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## The Differently Aabled Population: A spatial Analysis from socio-Regional Perspective in India

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### Abstract

In India, the needs of people with disability are often neglected. They have far long remained a neglected category or at best, provided some basic welfare measures but are not looked as an inclusive population, which needs to be treated as equals. This work is indeed a small leap in this direction to understand incidence and prevalence of disability.

The paper is based on secondary data extracted from 58<sup>th</sup> round of NSSO survey on unit level data. It is an attempt to study the spatial analysis of the incidence and prevalence rate of disability in different regions of Indian states. The study looks into the condition of the differently able population. The NSSO has divided India in to 78 regions.

**Keywords:** incidence rate, prevalence rate, disability, differently abled, regional variation,

### 1. Introduction

The social and economic scenario of the country has been changing rapidly due to globalization, urbanization, industrialization and commercialization. In this process, people with disability due to their inherent vulnerability have lagged behind from the rest of the society. In India, the disability issue is treated as a measure of welfare rather than human rights issue, needing equal opportunity and inclusion with rest of the society.

Natural phenomena exhibit differences or potential differences. These differences take the form of inequality when the basis of selection, evaluation and marking out become cultural instead of natural.<sup>[1]</sup> There is also evidence to indicate exclusiveness of differently abled population in several key areas like; employment, education etc. The slow progress in expanding opportunities for differently abled people in India results in their marginalization and a substantial loss to their abilities, which could have provided support to the society in developing human capital and economy.<sup>[2]</sup>

The problem of disability is gaining more and more importance all over the world. The planners of India very well understood the significance of the problem hence have taken several policy measures to provide support and other measures to mainstream them.<sup>[3]</sup>

There are several factors responsible for the problem. Heredity factor contributes a lot in producing disabled children. Other prominent factors for making people disabled are inequity in the provision of nutrition and proper healthy diet to the mother and baby, right from the time of conceiving inside mother's womb due to poverty and cultural and religious dogmatism. Disability has also increased due to the emergence of industrialization, fast changes in communication, opportunity of mobility from one place to another, accidental illness, war and non availability of proper safety and medical facilities.<sup>[4]</sup>

After four decades of independence the issues related to persons with disabilities was addressed by the Government of India by enacting legislation for Persons with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995. The Act provides for education, employment, creation of barrier free environment, social security, and other opportunities etc. <sup>[5]</sup>

Societies are now looking disability as social issue rather than medical issue. The earlier emphasis was only to provide medical support rather than creating barrier free atmosphere for their inclusion with the society. The earlier emphasis on medical rehabilitation has now been replaced by an emphasis on social rehabilitation. <sup>[6]</sup>

For the welfare measures or policies, it is necessary to understand their spatial pattern and

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specific requirement. In view of the marginalization and exclusion of disabled from the mainstream, the present study examines the spatial variation in incidence and prevalence rate of disability by social group, gender and rural urban area wise.

The paper is based on secondary data extracted from 47<sup>th</sup>(1991) and 58<sup>th</sup> (2002) round of NSSO survey on unit level data. The NSSO has divided India in to 78 regions.

**Methodology**

**(I) Prevalence Rate-** of a disease can be defined as the proportion of the population having the disease at the moment or at a time. Number of disabled person per 100,000 populations is measured for NSSO region wise.  $P = \text{Number of differently abled persons prevailing in total population at a particular point of time} \div \text{Population of the area exposed to the risk of the disease} * 100,000$

**(II) Incidence Rate** – the incidence of disease can be defined as the ratio of new cases of the disease diagnosed in a particular period divided by the persons- year lived in the population during that period.  $O I = \text{Number of new cases of the disability occurring in a given period of time, usually a year} \div \text{Duration of exposure of the population to the disease in the given period} * 100,000$

**Discussion and Results**

**Spatial Distribution of Prevalence Rate of Disability-**The Prevalence rates (number of disabled persons per 100,000 persons) recorded for disabled persons were 1886 and 1775 respectively in 1991 and 2002, depicting a significant decline from 1991 to 2002. The prevalence rates have recorded a significant decline for both gender groups in case of both rural and urban areas during 1991-2002.

**Prevalence Rate in India (per 100,000 persons), 1991-2002**

Year	Rural			Urban			Both R+U		
	Male	Female	Total	Male	Female	Male	Female	Male	
2002	2118	1556	1846	1670	1331	1449	2000	1493	1775
1991	2277	1694	1995	1774	1361	1579	2144	1609	1886

Source: NSSO Rounds 47th, 1991, and 58th Round, 2002.

**Regional Analysis of Prevalence Rate of Disability** – Prevalence rate is useful to show micro level variations and to depict the spatial variations accurately. Hence, the analysis has been attempted for NSSO regions of the country to examine the micro level spatial distribution of the prevalence rate of differently abled population.

In the mountainous state of the India, Jammu and Kashmir, Himachal Pradesh and Utrakhand, the disability prevalence rate was 1562, 2571, and 1791 respectively. However, when we look in to region wise trend it shows wide regional variation within the state. The overall disability prevalence rate for Jammu and Kashmir State was 1562. However, regional variations at the micro regions were significant. J&K mountainous regions recorded 2652 prevalence rate where as the two other regions of J&K Viz; outer hills and Jhelum valley region recorded 641 and 899 disability prevalence rates respectively, which were lower, compared to the mountainous region. The main cause of variation in the prevalence rates could be inaccessibility of the region, which leads to lower availability of social security and medical facility to these people. Same type of picture is depicted within the micro regions of Himachal Pradesh (2571) and Uttaranchal (1791) where most inaccessible areas recorded higher prevalence rates as compared to the socio-economically developed micro regions in the southern Himalayas, which have good accessibility network, medical infrastructure, better food security and hence lower prevalence of disability.

All the northeastern states have recorded lower prevalence rate than the national average prevalence rate. Meghalaya have highest prevalence, which is 1562 followed by Arunachal, Manipur, Nagaland, Tripura and Mizoram. The disability prevalence rates among the micro regions of Assam again depict lower prevalence rates in eastern and western Assam region, whereas the prevalence rate was much higher in Assam Hills (2423). Since the region has concentration of tea plantation, hence labor from neighboring states is attracted in large numbers. Food security for the labour, round the year is an issue as the plantation work is

restricted to fewer months. Hence, less nutrition and arduous work in the tea plantation field may be causing increase in disability prevalence rate. On the other hand, Meghalaya's both NSSO identified regions recorded lower prevalence rates. Therefore, the results show that the Assam hills region, which is inaccessible had high prevalence rate. However, the northeast region in spite of lesser inaccessibility recorded less disability prevalence rates probably, due to cohesiveness of culture and more educational awareness and better medical services in the region. These are the tribal population dominated region where the level of urbanization is not as higher as in other region of the country, so the probability of vehicular accidental disability is low.

In the northern states, the prevalence rate is high for Punjab (1987) followed by Uttar Pradesh, West Bengal, Haryana, Bihar and Jharkhand. The micro level pattern of prevalence rate indicate highest prevalence rate in Southern Uttar Pradesh (3630), which is highest among all other regions of India. This region includes Bundelkhand region, which is one of the most socio-economically backward regions and inaccessible region of U.P. Due to malnutrition and lack of immunization, new cases of polio have emerged in the region. This might also be the reason for higher magnitude of disability cases in this region. Eastern region of Uttar Pradesh are also showing high prevalence rate. Government officials point out that slackness in immunization programmes could be one reason. Poverty, dense population, poor hygiene, poor sanitation, pathetic health services, dirty surroundings in the small towns and rural areas makes the state a fertile ground for the polio virus to flourish. 63 percent of the people in the state have no access to sanitation. Malnutrition is a contributing factor. If the immune system is weak, it is ideal for polio to strike. According to the Nutrition Foundation of India 52 percent of U.P. children suffer from malnutrition. Moradabad district famed for its brass work has reported 64 cases in year 2007. Moreover, in neighboring Bijnor, 27 cases were found<sup>[7]</sup>.

The data shows a very different picture in case of Bihar. In spite of poor infrastructure and lower socio- economic

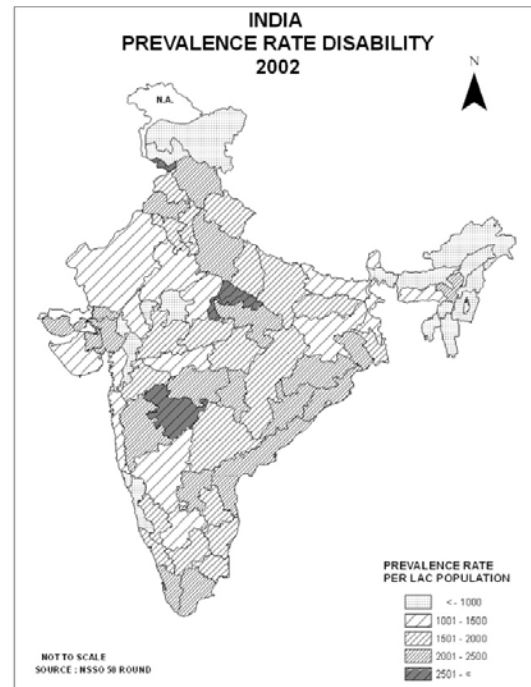
development and higher poverty incidence, the level of prevalence rate of disability in Bihar was very low compared to other state as well as lowers the national average. If we see the pattern within state, the central Bihar region, (1654) have high prevalence rate compare to northern region (1154). Due to low level of awareness and less reporting of female disability the data appears skeptical and ambiguous.

In case of West Bengal, the western plain region of Bengal have recorded high disability prevalence rate, while lowest prevalence rate was in Himalayan region of Bengal. In case of Orissa all the three regions of coastal, southern and northern showed higher than the national average disability prevalence rates. There is not much variation in the disability prevalence rate within the state. Food inaccessibility and inaccessibility of several tribal regions of Orissa have caused high prevalence rate of disability where both communicable and non-communicable diseases are regular, which leads to higher disability prevalence rate in the state.

In central part of the country, Madhya Pradesh has divided in six major regions by NSSO. Out of six region only vindhyan region (2229) have higher prevalence rate compare to national average followed by southern region, Malwa region, central, south western and northern region. Chhattisgarh, which was once part of it also recorded high disability prevalence rate compared to the national average. Rajasthan state recorded below the national average of disability prevalence but within the state, several regions depicted high level of variation for disability prevalence rate. The western and eastern region of the state, which is part of the desert, has high concentration of person with disability. The reason may be the inaccessibility of infrastructure i.e. medical facility, roads, mode of communication is very less in this region. The physiographic condition of the region is considered very harsh and because of this region is backward. The lowest concentration of the disability is found in the southeastern region of Rajasthan (951). The problem might be again under reporting of disability cases. Gujarat and Maharashtra states having better industrialization and economic development have recorded high disability prevalence rate in a number of regions. In Maharashtra except for coastal and inland northern Maharashtra, other region has low concentration of prevalence rate. At the same time other four regions inland western, inland central, inland eastern Maharashtra regions have above 2000 prevalence rate. In Gujarat, only northern plain region and dry areas of Gujarat region have high prevalence rate.

The southern states of India as compared to the northern and central states have recorded higher disability prevalence rates. This is contrary to the expectations as these states have better education awareness and human development index. Perhaps better awareness and more educational level has lead to accurate reporting of disability cases. Secondly, due to high quality of medical care, the aging of the population has been witnessed in case of Kerala, Tamilnadu and Karnataka. The higher proportion of older population in these states could also lead to higher disability prevalence rates. Kerala has been divided into two major regions- northern and southern. In northern region prevalence rate is very low

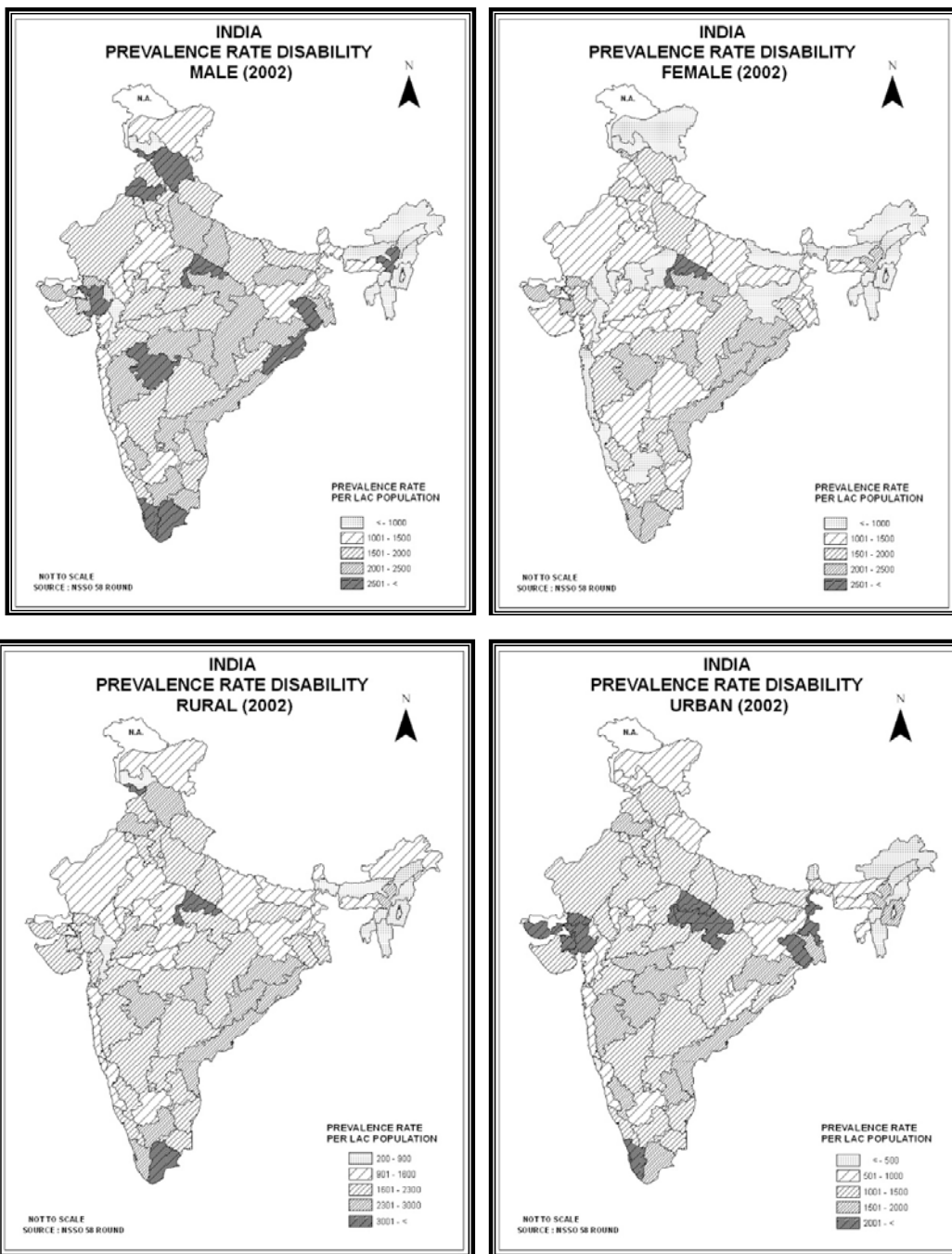
(1574) compared to southern region (2468). In Tamilnadu, southern region recorded high disability prevalence rate of (2386) followed by inland (1928), coastal (1810) and coastal northern (1641). In case of Karnataka, the prevalence rate is high mainly in two regions of inland eastern and northern, which recorded prevalence rates of 1944 and 1455 respectively.



Thus, the regional distribution of disability prevalence rates point towards high prevalence rates in those areas where inaccessibility, lack of medical services and lack of food security is high. Other areas with high prevalence rates are regions with better educational awareness, higher human development that leads to better and accurate reporting of disability prevalence cases. Thus, the disability prevalence cases seem to be highly under reported in the northern and central states.

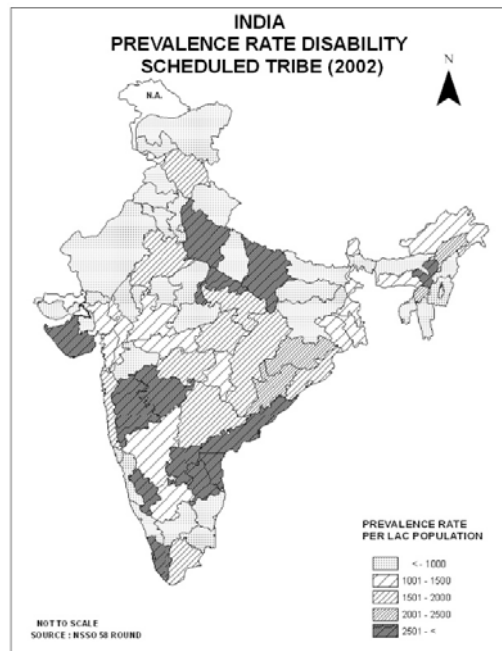
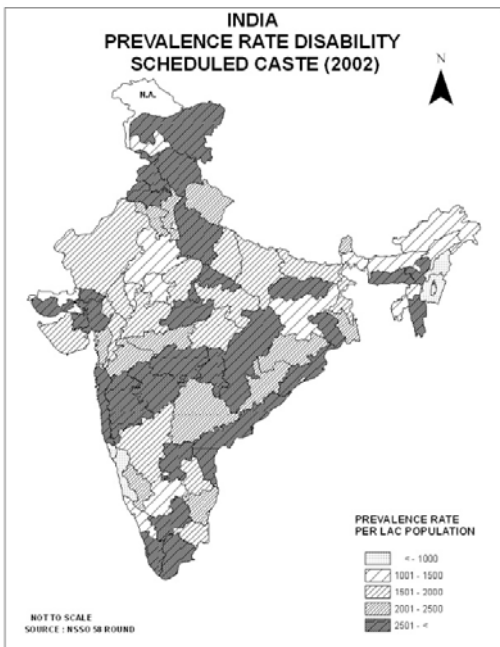
#### **Regional Variation of Prevalence Rate by Male- Female and Rural- Urban -**

The gender wise disability prevalence rates among the rural areas shows almost uniform pattern in most of the states. The general distribution shows that the prevalence rate of female is lower than the male. This could be due to under reporting of female disability cases due to the prevailing socio-cultural milieu, where such reporting may lead to non-availability of marriage proposal for females. Similarly rural area recorded higher disability prevalence rates as compared to urban areas due to higher level of inaccessibility, lack of medical care and less immunization rates.



**Prevalence Rate Of Disability In Scheduled Caste-The** social group wise pattern of prevalence rate of disability shows that in dry areas and northern plains of Gujarat, coastal and inland central maharashtra, mountainious jammu and

Kashmir region , southern uttar Pradesh, southern kerala, coastal orissa, central Madhya Pradesh, southern Punjab etc where prevalence rate of disability in scheduled caste is above 2501.



Scheduled caste in terms of socio- economic development are very backward group in India, due to their backwardness they are more prone to risk of disability. It consist a large part of Indian society.

**Prevalence Rate of Disability in Scheduled Tribe-** Scheduled Tribe is less backward compare to scheduled caste. The reason behind is that the level of literacy and education is comparatively high. The highest prevalence rate in scheduled tribe noticed in western and southern uttar Pradesh, inland karnatak, inland southern Andhra Pradesh, saurashtra, southern kerala, hills of Assam, inland central maharashtra, coastal Anadhra Pradesh in all these regions the rate of incidence is above 2501. Although the maximum concentration of tribal population, exist in northeastern states of India but still the prevalence rate is not very high.

**Incidence Rate of Disability**

The disability incidence rates (The number of persons whose onset of disability by birth or after birth has been during the specified period of 365 days preceding the data of the survey collected by the NSSO enumerators, per 100,000 persons) were 90, and 69 respectively in 1991 and 2002, according to the (NSSO rounds 47th and 58th in 1991 and 2002). Incidence rates have also decreased for both gender groups in rural and urban areas during 1991 to 2002. The incidence rates of disabled persons have declined from 90 to 69 in the rural areas and from 83 to 67 in the urban areas between 1991-2002. There by it is showing a decline in the overall incidence rate. Declining incidence rates give a picture of significant healthcare measures are in place especially among infants and children for control of polio and other communicable diseases, which were responsible for disabilities in later stages. Similarly, community awareness has helped in achieving better immunization coverage, healthcare and other preventive measures for preventing disability among children and old people.

**Incidence Rate India (per 100,000 persons), 1991-2001**

Year	Rural			Urban			Both R+U		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2002	77	61	69	75	58	67	76	60	69
1991	99	81	90	90	75	83	98	79	90

Source: NSSO Rounds 47th, 1991, and 58th Round, 2002.

**Regional Analysis of Incidence Rate**

The high level of incidence rate of disability pattern we found out in mountainous hill region of J&K, southern U.P, Eastern Maharashtra, coastal and inland southern Andhra Pradesh in all these regions incidence rate of disability is above 150. These regions are more prone to new cases of disability due to several factors. These regions also have high prevalence rate of disability. The another set of regions

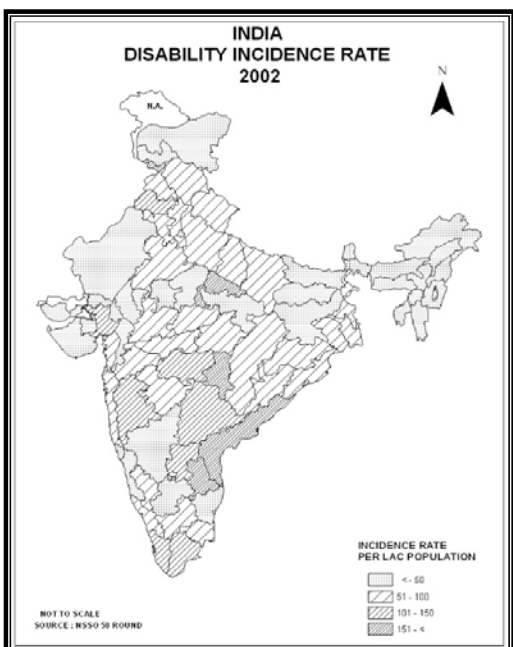
where incidence rate is between the 100 to 150 persons per million population are southern Punjab, northern plains of Gujarat, inland western Maharashtra, inland northern, south western and inland southern Andhra Pradesh region, southern Kerala and southern Tamilnadu. The trend shows that with in these states there exists divergence in occurrences of disability. In Kerala, southern region is more prone to disability compared to north region. In southern

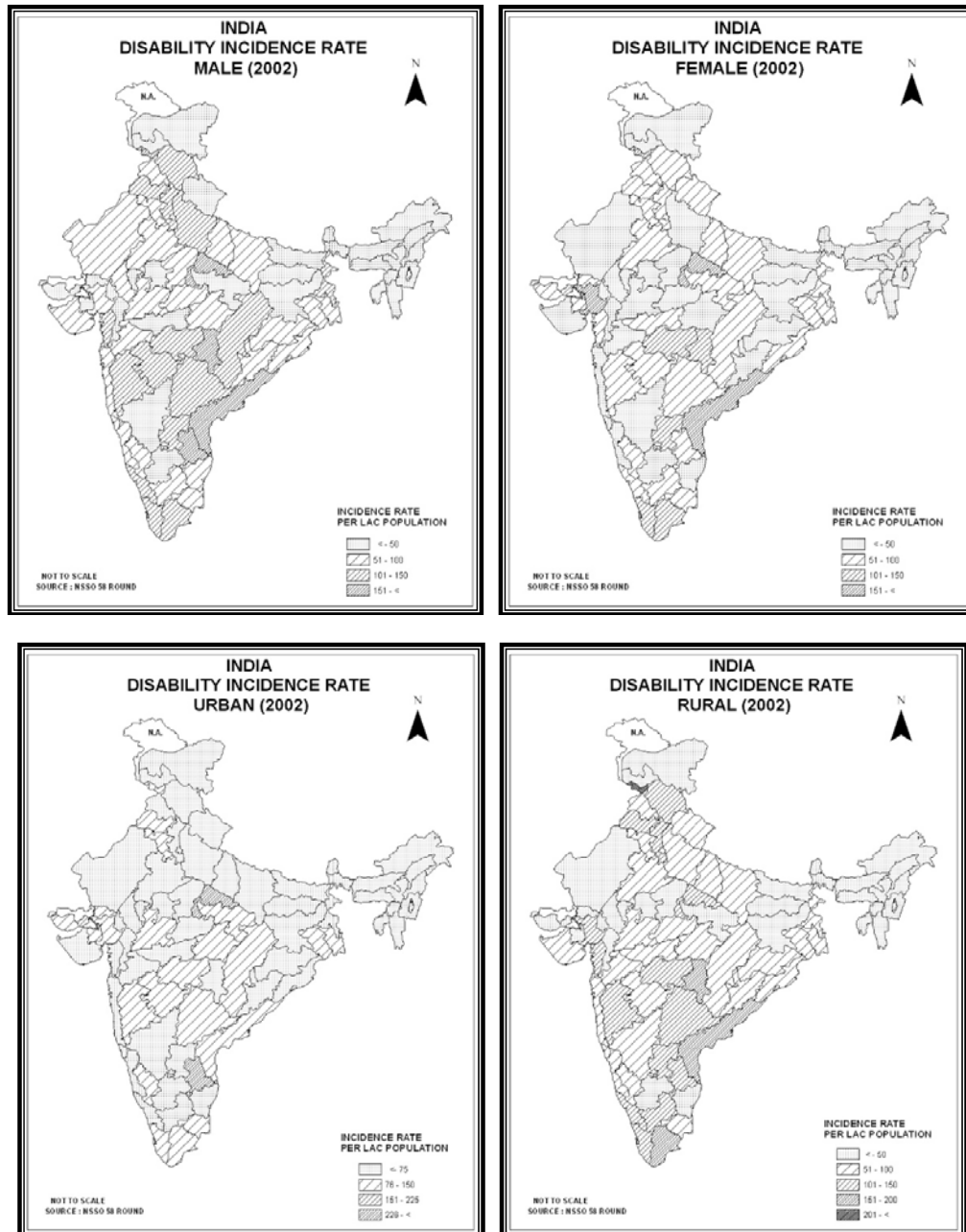
states the major causes of disability is old age because southern state has low mortality rate, which leads to old age disability.

Jhelum valley and outer hills region of J&K, western and south eastern Rajasthan, northern and central Bihar, vindhya and northern region of M.P, eastern and saurastashtra region of Gujarat, inland and coastal region of Karnataka, most of north eastern states of India etc.in all these regions incidences rate was below 50. The regional pattern shows that most of the tribal areas of northeastern region have very low level of incidences of disability. This is result of high level of literacy and successful implementation of immunization programme. On the other hand if we see the northern states pattern, Rajasthan, Bihar, Madhya Pradesh etc all these regions also noticed very low incidence rate of disability. This is the good sign for the planners that these socio- economically backward states performing well in case of incidences of disability. However the mountainious jammu and Kashmir, southern U.P. eastern mahatrasra, coastal and inland Andhra pradesh these are the regions which required an attention of concerning agencies to reduce the incidences of disability.

**The Rural –Urban Pattern of Incidence**

The pattern of incidence of disability shows that rural areas have high rate of incidences compared to urban areas. The highest incidence in rural areas occurs in mountainous region of J&K where rate of incidence is above 250 persons per million populations. Another highest incidences rate between 150- 200 persons per million occurs in Himachal Pradesh southern Punjab, southern U.P. northern plains of Gujarat, inland western and eastern Maharashtra, inland northern, south western and inland southern region of Andhra Pradesh, northern and southern region of Kerala, inland region of Tamilnadu. So the overall trend shows that southern states have high incidences of disability compared to northern and north eastern states. There are few regions where incidences of disability is very high.The highest incidences of disability in India found in inland southern Andhra Pradesh and southern U.P. region these are the two regions shows very high incidence rate of disability 304 and 291 respectively. The pattern of incidence in case of rural –urban comparision shows that in northern states urban area are less affected compare to southern. The male- female distribution of incidences of disability shows that male prevalence rate is high compare to female. The pattern does not show much variation. In southern U.P, mountainous region of J&K, inland Andhra Pradesh etc these entire region have both male –female incidences rate high.





The above analysis reveals that there exist variations in prevalence rate of disability by rural-urban, male-female and in all type of disability. The spatial analysis has shown that the disability incidence and prevalence rate is high in rural areas, in case of gender male are more prone to risk of disability compared to female. The pattern shows that southern states has higher rate of disability compared to northern states. The regional pattern shows that there are few pockets which have exceptionally high rate of disability i.e. southern U.P. mountainous region of J&K, coastal Andhra Pradesh, northern Gujarat etc. Resurgence of polio in India is a very critical issue in the global fight against the disease. No matter how much government proclaims or plans to eliminate the disease it is far from over. Unless we will give attention to basic amenities and education of society, the problem will never be eliminated. Over the years, if we look at the records, it is evident that disability is less a medical problem and more a social one. The solution lies in garnering the support of intellectuals belonging to the reluctant

communities, by helping them to understand that disability eradication programmes are for their benefit. The gradual awareness will one day attain the ultimate dream of India becoming a disability free country.

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