Quest Journals
Journal of Research in Humanities and Social Science
Volume 14 ~ Issue 5 (May 2026) pp: 65-71
ISSN(Online):2321-9467
www.questjournals.org

Research Paper

Socio-Demographic Differentials of Morbidity in India: Evidence from the NSS 80th Round

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ABSTRACT
The sociodemographic differentials in morbidity observed within India were examined using data from the 80th round of the National Sample Survey on Health, conducted from January 2025 to December 2025. This nationwide assessment included 139,732 households. The prevalence of illness was higher among females than males, highlighting the phenomenon of "female excess." Urban regions reported ailments more frequently than rural localities, and maximum disease frequency was observed among senior citizens in the 60 and above age groups. These findings necessitate concentrated interventions focusing on sociodemographic variations to combat rising health burdens in the nation.

KEYWORDS
NSS, PPRA, Socio-demographic differentials, gender, sector age group, women excess, urban excess

*Received 06 May., 2026; **R**evised 14 May., 2026; **A**ccepted 16 May., 2026* *© The author(s) 2026.*
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I. Introduction

The bidirectional association between health and economic development has been documented by a multitude of theoretical and empirical studies. One of the chief impediments to sustained growth is morbidity (1), as ill health frequently leads to impoverishment (2). Consequently, increasing health sector investment has been prescribed as a remedy to improve access to care for the poor, thereby combating poverty and the overall disease burden (3). Ultimately, enhanced health outcomes bolster economic performance (4) and empower nations to advance along the trajectory of development.

India has been undergoing a significant epidemiological transition alongside structural changes in recent years. This transformation in the nation's morbidity pattern involves a shift from the dominance of communicable diseases toward chronic, non-communicable conditions. From a 47.7% incidence of communicable disease burden in 1969, there was a decline to 22.1% by 1995; conversely, non-communicable diseases increased from 35.9% to 55% during the same period (5). Over the last two decades, morbidity in India has doubled, driven by a simultaneous rise in both infectious and non-communicable diseases (6).

As morbidity measures are employed to comprehend the health status of a population (7) and to evaluate the efficacy of the healthcare delivery system (8), investigations into periodic changes in a nation's illness patterns disclose vital details regarding epidemiological transition. Furthermore, these inquiries help gauge the current population health scenario. This paper examines the contemporary morbidity pattern in India and investigates the role of socio-demographic differentials—such as gender, sector, and age group—in determining the country's present disease landscape.

II. Data and Methods

The present study utilizes the NSS 80th Round report on Household Social Consumption: Health (January–December 2025). This marked the eighth full-fledged, all-India survey dedicated to the health sector, gathering quantitative data on general morbidity, profiles of ailments and their treatment, hospitalization, and associated expenditures. The survey collected information from 139,732 households spanning both rural (76,296) and urban (63,436) areas across various states and union territories.

The Proportion of Persons Reporting Ailment (PPRA**)** during the last 15 days, expressed as a percentage, serves as the primary measure of morbidity in the NSSO survey. In the survey, the 15-day PPRA percentage was

calculated by gender and subsequently averaged to determine the national morbidity mean for the country. Using this domestic benchmark as a reference point, logistic regression was performed to evaluate the impact of gender, age group, and sector (rural and urban) on morbidity patterns in India.

III. Results

3.1 **Socio -Demographic differentials of Morbidity**

Analysing the intersection of gender, age group, and sector in relation to morbidity helps in understanding the role these factors play in making a population vulnerable to ailments.

Table 1
Proportion of persons responded as ailing during the last 15-day period (PPRA (%)) by gender and age-groups

Age Group (Years)	Rural Male (%)	Rural Female (%)	Rural Person (%)	Urban Male (%)	Urban Female (%)	Urban Person (%)	All India Male (%)	All India Female (%)	All India Person (%)
0–4	10.5	8.8	9.7	10.8	10.0	10.4	10.6	9.1	9.9
5–14	6.3	5.1	5.7	6.1	5.5	5.8	6.2	5.2	5.7
15–29	3.5	5.1	4.3	4.5	5.4	4.9	3.8	5.2	4.5
30–44	5.8	10.2	8.0	7.0	10.9	9.0	6.3	10.4	8.4
45–59	18.1	23.6	20.9	22.6	28.6	25.6	19.6	25.3	22.5
60 & above	39.1	41.6	40.3	49.7	53.2	51.5	42.5	45.4	43.9
All Ages	11.1	13.4	12.2	13.4	16.6	14.9	11.8	14.4	13.1

Source: NSO,2026

3.1.1. Morbidity by Gender.

Gender is significant in health as it encompasses the behavioural and social differences between men and women that contribute to distinct clinical outcomes. The data establishes a female excess in morbidity, reported over the last 15 days, of 14.4% over the male PPRA of 11.8%, which can be attributed to heightened vulnerability, greater tendency to report illness, and an increased perception of infirmity among women due to personal, biological, and genetic factors.

3.1.2. Morbidity by Sector.

The urban population in India ails about 2.7% more than the rural residents of the country, vindicating all earlier NSS surveys on health. These findings reiterate the metropolitan excess in morbidity observed all over the globe, which is often attributed to the accessibility, affordability, and availability of medical care in the city scenario besides the environmental hazards of modern living. Being a town inhabitant brings forth a number of downsides, one being the likelihood of falling ill more than their country counterparts.

3.1.3. Morbidity by Age Group

Across all age groups, out of 100 Indians, 13.1 are likely to have been ill during the last 15 days. The age group of 0-4 years, commonly termed as young children, exhibits more illness (9.9%) than the 5 - 14 category (5.7%), which shows a lower morbidity rate. This childhood tier is healthier than the infants but more likely to fall ill than the 15–29 age group, who are the most robust of the population, their PPRA rate being the minimum across all demographics. The 30–44 age classification too shows an ailment tendency, which is lower than the national average. From the 0–44 bracket, all categories show morbidity trends below the countrywide mean.

The post-45 classes exhibit reverse patterns of infirmity in the nation. For the 45–59 group, morbidity is 22.5%. This is a tipping point from where a huge transition occurs, and these figures become dramatic in the 60 and above group with a PPRA of 43.9%. The progression of these trends in India across age groups unveils a pattern where, starting with moderate risk in early childhood, they descend to lower levels with advancement in years and reach a nadir at 15–29 ages. With further maturity, everything remains stable until the age of 45 where the trajectory flips, reaching its peak for those aged 60 and over.

3.2. **Logistic Regression Analysis**

Table 2
Comprehensive Logistic Regression Model: All India PPRA

Variable	Odds Ratio
National (Reference)	1.00
I. SECTOR (ALL INDIA)	
Rural	0.92
Urban	1.16
II. GENDER (ALL INDIA)	
Male	0.89
Female	1.12
III. AGE GROUPS (ALL INDIA)	
0–4 years	0.73
5–14 years	0.40
15–29 years	0.31
30–44 years	0.61
45–59 years	1.93

Variable	Odds Ratio
60 & above	5.19
IV. GENDER BY SECTOR	
Rural Male	0.83
Rural Female	1.03
Urban Male	1.03
Urban Female	1.32
V. RURAL SECTOR BY AGE	
Rural: 0–4 years	0.71
Rural: 5–14 years	0.40
Rural: 15–29 years	0.30
Rural: 30–44 years	0.58
Rural: 45–59 years	1.75
Rural: 60 & above	4.48
VI. URBAN SECTOR BY AGE	
Urban: 0–4 years	0.77
Urban: 5–14 years	0.41

Variable	Odds Ratio
Urban: 15–29 years	0.34
Urban: 30–44 years	0.66
Urban: 45–59 years	2.28
Urban: 60 & above	7.04
VII. MALE BY AGE GROUP	
Male: 0–4 years	0.79
Male: 5–14 years	0.44
Male: 15–29 years	0.26
Male: 30–44 years	0.45
Male: 45–59 years	1.62
Male: 60 & above	4.90
VIII. FEMALE BY AGE GROUP	
Female: 0–4 years	0.66
Female: 5–14 years	0.36
Female: 15–29 years	0.36
Female: 30–44 years	0.77

Variable	Odds Ratio
Female: 45–59 years	2.25
Female: 60 & above	5.52

Significance: $p < 0.01$ based on NSS 80 sample size (N = 1,39,732 households).
Source: NSO,2026

This model presents demographic breakdowns of morbidity differentials, such as gender, age, and sector, from the NSS 80th Round (2025). The Odds Ratio (OR) indicates the relative likelihood of reporting an ailment compared to the national average. The reference baseline is National PPRA = 13.1% (Odds = 1.00). This metric was calculated to comprehend how an Indian is likely to fall ill based on these variables.

Of all the background characteristics, the age group of an individual is the most influential factor. The cohorts above 45 years—specifically 45–60 and 60 and above—display odds ratios of 1.93 and 5.91, respectively. Age and morbidity demonstrate a U-shaped progression, with higher values for the OR calculated for those aged 0–4 at 0.73, falling to 0.40 for the 5–14 category, and reaching the trough at 15–29 with an OR of 0.31 before rising to 0.61 for the 30–44 range. Following this stage, there is exponential growth in the ratio.

Sectors display disparities in the likelihood of outcomes relative to the national average. An urban resident has an OR of 1.16 compared to a rural dweller where the OR is 0.92, implying that residing in city areas increases the chance of falling ill by 16% relative to an average Indian, whereas a countryside inhabitant is likely to be morbid by 8% less than a typical citizen.

The multivariable logistic regression analysis of gender and sector reveals that urban females present an OR of 1.32, whereas rural males exhibit the lowest likelihood of falling ill, which is 17% less than the average Indian. The rural female and urban male have 3% greater chance of being morbid than a typical citizen. This result confirms that women living in urban areas confront the maximum risk as far as ailments are concerned.

Gender categorisation of age groups reveals that elderly women who are over 60 years of age face higher odds (5.52) than men in the same category (4.90). The 60-plus females have morbidity rates about five and a half times greater than the national average, and males about five times. This suggests a strong association between old age and morbidity. For the first group of 0–4 years, the trend is reversed; females have an OR of 0.66 and males, 0.79.

Analysis of sector by age reaffirms the earlier finding that among the various age groups in the urban and rural sectors, the urban category of 60 years and above possesses the maximum odds, 7.04 times higher than that of the national average for the predicted outcome, followed by rural residents of the same age group whose OR is 4.48.

IV. Discussion

Across the six age groups analysed, excess morbidity was observed for women in four categories, while men showed higher rates in only two. When comparing these figures, the disparity in the male-dominated groups was insignificant relative to the pronounced excess morbidity seen in women. This establishes an overall higher prevalence for females, which is frequently attributed to illness behaviour and health reporting tendencies (9), as well as gendered differences in how symptoms are perceived, evaluated, and acted upon (10).

The urban excess morbidity noticed in this study refutes the dictum that metropolitan infrastructure improves health outcomes; rather, city living deteriorates robustness. Poorly designed environments foster health hazards, hinder active lifestyles, and cause pollution (11,12), which diminishes the well-being of urban populations.

The progression of morbidity across age groups follows a U-shaped trajectory, with the elderly population of the nation experiencing an explosive illness tendency that is four times the national average. All early health advantages begin to vanish as an individual reaches 45, at which point the country falls into a disease trap. In a nation like India, where aging is a critical concern—with 12.5% of the population projected to exceed 60 years by 2030 and reach approximately 20% by 2050 (13)—this demographic shift could overburden the healthcare system.

This analysis explores the complex interplay of sociodemographic differentials in determining the morbidity scenario of the nation. This calls for gender-sensitive, sector-concentrated, and age-specific interventions with a life-cycle focus to reduce the burden of illness in the country.

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