

## Research Paper

## The prevalence of disability in elderly in India – Analysis of 2011 census data

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**Abstract**

**Background:** Advancing age leads to physical and sensory impairment with varying degrees of disability. There is lack of publication focusing on disability of elderly in India with a countrywide state-based analysis of all types of disabilities.

**Objective:** To measure the prevalence of disability and describe the types of disability in the elderly Indian population by gender, advancing age, states and geographical regions.

**Methods:** The 2011 Census cross-sectional survey data restricted to elderly in India was analyzed. ‘Elderly’ is defined as a person who is of age 60 years or above. Disability rates per 100,000 elderly population and age-adjusted disability rates were calculated.

**Results:** A total of 5,376,205 elderly individuals were disabled in India in 2011; disability rate of 5178 per 100,000 elderly population. Movement and seeing disabilities individually accounted for 25% of total disabilities and disability in hearing was 19%. Disability rates in 17 Indian States and Union Territories were above the national average. Disability rates increased as age advanced with the highest disability rate of 8409 per 100,000 among people aged 80 yrs or above. The disability rates were higher in males than females (5314 vs. 5045 per 100,000) and in rural compared to urban areas (5593 vs. 4181 per 100,000). Currently married and working populations had lower disability rates.

**Conclusion:** One in every twenty Indian citizens aged 60 yrs and above is either physically or mentally disabled. Identification of the underlying causes, employing effective and focused preventive strategies will help to reduce the prevalence of disability in the elderly. © 2016 Elsevier Inc. All rights reserved.

**Keywords:** Disability; Elderly; Mental; Physical; Census

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The International Classification of Functioning, Disability and Health (ICF) defines disability as an umbrella term for impairments, activity limitations, and participation restrictions.<sup>1</sup> About 15% of the world’s population (based on 2010 global population estimates) is estimated to live with some form of disability.<sup>2</sup> As age advances, biological and physical nature of the body is likely to deteriorate which leads to physical and sensory impairment and in turn bring about varying proportions of disabilities.<sup>3</sup> The Government of India’s ‘National Policy on Older Persons’ defines ‘elderly’ as a person who is of age 60 years or above.<sup>4</sup> In 2011, the proportion of elderly in India was about 8.6% of the overall population. The proportion of elderly ( $\geq 60$  yrs) in India projected for

2026 is about 12.17% of the overall population.<sup>5</sup> A previous systematic review has reported lack of schooling, living in rental housing, chronic diseases, arthritis, diabetes, visual impairment, higher body mass index, poor self-perceived health, cognitive impairment, depression, slow gait, sedentary lifestyle, tiredness while performing daily activities, and limited diversity in social relations as risk factors for functional disability in the elderly.<sup>6</sup>

Article 41 of the Indian Constitution states that the State shall within the limits of its economic capacity and development; make effective provisions for securing the right to work, education and public assistance in case of unemployment, old age, sickness and disablement. People with disabilities suffer undue hardships and they continue to be marginalized, discriminated and abused.<sup>7</sup> Access to affordable health care and rehabilitation has to be offered to the disabled persons. Disability among the elderly in India has been documented in various cross-sectional studies

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which are limited to geographical regions.<sup>3,8–10</sup> However, disability of elderly in India with a focus on countrywide state-based analysis of all types of disabilities has not been reported. There is a need to quantify the prevalence of disability since this information is essential for the Government to plan policies, allocate adequate resources and implement appropriate programs for persons with disability. In India, information on physical and mental disability is captured during the census survey once in every 10 years and also during periodic surveys by National Sample Survey Organization (NSSO). The limitations of disability related data collection in census survey include only few questions on disability restricting the available information, high non-response rates and under-enumeration because of the complexity and sensitivity of the question/s. In addition, data collection is infrequent — usually every 10 years and the time between data collection and data dissemination can be considerable to understand the current prevalence rates.<sup>11</sup> Nevertheless, the 2011 census data on disability covers the entire country and has information for all types of disability following a standard definition for each.

The objective of this analysis was to measure the prevalence of disability and describe the types of disability in the elderly Indian population based on the available data on disabilities in the public domain under the Census 2011 database. We also estimated the distribution of disabilities by gender, advancing age, states, geographical regions, work and marital status in the elderly.

## Methods

This manuscript is based on analysis of the 2011 Census data of India. Indian census survey is conducted once in every 10 yrs following an extended de facto canvasser method. Under this approach, data is collected from every individual by visiting the household and canvassing the questionnaire all over the country, over a period of three weeks. The count is then updated to the reference date and time by conducting a Revisional Round.<sup>12</sup> The census questionnaire had three questions pertaining to disability which captured information on 1) presence of mental or physical disability; 2) the disability type and 3) multiple disabilities [maximum of 3 disabilities] (Table 1).<sup>11</sup>

Prior to the survey, the census enumerators were trained to obtain the information on disabilities. Considering the sensitive nature of the questions related to disabilities, they were instructed to build rapport with the respondents first and inform them about the importance of acquiring disability related information. In addition, the respondents were reassured that the individual information will be kept confidential. The question(s) on disability was asked for all persons in the household. The enumerator was instructed not to assume that just because someone looks ‘alright’ or ‘normal,’ she/he may not have disability. The enumerator was instructed to find out if any member of the household had any form of mental and/or physical disability. While the main respondent might be answering all the questions the enumerator had to make every possible effort to seek information from the disabled member of the household herself/himself, if she/he was present at the time of census taking and was able to provide correct information. The enumerator was instructed to use simple and non-derogatory language and to explain disability in terms of difficulty in doing any functions of daily living (taking care of oneself, gaining education, taking up a job) or participating in all/some spheres of life.<sup>11</sup> The enumerator was also instructed that he/she should not avoid or rush through the question and give time for the person to respond. They were instructed not to be in a hurry to write the Code of disability and ask if the person had more than one disability. The person may not ‘look’ disabled, but may have difficulty in seeing, hearing or any other disability. Hence, the census enumerators were instructed to record the person’s response as it is. The census enumerators were instructed not to try to probe on the cause, cure, treatment or rehabilitation regarding the impairment or disability reported.<sup>11</sup>

Temporary impairments like limitation of movement due to fractures or temporary illnesses were not counted as disability. The definitions used for various types of disability are provided in the Annexure 1.<sup>11</sup>

## Data analysis

Disability rates per 100,000 population were calculated. The numerators were number of disabled persons by type of disability and age, gender, type of residence

Table 1  
Questions related to disability in the Census of India 2011 questionnaire

Question and instructions	9 (a). Is this person mentally/physically disabled? Yes — 1/No — 2 If the person has a disability please put Code No. 1. If the person does not have a disability, put Code No. 2	9 (b). If, “YES” in 9 (a), give code in the box against 9 (b) from the list given below. In seeing — 1 In hearing — 2 In speech — 3 In movement — 4 Mental retardation — 5 Mental illness — 6 Any other — 7 Multiple disability — 8	9 (c). If “multiple disability” (Code 8) in 9 (b), give maximum three codes in boxes against 9 (c) from the list given below. In seeing — 1 In hearing — 2 In speech — 3 In movement — 4 Mental retardation — 5 Mental illness — 6 Any other — 7 Multiple disability — 8
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