

Spatial context and health outcomes of older adults in India: Evidence using geospatial regression analysis

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In this paper, we model the spatial determinants of short term illness among older adults in India. A particular focus of our analyses is to use of spatial descriptive statistics and spatial regressions to examine the role of health infrastructure in influencing health outcomes. Sociologists and demographers have established how social processes are embedded within a spatial context (Woods & Rees, 1986; Goodchild & Janelle, 2004; Logan et al, 2010; Matthews & Parker, 2013); specifically, how issues relating to access, disease environment, climate change, ideas and behavior of people living in close proximity can affect health outcomes independent of individual characteristics (Gallup & Sachs, 1998; Basu, 2000; Patz, et. al, 2005; Voss, 2007; Luke & Xu, 2011). Furthermore, in a culturally diverse country such as India, community affiliations-caste, ethnicity, religion, kinship group or clan- and social scripts (about living arrangements, marriage, mobility and gender) can intersect to influence health outcomes, regardless of individual attributes (Malhotra, et.al 1995; Munshi & Rosenzweig, 2009; Luke & Xu, 2011). Additionally, India offers a particularly interesting context to examine such relationships given the sociocultural diversity and distinct regional patterns in demographic outcomes; for example, southern states generally performing better in terms of lower levels of infant and maternal mortality, higher rates of vaccination and higher rates of healthcare utilization, than elsewhere in the country (Dyson & Moore, 1983; Bloom, et al. 2001; Desai, et al. 2011). Our preliminary analyses showed wide regional differentials in prevalence of short term illness among older adults, availability and functionality of health services, and their utilization . Furthermore, consistent with previous studies, residential location (urban vs rural) was an important determinant in seeking treatment when sick. These findings underscore the intersecting influences of access, location, community behavior and social institutions.

Drawing from the theoretical frameworks of neighborhood effects research and sociological literature on social stratification, the current study uses data from two sources, namely, *India Human Development Survey (IHDS,2004-05)* and *District-level Household and Facility Survey (DLHS-3, 2007-08)*. The short and long term morbidity and their socioeconomic and cultural correlates came from the IHDS data, while information on medical infrastructure and health care utilization were drawn from the DLHS-3 data. Results from spatial regression analyses highlight the importance of well-functioning health systems (rather than availability) in influencing likelihood of illness. Additionally, results indicate that the interactions between kinship, community behavior and health outcomes are heightened in rural than urban areas. The study advances demographic knowledge on health in India by 1) locating gerontology within spatial science; and 2) identifying spatial determinants of health differentials among older people at a crucial time when India is experiencing major socioeconomic, demographic and policy changes.

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