at least one chronic condition and 50% have at least 2.⁷ The addition of a large aging population that requires expensive medical care and pharmaceuticals gives

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great urgency to efforts to prevention chronic illness in the developing world.

CARDIOVASCULAR IMPLICATIONS FOR DEVELOPING COUNTRIES

In spite of the unfinished business of controlling infectious and parasitic diseases, the persisting maternal and child health problems, and the HIV/AIDS epidemic, more children are surviving to adulthood, where they face greater exposure to risk factors for chronic disease.² Among these risk factors, however, advancing age is the most powerful independent predictor of death and disability from cardiovascular diseases. It is noteworthy that cardiovascular diseases have already been dubbed the primary noncommunicable health problem in developing countries.⁸ Nevertheless, several excellent recent reports⁹⁻¹⁴ that address the demographic changes in developing countries often do not emphasize the cardiovascular implications. Although Sub-Saharan Africa is the only region where cardiovascular diseases are not the leading cause of death yet, the projected demographic changes will have a tremendous impact on the incidence and prevalence of heart disease and stroke. Aggressive efforts in promoting healthy aging and the primordial prevention of cardiovascular risk factors will be crucial in preventing an impending cardiovascular epidemic in these countries.

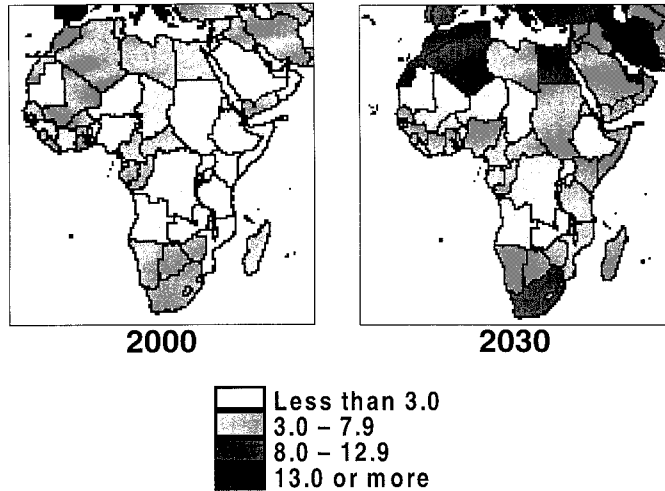


Fig 2. Percent of population aged 65 years and older

RESPONSE FROM THE INTERNATIONAL COMMUNITY

The United Nations (UN) has launched major activities to address the aging of the world's population. In 1999, the UN chose "A Society for All Ages" as the theme for its International Year activities, highlighting 4 dimensions: individual lifelong development, multigenerational relationships, the in-

terrelationship between population aging and development, and the situation of older persons.¹ In 2002, the UN convened the *Second World Assembly on Aging* in Madrid, Spain.¹ The Second Assembly reviewed the dramatic changes that have occurred in the two decades since the First World Assembly in 1982 and formulated an International Plan of Action on Aging. The goal of the plan is to ensure that persons worldwide are able to age with security and dignity and to continue to participate in their societies as citizens with full rights. The plan includes recommendations for action according to 3 priority directions: older persons and development; advancing health and well-being into old age; and ensuring enabling and supportive environments. The UN has acknowledged the particular burden that aging brings for developing countries that face unresolved development issues.

The Centers for Disease Control and Prevention (CDC), through its National Center for Chronic Disease Prevention and Health Promotion, has recognized the importance of aging and its impact on all chronic diseases. CDC is committed to promoting healthy aging and addressing risk factor prevention and control as effective strategies for reducing the burden of chronic diseases in

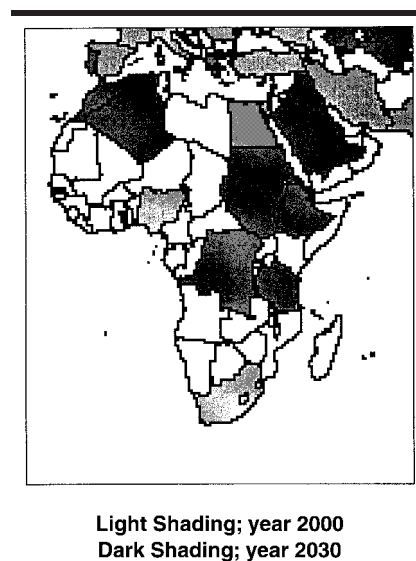


Fig 3. African countries with 2 million or more elderly people, 2000 and 2030

CDC is committed to promoting healthy aging and addressing risk factor prevention and control as effective strategies for reducing the burden of chronic diseases in the aging population.

the aging population. CDC's expertise in disease prevention and control can be readily applied to target the health needs of an aging population by: providing public health leadership and coordination; enhancing surveillance; promoting policy development and environmental change; and helping to translate research findings into practice. Although CDC's current activities in aging primarily address older Americans,¹⁵⁻¹⁸ and its global health work in Africa predominantly focuses on initiatives to combat the HIV/AIDS epidemic,¹⁹⁻²⁰ CDC's co-sponsorship of the ISHIB2003 world congress in Ghana provides a unique opportunity for collaborative efforts on the health needs of the aging population in Sub-Saharan Africa. The partnerships forged at this world congress on cardiovascular health in developing countries will go a long way in helping to prevent the cardiovascular disease epidemic in Sub-Saharan Africa.

SUMMARY AND CONCLUSIONS

Developing countries, much like the rest of the world, are witnessing an aging population with its attendant increase in the burden of chronic diseases. These demographic shifts have tremendous implications for countries that are already burdened with the unfinished

business of addressing maternal and child health, parasitic diseases, the HIV/AIDS epidemic, and other infectious diseases. Sub-Saharan African countries are prime examples of the manifestation of this "double burden." The limited resources available in these countries will be inadequate for dealing with full-blown epidemics of cardiovascular and other chronic, noncommunicable diseases. Fortunately, Sub-Saharan Africa is also the only region today where cardiovascular disease is not yet the leading cause of death. Therefore, a unique opportunity exists for preventing the cardiovascular disease epidemic in this region. Aggressive efforts in promoting healthy aging and primordial prevention will be crucial in this endeavor.

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