

RESEARCH NOTE

New estimates of infant and child mortality for blacks in South Africa, 1968-1979

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Abstract This report is part of a project to evaluate and improve the quality of mortality data for blacks in South Africa. Infant and child mortality rates of 79/1 000 and 81/1 000 were estimated for 1968-1974 and 1975-1979 respectively. A child mortality rate of 43/1 000 was estimated for 1973-1977. Estimates of infant mortality rates for 1970-1974 and 1975-1979, and the child mortality rate for 1973-1977, are higher than the results reported earlier by other analysts.

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Data and methods

With basic information taken from the cross-sectional 1982 fertility survey among blacks,¹ the Trussell version of the Brass² indirect technique was used to estimate infant and child mortality rates, i.e. the probability of dying between birth and 1 year and between 1 and 5 years respectively. Firstly, all births reported as well as all infants who survived are used to calculate mean parities and the proportion of deaths among total children born. The proportion of deaths among children born to women in each age group (D(i)) is converted into an estimated probability of dying at a given age (q(x)) by means of the formula:

$$q(x) = [a(i) + b(i)P(1)/P(2) + c(i)P(2)/P(3)] D(i) \dots 1$$

where q(x) = probability of dying at given age x and the component a(i) + b(i)P(1)/P(2) + c(i)P(2)/P(3) corrects for the age-pattern of fertility in the population. P(1), P(2) and P(3) are the mean parities of women in age groups 15 - 19, 20 - 24 and 25 - 29 years respectively. The coefficients a(i), b(i) and c(i) are the results of elaborate regressions presented as models by the United Nations.³

Trends in mortality are estimated with the equation:

$$t(i) = e(i) + f(i) P(1)/P(2) + g(i)P(2)/P(3) \dots 2$$

The coefficients e(i), f(i) and g(i) for each age group are taken from a standard model.³ Extrapolating from an appropriate model life table (in this case the United Nations general model), q(x) is converted to common indices, showing mortality rates at different periods before the survey. The original data refer to all the women in the study who were or ever had been married. In this analysis the number of women and births and deaths of babies in each age group were included with the aforementioned so that the results would be more

representative of the black population.

Comparison of results

Estimates in this analysis (Table I) are compared with those of other sources from roughly the same period. Comparison is limited to three reviews which attempted national coverage.^{4,5} This explains the exclusion of several published estimates of infant and child mortality based only on regional or urban data, and those data estimated for significantly different periods. For the period 1970-1974, the estimate of infant mortality in the present analysis (79/1 000) is lower than the 94/1 000 quoted by Sadie⁴ and the 81/1 000 reported by Rossouw and Hofmeyr.⁵ On the other hand, the latter's estimate for 1975-1979 is lower. In another study, Hofmeyr⁵ estimated infant and child mortality rates of 77/1 000 for 1973-1977 and 70/1 000 for 1978-1982. Although the periods differ slightly, both estimates are lower than those cited above,⁵ and also lower than those reported here. Hofmeyr's child mortality estimate for 1973-1977 (35/1 000) is also lower than the estimates in the present analysis. Further analyses are required, however, to isolate the effects of data deficiencies from real differences arising from different estimation techniques. Besides, the exclusion of data from the homelands could bias the data used in the present analysis.

The results show that the infant mortality rate for blacks did not decline systematically in the 1970s. A high infant mortality rate in black females resulted in an overall increase from 79/1 000 in 1970-1974 to 81/1 000 in 1975-1979. This excessive female infant and child mortality in the mid-1970s is disturbing and should be a subject of further investigations.

In conclusion, indirect methods of demographic estimation, one of which is demonstrated here, provide good techniques for assessing and updating black mortality data in South Africa. Since the information required for the application of this particular technique is easy and inexpensive to collect, it would be extremely useful if simple questions on all children born and all children surviving are included in future national censuses, as well as demographic and health surveys.

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TABLE I.
Estimates of infant and child mortality rates (IMR and CMR) for blacks in South Africa, 1968-1979

Year	IMR (/1 000)			CMR (/1 000)		
	Males	Females	Both	Males	Females	Both
1979	68	66	67	28	27	28
1977	97	88	92	52	44	48
1975	74	91	83	33	46	40
1973	74	94	94	35	49	42
1971	76	66	71	34	27	31
1968	82	76	80	40	35	38