Commentary: On reappraisal of adult mortality

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Due to the development of indirect estimation methods for estimating infant and child mortality from some simple questions asked routinely in censuses and surveys, and collection of detailed birth histories in some sample surveys, there has been marked improvement in the information on levels and trends in child mortality in the developing world.1 But unfortunately, the same cannot be said about levels and trends in adult mortality. In recent years, the spread of the human immunodeficiency virus (HIV)/AIDS epidemic has brought the paucity of data on adult mortality into sharp focus.2

It is in this context that Gakidou and colleagues recommend collection and analysis of sibling survival data.3 It should be noted that there are two alternative methods of estimating adult mortality from this information. The ‘indirect’ method, developed originally by Hill and Trussell4 and revised subsequently by Timæus and others,5 uses data only on the proportion of surviving siblings by respondent’s age. The data collected in the maternal mortality module of the Demographic and Health Surveys (DHS) had additionally included data on current age of surviving siblings, age at death, and time period of those who have died. Data of this type permit the direct estimation of mortality rates by age for any time period in the past, and it is this data and the method that Gakidou and others discuss in their paper. The advantage of the direct method is that it is not affected by assumptions about the age patterns of fertility and mortality made in the indirect method, but could be sensitive to errors in the detailed data used in the estimation. Neither of these methods has been extensively used and hence mortality rates. Although they may be useful in approximating the level of adult mortality for the time periods for which estimates of child mortality are available, the assumed high correlation between the levels of adult and child mortality could become too restrictive when ascertaining trends, especially in populations affected by the HIV/AIDS epidemic.


there is scant information on how well they perform in practice. An issue of particular concern is that as respondents cannot be expected to report on siblings who died before they were born or when they were very young, the method would invariably lead to underestimation of adult mortality.

Gakidou and others provide estimates of probability of survival between age 15 and 59 ($59q_{15}$) derived from the DHS data for 29 populations. Apparently the estimates are for the 5-year period before the survey (the paper is not very clear on this issue). The comparison with the estimates provided by the United Nations for the corresponding period show that sibling survival estimates are lower (the extent of underestimation is difficult to gauge from the data presented by the authors) which appears to confirm the suspicion about the sensitivity of the estimates to selective omission of non-surviving siblings. However, the UN estimates are also not above criticism, as the adult mortality estimates for many of the countries in the data set were probably inferred from the estimates of child mortality using model life tables. Nonetheless, the estimates presented for four countries at two points in time raise doubts about the usefulness of sibling-survival data for monitoring adult mortality trends. Of the four countries, the survey estimates suggest unbelievably large increases in adult mortality in a span of 3–4 years in the case of two (Indonesia and Malawi), and large declines in one (Peru).

The authors are of the view that some innovations being tried out in the World Heath Survey (WHS), such as information on time of last contact between siblings and collection of data from respondents of both the sexes, would significantly improve the quality of estimates derived from sibling histories. This however remains to be seen. Also, as suggested by Kenneth Hill, if DHS-type data on sibling survival were collected for all adults, they can be corrected for omission of events using the indirect methods developed for adjusting registered deaths (such the growth-balance method). As there appears to be several variants of the sibling-survival method and information on them is not widely available, it would be worthwhile to produce a monograph that describes these methods and develop computer software that facilitates standardized application of the methodology.

However, none of these methods is a substitute for the conventional vital registration system. It is saddening to note that there was virtually no change in the percentage of population covered by a functioning civil registration system in developing countries between the early 1970s and early 1990s. Even a registration system that is 50–60% complete could be more useful in monitoring adult mortality trends than any indirect information collected through surveys. It is time to focus on long-term solutions instead of relying on stopgap measures.

References