EXTENDED ABSTRACT

ADULT MORTALITY IN SOUTHERN AFRICA USING DEATHS REPORTED BY HOUSEHOLDS: SOME METHODOLOGICAL ISSUES AND RESULTS

Rob Dorrington
Centre for Actuarial Research, University of Cape Town

Ian Timaeus
Centre for Population Studies, London School of Hygiene & Tropical Medicine

Simon Gregson
Imperial College, London

Censuses in developing countries quite often ask households to report of the number of deaths in a period immediately prior to the census but these data don't seem to have been used much to produce estimates of adult mortality in Southern Africa in recent years. This paper analyses the potential biases in these data and applies a combination of the generalized growth balance and synthetic extinct generations method to data adapted from censuses in Zimbabwe to produces estimates of mortality. These estimates are compared with those produced by other researchers and found to be broadly consistent and the results are interpreted in the context of similar applications to data from Swaziland and Botswana.

1. Introduction

Despite being collected in a number of censuses, deaths reported by households do not appear to have been much used to estimate mortality in Southern Africa. The reasons for this are not clear but probably stem from an uncertainty by those working for central statistical offices about how to turn these data into reliable mortality rates. Thus the data are sometimes not even published.

This is a pity since South Africa and Zimbabwe are the only two countries where it has been possible to make use of vital registration data to measure mortality, and even then, in the case of Zimbabwe, only 30-40% of female deaths were registered leading to significant uncertainty around the estimates of the mortality of women. Thus, with the 2000 round of censuses, deaths reported by households recorded in the census could be a vital source of information about mortality in recent years.

Manuals and textbooks tend to treat deaths reported by households as a source of data similar to vital registration data but there are reasons to suspect that these data are subject to

different biases from those affecting vital registration data. In addition, these data usually only cover the year prior to the census so, unless one can assume that either the population is stable or that mortality is constant, one needs to adapt the existing methods for evaluating the completeness of death reporting in an intercensal interval to derive mortality rates from these data.

2. Structure of the paper

The paper discusses the potential sources of bias in census reports of recent deaths and investigates biases in data reported by households in the 2001 South African census (Dorrington, Moultrie and Timæus 2004) by comparing these data with the expected number of deaths based on rates of mortality derived from vital registration data.

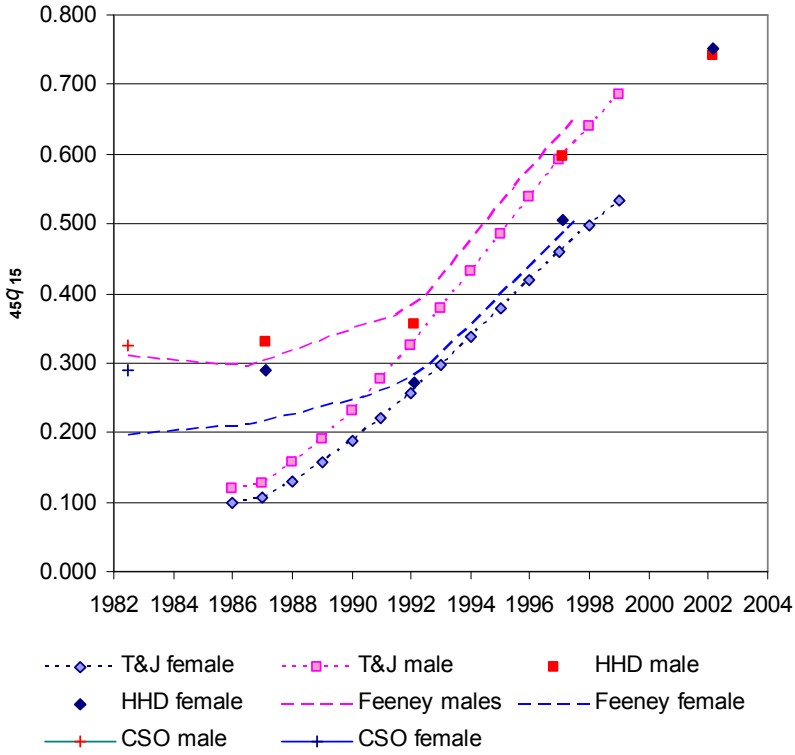
This is followed by an application of the generalised growth balance method (Hill 1987) plus the synthetic extinct generations method (Bennett and Horiuchi 1984) as suggested by Hill and others (2005 in press), to data from Zimbabwe's censuses. Adaptations of the standard methods that are considered are: estimating the person-years of exposure and growth rates where using death data from the second census only; estimating the number of deaths during the intercensal period where one has death data from both censuses; and allowing for migration where this can be expected to have a significant effect on the estimates derived.

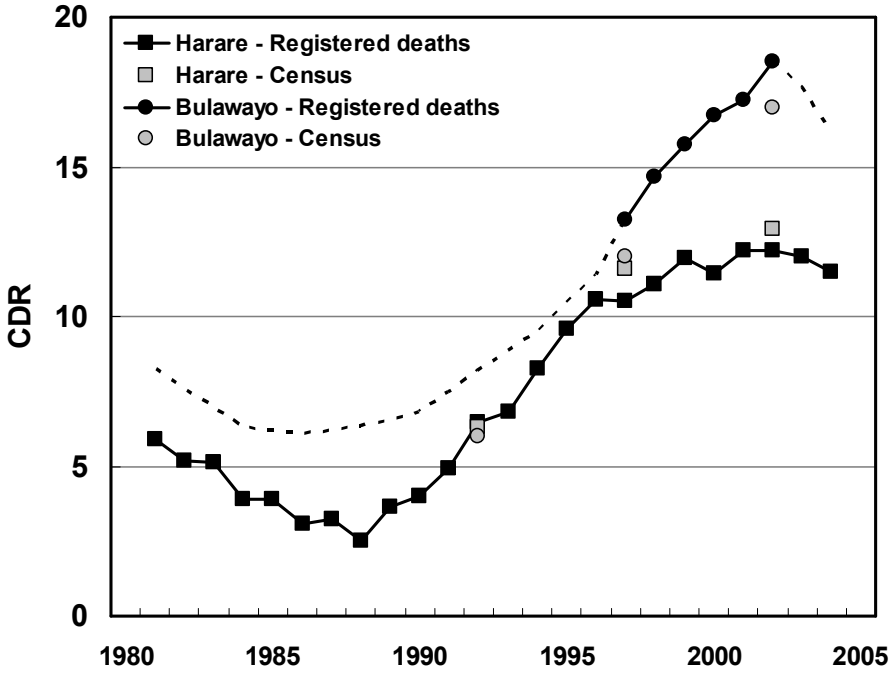
The reasonableness of the estimates thus produced is investigated by comparing the rates with those determined by Feeney (2001) and Timæus and Jasseh (2004) as well as against crude death rates for the cities of Harare and Bulawayo. In addition, the results are discussed in the context of applications of similar methods to data from Swaziland and Botswana.

3. (Anticipated or known) Results

Comparison of the deaths reported by households with the expected number on the basis of vital registration corrected for under-reporting suggest that completeness of deaths reported by households may not be independent of age since it is a is a function of the respondents concept of household, whether the household disappears on the death and what proportion (particularly of the elderly) live in institutions.

The figures below show a comparison of the rates produced for Zimbabwe using deaths reported by households with those from other sources, the first compares ${}_{45}q_{15}$ for the country as a whole the second the crude death rates for Harare and Bulawayo. As can be seen, the rates based on deaths reported by households are by and large consistent with those from other sources. Apparent differences are explored in the paper.





4. Relevance

Given the high levels of HIV prevalence being measured in many African countries, and South African countries in particular, coupled with the uncertainty around these estimates,

particularly where there are substantial differences between measures produced from antenatal clinic surveys and household surveys, establishing accurate estimates of the level of mortality is an important third measure of the extent of the epidemic. This research suggests that it is possible to produce useful estimates of mortality using data on deaths reported by households in the census, particularly if these data are available for two consecutive censuses. It also identifies the nature of biases that might be found in such data and suggests ways in which the data may be used with standard indirect techniques to produce estimates of mortality.

References

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