

# **Population ageing and older persons' health in South Africa**

Jané Joubert, Debbie Bradshaw

Burden of Disease Research Unit, South African Medical Research Council

## **Introduction**

Population ageing was a key demographic feature of the 20th century and is expected to remain an important population issue throughout the 21st century, posing particular challenges in developing nations due to the rapidness of the ageing process.<sup>1</sup> Population ageing was initially experienced by the more developed countries, but it is now a global phenomenon, experienced in virtually all countries. Of all United Nations-classified major areas, Africa has the lowest proportion of older persons at 5.3%.<sup>1</sup> However, proportions by themselves, do not give a real sense of ageing momentum, and it is important to acknowledge that Africa's 5.3% accounted for 50.1 million older persons in 2007, similar to the numbers in the United States of America (52 million) where older persons accounted for 17% of the total population.<sup>1</sup> The average annual growth rate for the period 2005-2010 for Africa is estimated at 2.1%, compared to that of the USA at 0.9%, further pointing to the need to consider older persons' health in Africa.<sup>1</sup>

## **Rationale and aim**

Past population concerns in South Africa focussed on high fertility and child mortality, while current health priorities are determined by HIV/AIDS and an MDG-driven focus on child and maternal health. However, demographic change is creating an ageing population, and continued steep increases in the older population, of whom millions have lived through decades of discriminating colonization and apartheid policies, represent an increasing need for a contemporary picture of population ageing and older-age health. In South Africa, over 7% of the population are currently 60 years or older, making it demographically the oldest country in sub-Saharan Africa, excluding very small and island countries.<sup>1</sup>

The paper aims to describe the future impact of current demographic trends and explore current living conditions and health profiles of older persons in order to assess the health challenges that South Africa may face as a result of population ageing. Its objectives are:

- 1.1 to illustrate trends in key demographic determinants associated with population ageing;
- 1.2 to illustrate trends in selected indicators of population ageing;
- 1.3 to explore the demographic impact of HIV/AIDS on population ageing;
- 2.1 to highlight the prevalence of selected self-reported chronic conditions and risk factors for chronic disease;
- 2.2 to illustrate urban/rural differentials in living conditions;
- 2.2 to explore changes in the cause-of-death profiles over time.

## **Theoretical focus**

The work for our paper is informed by the Demographic Transition Theory and the theory of Health Transition. Over the past half century, the interpretation of past population change and the expectations about future trends were based to a considerable degree on a body of observations and explanations referred to as the Demographic Transition Theory. The arguments around whether it qualifies as a theory, paradigm or conceptual framework are acknowledged, and we recognize that work has been done around different forms of the demographic transition. In our study, however, the process underlying population ageing is perceived as the demographic transition, with reductions in mortality and fertility resulting in changing weights of broad age bands over time in the population structure.

Continuous declining fertility has globally been the major demographic determinant of population ageing.<sup>1</sup> In South Africa, persistent fertility declines has resulted in a significant turning point where the number of annual births has started to decline, making fertility an important determinant of local population ageing. The role of mortality is somewhat more complex as reduced mortality can also result in a rejuvenation or 'younging' of a population as the numbers increase among younger cohorts due to their higher survival probabilities. Mortality declines in a population are usually characterized first by declining infant and childhood mortality as infectious and parasitic diseases are reduced, implying improved life expectancy at birth. Larger birth cohorts and expanding proportions of children relative to adults then produce a younger population age structure. Conventionally, mortality declines influence population ageing specifically when older-age mortality start declining. Addressing deaths that occur during and associated with the process of ageing, brings about decreasing death rates among people of older ages, thus leading to ageing at the top of the population structure.<sup>2,3</sup>

Worldwide, the 20th century has witnessed long-term declines in mortality levels resulting from the aggregate processes at work in demographic and epidemiological change. This has become known as the Health Transition,<sup>4,5</sup> referring to the combined changes in mortality, fertility, risk factors for disease, cause of death and morbidity profiles, and health systems' response to these. The long-term and complex changes in the cause-of-death patterns and changes in health and disease that occur during demographic and developmental transformation in a population have been described by Omran's Epidemiological Transition,<sup>6</sup> suggesting changes in disease profiles from those conditions associated with under-development, including infectious disease and poor maternal and child health, to chronic degenerative disease, mainly affecting adults. Olshansky and Ault proposed a fourth stage of delayed degenerative diseases<sup>7</sup>, Yusuf *et al.* referred to a fifth stage of social upheaval and regressive health,<sup>8</sup> while Frenk *et al.*<sup>9</sup> wrote about prolonged change and epidemiological polarization, suggesting the long-term co-existence of infectious and lifestyle diseases in middle-income countries.

Despite incompleteness of historic data, our paper illustrates trends in fertility and birth declines over a 40-year period from 1985, as well as trends in infant, child and adult mortality declines until the 1990s, whereafter age-specific death rates started showing increasing mortality in infants, children and young adults. These trends are used to assess future patterns in the ageing process of the South African population. The cause-of-death profile of the total population illustrates the country's diversified burden of disease, and trends in the causes of death among the 60+ population are explored in seeking insight into recent epidemiological change.

## Data and research methods

The lack of reliable health data in Africa are known,<sup>10</sup> and the poor civil registration systems in sub-Saharan Africa has recently received attention in a leading health journal.<sup>11</sup> However, South Africa's successes in vital registration has been highlighted,<sup>11</sup> and various focussed efforts in post-apartheid South Africa have improved and increased the number of national population and health data sources, including two population censuses, several nationally-representative household surveys, and two Demographic and Health Surveys.

Additionally, the ASSA2003 AIDS and Demographic Full Model of the AIDS Committee of the Actuarial Society of South Africa is an internationally-recognized source of a wide range of demographic and health data. It is a spreadsheet simulation model that is an update of earlier ASSA models of the demographic impact of the heterosexual HIV/AIDS pandemic in South Africa. The model has been updated and calibrated to various relevant data sources, and allows for five HIV/AIDS interventions, i.e. social marketing, improved treatment for sexually transmitted diseases, voluntary counseling and testing, prevention of mother-to-child transmission, and anti-retroviral treatment to demonstrate the impact of AIDS on different demographic and health variables. Methodological details and assumptions are available at <http://www.actuarialsociety.org.za/>

National trends in fertility, and infant, child and adult mortality, as well as trends in a number of indicators of population ageing are illustrated with ASSA2003 data. The indicators include the median age, ageing index, old-

age dependency ratio, potential support ratio, and parent support ratio. The impact of HIV/AIDS on population ageing is demonstrated using with-AIDS and without-AIDS scenarios.

From the 1998 and 2003 South Africa Demographic and Health Surveys (SADHS), basic descriptive analyses from empirical data on chronic disease, health care access, risk factors for disease and living conditions among older persons are used to review current health care concerns among older persons.

With descriptive analyses, causes of death in older persons are investigated from national death registration data of Statistics South Africa for the years 1998–2005 to examine changes in mortality patterns over time. The cause-of-death profile of the total population is shown with updated information from the South African National Burden of Disease Study. The findings are explored in relation to staging in the classical epidemiological transition and its extensions.

### **Preliminary findings**

Persistent fertility decline has resulted in a demographically-significant turning point where the number of annual births has started to decline, leading to a decline in the size of successive birth cohorts. The South African population has entered an era with little growth in the total population, but steep increases in the number of older persons, including in the oldest-old ages, and it is expected to continue ageing over the next two decades despite the impact of HIV/AIDS. The projected rate of change in the numbers and proportions of older South Africans for the period 1985 – 2025 are considerably higher than those in the populations 0-14 and 15-59 years, and the ageing index are projected to double between 1998 and 2025, reflecting the need to prepare for continued steep increases in the number of older persons despite the impact of HIV/AIDS, and the increasing demand for a comprehensive and contemporary picture of older persons' health.

Burden of disease research points to a well-established presence of non-communicable disease in the total South African population. This presents together with an extensive HIV/AIDS epidemic, continued burden from other communicable, maternal and nutritional conditions, and a large burden from injuries, reflecting elements of Frenk *et al.*'s protracted polarised model of the epidemiological transition,<sup>9</sup> as well as elements of the additional transition stage of health regression and social upheaval suggested by Yusuf *et al.*<sup>8</sup> Among the population 60+ years, 84% of the mortality burden of 2000 was due to non-communicable disease. Ischaemic heart disease and stroke were the leading single causes of death, the order for men and women reversed. These two conditions accounted for about one-third of deaths in the older population. Large numbers of death were from malignant neoplasms, and the ranking for specific cancers differed by sex. Lung cancer was the leading cause of cancer deaths in older men, followed by prostate, and oesophageal cancer. In women, breast cancer was the leading cause of cancer deaths, followed by lung and cervix cancer. More recent cause of death data is expected to show similar a similar pattern of the domination of non-communicable disease, but further analysis is needed to show if there is change over time.

SADHS 2003 data show that nearly all urban older persons (92%), compared to 53% of non-urban older persons, lived in households with access to electricity, reflecting a narrowing in the urban/non-urban gap from 1998. Changes in access to piped water for drinking were less marked. Of urban older persons, 85% had access to a flush sanitation facility, compared to 5% of non-urban older persons.

Similar to the 1998 SADHS, high blood pressure in 2003 was by far the most commonly reported chronic condition among both older men and women. Arthritis presented in both sexes as the second-most commonly reported chronic condition. In terms of health services, over 30% of older persons reported in 2003 seeking health care at facilities or providers in the public sector in the preceding 30 days, compared to 19% seeking care in the private sector. Generally, substantially higher proportions of older persons are dissatisfied in 2003 compared to 1998, with the health services they attended.

## References

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