

Goodness of Fit of Finite Range Reliability Model for Testing Under-reporting of Infant Deaths in India

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Abstract

Developed countries are equipped with better recording and registration system of their vital events where most of the infants deaths are biological in nature. Contrastingly in countries like India, infant deaths are high due to environmental causes coupled with misconceptions due to lack of knowledge, digit preferences for age data responses and poor registration system for lack of infrastructural and resourceful manpower availability which leads to misreporting/underreporting and non-sampling errors in surveys for data on infant deaths. In this light, this paper is an attempt to fit a reliability model proposed by Mukherji and Islam (1983) for estimating misreporting/underreporting of deaths below the first year of life in two states, Andhra Pradesh and Orissa (India), diametrically opposite on the various demographic indicators especially Infant mortality rate. Data from Indian National Family Health Survey (NFHS) (1992-93) has been utilized to compute infant deaths by computing probability distribution function for Andhra Pradesh and Orissa and fitted into the model. There is a good fit for Andhra Pradesh compared to Odissa. United States Vital Statistics (1960) has also been considered for validation of the results. By examining the distribution of Expected and Observed deaths, we find that there is underreporting/misreporting at different months of age during infancy. The study reveals that there are more environmental problems along with underreporting of infant deaths, digit preference and poor registration system in Odissa than Andhra Pradesh. The study suggests that policy steps should be taken to improve physical environmental conditions and reporting and registration system for infant deaths in Odissa.

Keywords: Infants, Misreporting, Underreporting, Finite Range, Reliability Model, India