BOOTSTRAP TO STUDY COMPLETENESS OF ADULT MORTALITY SURVEILLANCE

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ABSTRACT

Surveillance of mortality in India is being carried out through vital registration system. Though there exists an act of law, underreporting of deaths is common because of lapse in reporting, and dysfunction of the system. Incomplete and inadequate registration of deaths can often affect estimates of disease burden. Further, differential under-registration of deaths by age and sex will bias both mortality and synthetic analyses of disease burden. To complement the vital registration system, Sample Registration System (SRS) had been initiated on annual basis in all the states of India.

The direct information on the completeness of deaths under SRS is not available. Indirect estimation is therefore important. The indirect estimation methods attempted so far are based mainly on Stable Population Theory using Coale and Demeny West Model Life Tables. The present paper attempts to (i) estimate the extent of under registration of deaths by age (5 years and above) and sex and (ii) construct life tables after correcting for under registration of deaths using nonparametric bootstrap. The results suggest that the extent of under registration varies from 20% to 30% for deaths in middle ages. Further, the expectation of life at age 5 is biased upward by two years for females and by five years for males due to age misreporting. Though the systematic age misstatement is probably the main culprit, even a random pattern of age misreporting can cause upward bias in expectation of life. Bootstrap is recommended as an alternative method for assessing adult mortality surveillance in India.