

# Dying in Silence: A Study on Mortality-Morbidity Gap in India

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## *Extended Abstract*

Self-reported morbidity i.e. measure of incidence of disease based on reported sickness has an *element of subjectivity*. This is so, as ‘feeling of being sick’ is characterized by adaptive preferences, health awareness and access to medical facilities for diagnosis of the ailments. Sen (2002) has argued along similar lines that an individual’s assessment of their health—which is the “internal view of health”—is directly contingent on their social experience; socially disadvantaged individuals will fail to perceive and report the presence of illness or health-deficits. Hence, measures of morbidity at times produce wicked gradients with the better-off reporting worse health status than the poor. However, mortality or death, observe no such tendency. Unlike morbidity, mortality is an *objective* measure based on “external assessment of health” and it is higher for poor and lower for better-off. In India, there are evidences of regions where the reported morbidity is higher, yet the mortality is low and vice versa. For instance, Uttar Pradesh (UP) has reported morbidity of 102 per thousand, which is far below Kerala’s figure of 251—the highest among States in India. However, in terms of under-five child mortality, Kerala has the lowest value at 16.3 whereas UP has the highest at 94.2 (2004 data).

This opposing observation in morbidity and mortality is a clear indication of lack of health-expectations in backward regions and underreporting of ailments resulting into a greater toll of death in the silence. Motivated from these evidences and from the fact that there is a dearth of literature on exploring the relation between morbidity and mortality in Indian context, this paper studies the difference between morbidity and mortality for Indian States. Using data from National Sample Survey (NSS) 60<sup>th</sup> round, the Indian States are classified into four

groups: (high mortal, high morbid), (high mortal, low morbid), (low mortal, high morbid), and (low mortal, low morbid). In order to capture the difference in mortality and morbidity the study conceptualizes Mortality–Morbidity Index (MMI). MMI is given in the following equation

$$MMI = \begin{cases} M_t - \frac{M_b}{2} & \text{if } M_t > M_b \\ \frac{M_t + M_b}{4} & \text{if } M_t \leq M_b \end{cases} \quad (1)$$

where,  $M_t$  and  $M_b$  are normalized mortality and morbidity values.  $M_t$  is measured in terms of under-five mortality, which can vary between zero (minimum i.e. no mortality under age five) and unity (maximum i.e. none survive till age five).  $M_b$  is measured in terms of proportion of ailing persons, which varies between zero (minimum) and unity (maximum); zero indicating none in the populace reporting sickness and unity indicating the other extreme where all reported sickness. MMI is so formulated that it satisfies the following boundary conditions.

- (i) The best conditions; no mortality and no morbidity, i.e., when ( $M_t=0; M_b=0$ ); then  $MMI=0$
- (ii) The worst condition (dying in silence); full mortality and no morbidity, i.e., ( $M_t=1; M_b=0$ ); then  $MMI=1$ .
- (iii) Intermediate condition (dying after full reporting); full mortality and full morbidity, i.e., ( $M_t=1; M_b=1$ ); then  $MMI=0.5$ .
- (iv) Intermediate condition (full reporting of illness, but no death); no mortality and full morbidity, i.e., ( $M_t=0; M_b=1$ ); then  $MMI=0.25$ .

Properties of the MMI measure are evaluated through different axioms like normalization, monotonicity, sensitivity and signalling. An empirical illustration is carried out ranking the States of India as per MMI. The study also investigates the determinants of MMI by considering State's income, education, urbanization, and health infrastructure (physical and personnel) and policy variables. The results show that higher MMI is explained mostly by poor health infrastructure, poverty and illiteracy. This study concludes deriving policy prescriptions from the analysis to promote health conscious society which makes denizen capable to be free from escapable morbidity and premature death.