Short report

Are self-reports of health and morbidities in developing countries misleading? Evidence from India

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ABSTRACT

Self-reported measures of poor health and morbidities from developing countries tend to be viewed with considerable skepticism. Examination of the social gradient in self-reported health and morbidity measures provides a useful test of the validity of self-reports of poor health and morbidities. The prevailing view, in part influenced by Amartya Sen, is that socially disadvantaged individuals will fail to perceive and report the presence of illness or health-deficits because an individual's assessment of their health is directly contingent on their social experience. In this study, we tested whether the association between self-reported poor health/morbidities and socioeconomic status (SES) in India follows the expected direction or not. Cross-sectional logistic regression analyses were carried out on a nationally representative population-based sample from the 1998 to 1999 Indian National Family Health Survey (INFHS); and 1995–1996 and 2004 Indian National Sample Survey (INSS). Four binary outcomes were analyzed: any self-reported morbidity; self-reported sickness in the last 15 days; self-reported sickness in the past year; and poor self-rated health. In separate adjusted models, individuals with no education reported higher levels of any self-reported, self-reported sickness in the last 15 days, self-reported sickness in the last year, and poor self-rated health compared to those with most education. Contrary to the prevailing thesis, we find that the use of self-rated ill-health has face validity as assessed via its relationship to SES. A less dismissive and pessimistic view of health data obtained through self-reports seems warranted.

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Introduction

Self-reported measures of poor health and morbidities from developing countries tend to be viewed with considerable skepticism. In an influential editorial, Amartya Sen argued that there is a fundamental disconnect between an individual's subjective perception of their health and the objective or actual health condition that they may have (Sen, 2002, 1993). According to Sen, because an individual's assessment of their health is directly contingent on their social experience, socially disadvantaged individuals will fail to perceive and report the presence of illness or health-deficits (Sen, 2002). For instance, an individual with no formal knowledge of diseases but residing in an area with substantial disease burden that has inadequate social infrastructure facilities may be inclined to treat disease symptoms as "normal" given their lack of awareness, and therefore, health expectation. Sen, therefore, reasons that perceptions and self-reports of health – which he refers to as the "internal" view of health – can be "extremely misleading" as they obscure the true extent of health deprivation more likely to be captured through "objective" or "external" assessments (Sen, 2002).

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The empirical test of the validity of self-reported health and morbidity measures in developing countries is based on examining the association between socioeconomic status (SES) and self-reported health and morbidity measures. If a positive (or a null) association between SES and self-reports of poor health/morbidities is observed such that high SES individuals report *higher* (or the same) prevalence of ill-health compared to low SES individuals, then such evidence has been used to cast doubt on the use of self-reported measures of health or disease status in population-based surveys. In a recent paper Manesh and colleagues used a similar approach to assess social gradients in mothers' report of diarrhea among children and argued that reported measures of morbidities are misleading, based on the absence of an observed association (Manesh, Sheldon, Pickett, & Carr-Hill, 2008). For instance, in arguing against the use of self-reported health measures, Sen compared aggregated self-reported morbidity rates and life expectancy between two Indian states – Kerala and Bihar, with Kerala reporting considerably higher rates of morbidities despite experiencing the highest level of longevity, while Bihar with low levels of longevity reporting lower rates of morbidities (Sen, 2002). The argument was that Bihar, with a substantially illiterate population and meager health provision, may have a very low perception of illness, even though there is likely to be substantial disease burden as reflected in Bihar's low life expectancy figures. Conversely, Kerala, with high levels of literacy and better health provision, is relatively well positioned to identify and perceive morbidities. As Sen put it, "in this charmed internal comparison", Bihar would be incorrectly identified as "healthy" when compared to Kerala. Others have also used this motivation to criticize the use of self-rated health (King, Murray, Salomon, & Tandon, 2004; Salomon, Tandon, & Murray, 2004).

It may be noted that the aggregated data on morbidity rates reported by Sen in his 2002 editorial, is from the "mid-1970s" (Sen, 2002). Indeed, the data from more recent years on life expectancy and self-reported morbidities in Kerala and Bihar show that Bihar not only has lower life expectancy as compared to Kerala, it also has higher levels of self-reported morbidities, as one would expect (Fig. 1).
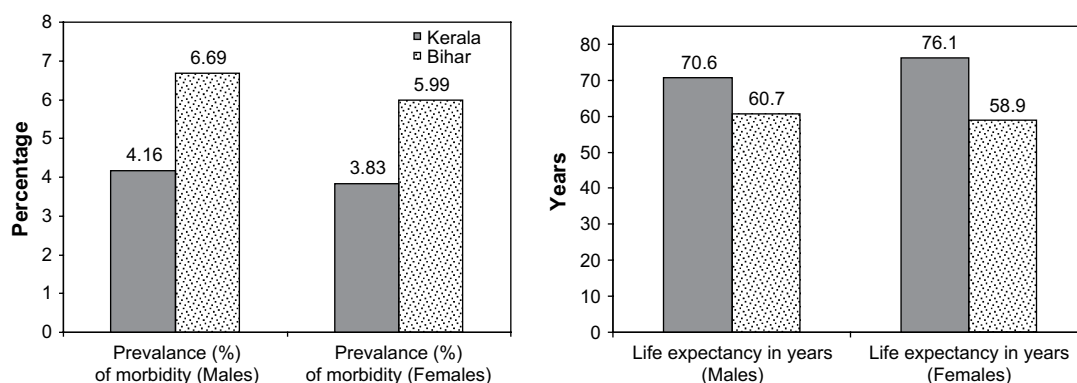
We examined the most recent, large-scale and nationally representative disaggregated data to investigate the association between education and various self-reported poor health/morbidity measures in India; a country classified by the World Bank as a "low income" economy, with a per capita gross national income of $875 or less, in 2005 (Bank, 2005). We tested whether there is, in fact, an inverse association (as expected) between SES (as measured by educational attainment) and self-reported ill-health in India. If the direction of the educational gradient is counter to our hypothesis – or if no association is observed – this would tend to lend credence to the view that self-rated measures of health are inherently untrustworthy in this developing country setting.

Methods

We used two data sources for the study: the 1998–1999 Indian National Family Health Survey (INFHS), (IIPS, 2000) – a large representative cross-sectional survey of households and individuals aged <1 to 95 years; and the 1995–1996 and 2004 Indian National Sample Survey (INSS) of households and individuals (Government of India, 1998, 2006).

Four separate and different types of self-rated ill-health were analyzed from the two data sources. The INFHS obtained self-reported morbidity based on the respondents' answer to the following question: "*Does anyone, listed as a member of this household in this survey, suffer from 'asthma/malaria/jaundice/tuberculosis?", asked separately for each morbidity.'* We created a binary self-reported morbidity variable with 1 if the individual reported any one of the listed morbidities, 0 otherwise. The INSS obtained self-reported morbidity based on the respondents' binary answer (yes or no) to two separate questions: "*Have you been sick in the last 15 days?*" and "*Have you been sick in the last 365 days?*". The respondents in both the surveys answered the presence or absence of morbidity for themselves as well as for other household members. Finally, in one sub-sample of elderly population aged 60 and above, the INSS also measured overall health perception using the following question: "*What is your perception about your current state of health: excellent/very good; good/fair; poor?*" We created a binary self-reported poor health variable for

Fig. 1. Life expectancy and age-adjusted prevalence of any reported morbidity for men and women in Kerala and Bihar. Source: India: Human Development Report 2005, UNDP; Bihar and Kerala: Registrar General of India (2003) SRS Based Abridged Life Tables, SRS Analytical Studies, Report No. 3 of 2003, New Delhi: Registrar General of India; INFHS-2, 1998–1999.