

Research Paper

Prevalence of disability among adults using Rapid Assessment of Disability tool in a rural district of South India

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Abstract

Background: There are different estimates of disability prevalence reported in India due to the differences in definitions and methodologies. Reliable data is needed to plan effective disability inclusive strategies.

Objective: The objective of this study was to determine the prevalence and risk factors associated with disability among adults ≥ 18 years of age in Prakasam district of Andhra Pradesh using the Rapid Assessment of Disability (RAD) tool.

Methods: The RAD survey was conducted in 50 villages (clusters) of Ongole division of Prakasam district. A two-stage cluster random sampling was used. Within each village 80 participants were surveyed. Compact segment sampling was used to determine the houses included. A person was reported as disabled based on their responses to the functioning section of the RAD tool.

Results: A total of 4134 adults were included. The overall prevalence of disability was 10.4% (431 adults). The highest prevalence of functional impairment was related to mobility (4.7%) followed by vision (2.1%) and fine motor (1.8%). The prevalence of psychological distress was 2.3%. Disability was significantly more prevalent in the poor socio economic group (OR 2.8; 95% CI: 1.5; 5.0) and among unemployed (OR 3.6; 95% CI: 2.3, 5.5). The prevalence of disability was strongly associated with age where, participants aged 70 years and over were eleven times more likely to report disability than younger age groups.

Conclusion: The high prevalence of disability in the region points to disability being of public health concern and as a health condition needing urgent attention and specific interventions. © 2016 Elsevier Inc. All rights reserved.

Keywords: Adults; Disability; India; Prevalence; Rapid assessment

A majority of adults with disabilities live in low and middle-income countries (LMICs); however, measuring disability to estimate prevalence in LMICs remains a major challenge.¹ The variation in disability prevalence rates can be related to several factors including differing definitions of disability, different methodologies of data collection, and variation in quality of study designs.^{2,3} Generating reliable estimates of disability have important implications for policy and development of disability inclusive activities.⁴

In fact, different instruments within the same country often report very different rates of disability.⁵

Censuses and surveys around the world take different approaches in measuring disability. In India, the census is based more on measuring impairment whereas the National Sample Survey (NSS) measures activity limitation.⁵ Generally surveys tend to report higher rates of disability than censuses. For instance, in India the World Health Survey reports a disability prevalence of 24.9%⁶ compared with 2.2% in the Census.⁷ This can be explained, in part by the more detailed and elaborate questions asked in surveys and the more extensive training and motivation of the enumerators conducting the survey.⁸

The International Classification of Functioning, Disability and Health (ICF) defines disability as an

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umbrella term for impairments, activity limitations and participation restrictions. It implies the negative aspects of the interaction between a person's health conditions and that individual's contextual factors (environmental and personal factors).⁹ A review comparing the tools that measure disability prevalence showed that there is no single existing instrument that both encompasses the ICF domains and has the capacity to be used to measure the effectiveness of disability inclusive development activities.⁴ Such an instrument, which is effective in measuring disability, should be both sensitive and specific to only include persons with disabilities and also measure disability-specific outcomes at program level.⁴

In this study, we have used the Rapid Assessment of Disability (RAD) tool to measure the prevalence of disability and understand the association of various socio-demographic aspects of persons with disability. The RAD tool has been specifically designed to measure disability based on activity limitations similar to the Washington Group questions for measuring disability (WG)¹⁰ and to measure the impact of disability on level of participation of persons with disabilities in the community. The RAD tool was developed by the Nossal Institute for Global Health in collaboration with the Centre for Eye Research Australia and validated in Bangladesh and has been tested in a different cultural context in Fiji.^{11,12} However, this is the first time the RAD tool has been used in India.

The primary objective of this study was to use the RAD tool to collect baseline information on the prevalence of disability among adults (≥ 18 years) in Ongole division of Prakasam district, Andhra Pradesh and to identify the barriers to participation in society faced among persons with disabilities. We also determined the impact of disability on the level of participation of persons with disabilities in the community, and on well-being and access to services, including barriers to access. This will establish a baseline that can be used to assist measuring effectiveness of efforts toward disability inclusion in the area. In this paper, we describe results of the baseline survey on the prevalence of disability in Ongole division of Prakasam district of Andhra Pradesh, India.

Methods

A cross sectional population-based survey was conducted in Prakasam district of Andhra Pradesh using the RAD tool. The survey was carried out between September and November 2014. The study received ethical approval from the institute ethics committee at the Indian Institute of Public Health, Hyderabad.

Study design and sampling technique

The total population of Prakasam district as per Census 2011 was 3,392,764.¹³ Prakasam district is divided into

three main revenue administrative divisions: Ongole, Markapur and Kandukur.¹⁴ For our study, we purposively identified the Ongole division for inclusion as it is the most densely populated division in the district. The total population of Ongole division was 14, 63, 264 in 2011.¹⁵ There are twenty mandals (smallest government administrative units) in Ongole division and representative villages were randomly selected from each of these mandals. This study only targeted rural areas.

A two-stage cluster random sampling was used. All 259 villages (clusters) in Ongole division were included in the sampling frame. Initially, 50 villages were randomly selected from the sampling frame through probability proportionate to size sampling. Compact segment sampling was used in the second stage to select households within the village. For each of the selected villages, a detailed map of the village was prepared showing important landmarks and roads. These were prepared either from details obtained from the Census office, local village administration or mandal headquarters. Each village was divided into clearly marked segments with households comprising 80 adults (aged 18 years and above). One segment was randomly selected from each village to conduct the survey.

Sample size

The sample size was calculated using the formula $n = d \times d [b(1 - b)/(c \times c)]$; where, d – 95% CI; b – estimated prevalence of disability in the community, c – precision or margin of error. We used a prevalence estimate of 4%, margin of error of 20% and design effect of 1.5 in generating the sample size. Since the RAD survey is only conducted among adults, we have increased the prevalence estimate to 4% because prevalence in the lowest age category is much lower than what we see in elderly and so we need to be adequately powered to find prevalence in that age group. Using the above formula, we estimated a total sample of 4000 adults (≥ 18 years) to be surveyed.

Each village was divided into segments comprising approximately 27–30 households assuming 3 adults per household and a response rate of 85%. Eighty participants were selected from each of these villages. If a sample of 80 adults was not reached in a segment another randomly selected segment was included until the required sample size was achieved. To reach the desired sample size we had to survey a total of 50 villages.

Data collection

Our research team comprised an epidemiologist, one research assistant and four field investigators. The team included female investigators also. They underwent a rigorous one-week training workshop on the RAD survey for data collection. The workshop included both lectures and practical sessions with training on different interviewing styles. The team conducted mock interviews first

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