

CHAPTER III

DEMOGRAPHIC DETAILS OF THE VISUALLY IMPAIRED

[Expert comments: Dr. S. R. Shukla, Director, National Institute for the Visually Handicapped, Dehradun]

1. Population of the Visually Impaired in India with Reference to the World Situation

There are several estimates about the size of the disabled population in India with reference to the world situation.

1.1 The United Nations has estimated that there are:

- 500 million disabled in the world
- 400 million disabled in the developing countries
- 42 million visually impaired in the world
- 9 million visually impaired in India
- 80 percent of them live in remote and isolated villages

1.2 The World Health Organization Expert Committee on Disability Prevention reviewed the available information on the prevalence of disability in the world. The committee broadly estimated that about 10 percent of the world population is disabled.

1.3 The UNICEF document 53/54 published in 1981 mentions that the prevalence rate of disability in Latin America is 11.06 percent of the population including 2 percent for visual impairment.

1.4 The Indian Council of Medical Research collaborative study conducted in 1972-73 estimated 9 million blind and 45 million visually impaired population based on the 1971 census figures in India.

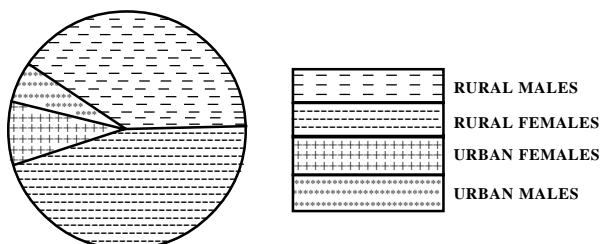
1.5 The National Sample Survey of India: The NSSO conducted the 47th round of a nation-wide comprehensive survey of disabled persons during July-December 1991. The survey arrived at an estimate of 16.15 million persons having at least one or the other disability, which constituted 1.9 percent of the total population of 850 million. The survey revealed that population of the visually impaired in India at 850 million level of population is 4 million as per the following distribution:

Table 3.1

Estimated population of the visually impaired (1991) (Thousands)

Sex	Rural (%)	Urban (%)	Total (%)
Male	1539 (38.42)	308 (7.69)	1847 (46.11)
Female	1796 (44.84)	362 (9.03)	2158 (53.88)
Total	3335 (83.27)	670 (16.72)	4005 (100.00)

Source: Survey of Disabled Persons, NSSO, 1991



1.6 The National Programme on Control of Blindness conducted a survey, popularly known as WHO - NPCB Survey 1981-86 on various causes of blindness in India. The Survey revealed the following:

Table 3.2

Prevalence of visual impairment (6/60 Acuity Level) (Millions)

Category	Prevalence Rate	Estimated Numbers at 800 Million Population	Curable (88.06%)	Incurable (11.94%)
Both Eyes	1.49	11.92 M	10.49 M	1.43 M
One Eye	0.92	7.84 M	6.57 M	1.27 M
Eyes	1.99	31.84 M	28.02 M	3.82 M

Source: WHO - NPCB Survey, 1981-86

Note: The first category refers to persons with vision loss in both eyes; the second category refers to persons with vision loss in one eye only; whereas the third category refers to number of eyes having loss of vision irrespective of number of persons.

The population of the visually impaired in India according to various estimates is as given below:

Table 3.3

Population of the visually impaired (Millions)

S.N. Agency\Source	Year	No. of Blind (Millions)	%to Population
a. Bhore Committee	1944	2.00	0.57%
b. Health Ministry	1963	4.50	1.00%
c. ICMR Study	1971-74	9.00	1.40%
d. NSSO Survey	1981	3.47	0.50%
e. WHO-NPCB Survey	1986	12.00	1.49%
f. NSSO Survey	1991	4.00	0.47%

Source: WHO - NPCB Survey, 1981-86
Survey of Disabled Persons, NSSO, 1991

Thus the population of the visually impaired according to various estimates varies from 0.47 percent to 1.49 percent of the total population at the time of respective estimate or survey. So far, the ICMR Study estimate (1971-74) of 9 million population has been widely accepted and quoted. The door to door survey of the Rural Activities Committee of the National Association for the Blind at 108 project locations in rural areas across the country also establishes that the population of the visually impaired as 0.5 percent of the total population. The findings of the Rural Activities Committee corresponds with that of the National Sample Surveys conducted during 1981 as well as 1991.

Thus the National Sample Survey provides the most conservative but probably the most realistic estimate of population of the visually impaired in the country.

Total Population of the Visually Impaired in India = 40,05,000

The population of the visually impaired according to urban & rural distribution is:

Rural	33,35,000
Urban	6,70,000
Total	40,05,000

The population of the visually impaired according to sex is :

Males	18,47,000
Females	21,58,000

2. Demographic Pattern: Country Profile of Persons with Disabilities

The National Sample Survey (1991) has established the following demographic profile of persons with disability in India:

- a. *The number of physically disabled persons in India was 16.15 million and they formed about 1.9 percent of the total population.*

- b. *74.3 percent persons with disabilities live in rural areas. The prevalence of physical disability is reported to be 2 percent in rural areas and 1.6 percent in urban areas. Similarly, Incidence Rate is reported to be 90 per 1,00,000 in rural areas which is higher than that of 83 in urban areas.*
- c. *Between the two sexes, prevalence as well as incidence are reported to be marginally higher among males than among females.*
- c. *About 12.4 percent of these persons suffered from more than one type of physical disabilities.*
- d. *The persons with locomotor disability are largest in number (7.6 million); followed by those with speech and/or hearing impairment (4.5 million) and then those with visual impairment (4 million).*
- e. *About 9 and 7 percent households in rural and urban India respectively have at least one disabled person in the household.*
- f. *Among these households, about 92 percent had one disabled person, about 7 percent had 2 disabled persons and less than 1 percent reported 3 or more disabled persons, both in rural and urban sectors.*
- g. *About 25 percent in rural areas and 20 percent in urban areas are reported to be severely disabled as they could not function even with aids and appliances.*

- h. About 70 percent of disabled persons are found to be illiterate in rural areas as against 46 percent in urban areas. Only 4 percent persons with disability in rural India have an educational level “secondary and above” as against 12 percent in urban areas.
- i. Only 29 percent and 25 percent persons with disability are employed in rural and urban India respectively. Out of these, 60 percent were self employed, 7 percent regular employees and remaining 33 percent as casual labourers.

3. On-set of Visual Impairment

3.1 Congenital Visual Impairment : The NSSO Survey establishes that:

- majority of blindness is acquired
- only 44 out of 1,000 blind persons (4.4 %) of all age groups acquired blindness during 0-4 years of age.
- congenital blindness is almost negligible

3.2 Acquired Visual Impairment : The NSSO survey attempts to establish the extent of on-set of visual impairment by analyzing the age of on-set in the age-group 60 years and above as well as persons of all ages.

3.2.1 Age Group 60 Years and Above: The on-set of visual impairment can be established by studying the distribution per 1,000 persons of 60 years of age as well persons of all age-groups.

Table 3.4

Per 1,000 distribution of persons of 60 years and above with visual impairment by age at the on-set of impairment

S.N.	Age Group	No. of Visually Impaired (Distribution per 1,000)	
		Rural	Urban
1	00-04	08	12
2	05-09	08	15
3	10-14	09	07
4	15-19	02	03
5	20-24	03	06
6	25-29	03	05
7	30-34	04	05
8	35-44	18	18
9	45-59	255	236
10	60 & Above	689	690

Source : Survey of Disabled Persons, NSSO, 1991

Majority of visually impaired persons, that is 69 percent of them, acquired their impairment at the age of 60 years and above. The next important age-group was 45-59 years as 24-26 percent acquired visual impairment in this age group. Both in the rural and urban sectors, the percentages are marginally higher in the first three age-groups viz. 0-4, 5-9 & 10-14 years than that in the next 4 age-groups.

Thus the on-set of visual impairment takes place predominantly after the age of 45 years

3.2.2 All Age Groups: Distribution of On-set of Visual impairment in All Age Groups by Age

Table 3.5

On-set of visual impairment in all age-groups

S.N.	Age Group	No. of Visually Impaired (Distribution per 1,000)
1	00-04	44
2	05-09	31
3	10-14	21
4	15-19	10
5	20-24	12
6	25-29	13
7	30-34	16
8	35-44	64
9	45-59	285
10	60 & Above	494

Source: Survey of Disabled Persons, NSSO, 1991

Only in 4.4 percent of the cases, the on-set of visual impairment is among the age group 0-4 years. In more than 77 percent of the cases, visual impairment occurs at the age of more than 45. In about 50 percent cases, the on-set of visual impairment is after the age of 60 & Above.

4. Prevalence of Visual Impairment

Prevalence means number of persons born with visual impairment or became visually impaired per 1,00,000 population in the country till the date of survey.

Table 3.6

Prevalence rate of visual impairment

S.N.	Age Group	Rural	Urban
1	0-4	34	30
2	5-09	85	47
3	10-14	85	62
4	15-19	89	74
5	20-24	82	72
6	25-29	121	56
7	30-34	143	98
8	35-39	185	112
9	40-44	275	152
10	45-49	391	273
11	50-54	826	514
12	55-59	1236	788
13	60 & Above	5060	3253
All		525	302

Source: Survey of Disabled Persons, NSSO, 1991

Prevalence rate:

- *is highest in the age group 60 & above, 5060 and 3253 for rural and urban areas respectively, followed by age group 55-59 with 1236 and 788 for rural and urban areas respectively.*
- *is lowest in the age group 0-4 years, 34 and 30 for rural and urban areas respectively.*
- *rises steadily with the increasing age both in the rural as well as urban areas. The prominent increase is, however, from the age of 50 years onwards.*
- *is higher in the rural as compared to urban areas for all the age groups.*

It is also found that in the community based rehabilitation programmes implemented at 104 locations in India, 84 percent of the visually impaired identified in the project areas were of the age of 45 years and above. Thus the majority of visual impairment occurs in the age of 45 and above.

5. Incidence of Visual Impairment

Incidence means the number of persons born with visual impairment or who acquired impairment per 1,00,000 population in the country within a specified period of 365 days preceding the survey.

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1996 desires Appropriate Governments and Local Authorities to take certain steps for the prevention of occurrence of disability.

Table 3.7

Incidence rate of visual impairment

S.N.	Age Group	Rural	Urban
1	0-4	7	9
2	5-09	3	2
3	10-14	4	2
4	15-19	1	1
5	20-24	2	3
6	25-29	3	2
7	30-34	2	2
8	35-39	4	2
9	40-44	17	5
10	45-49	27	17
11	50-54	36	50
12	55-59	106	71
	1360 & Above	225	221
	All	25	20

Source: Survey of Disabled Persons, NSSO, 1991

Incidence rate is:

- *lowest in the age group of 5 to 39 as it is reported to be only between 4 and 1 in the rural as well as urban areas respectively.*

- low in the age group 0-4 as it is reported to be 7 and 9 for the rural and urban areas respectively.
- highest in the age group of 60 & above, 225 and 221 for the rural and urban areas respectively, and followed by age group 55-59 with 106 and 71 for the rural and urban areas respectively.
- comparatively higher in the age groups 0-4, 22-24 and 50-54 in the urban areas as compared to rural areas. When all the age groups are considered simultaneously, it is higher in rural areas (25) as compared to urban areas (20)
- almost consistent with minor fluctuations in the age groups 5-44, rises steadily with the increasing age in the age groups 44 & above both in the rural as well as urban areas. The prominent increase is, however, from the age of 55 onwards.

While Prevalence Rate is higher in rural areas as compared to urban areas, the Incidence Rate in few cases is higher in the urban areas. When all the age-groups are considered simultaneously, both Prevalence Rate as well as Incidence Rates are higher in the rural areas. While the Prevalence Rate rises steadily with the increasing age, the Incidence Rate is consistent till 44 years of age and rises significantly thereafter.

Table 3.8

Comparative Prevalence and Incidence Rates of visual impairment

Sector	36th round (July -December, 1981)			47th round (July -December ,1991)			
	Male	Female	Persons	Male	Female	Persons	
	1	2	3	4	5	6	7
<u>Prevalence Rate</u>							
Rural	444	670	553	471	548	525	
Urban	294	425	356	263	346	302	
<u>Incidence Rate</u>							
Rural	32	45	38	22	28	25	
Urban	23	38	30	15	25	20	

Source: Survey of Disabled Persons, NSSO, 1981 & 1991

Both Prevalence Rate and Incidence Rate have declined in the urban as well as rural areas over the period 1981 to 1991. The Prevalence Rate has recorded a marginal decline from 553 to 525 and from 356 to 302 in the rural and urban areas respectively. The decline of 15.16 percent in the urban areas is more significant as compared to that of only 5.06 percent for rural areas. The Prevalence Rate among males in the rural area, however, increased from 444 to 471 during the same period.

The Incidence Rate of 25 and 20 for the rural and urban areas respectively during 1991 has recorded a sharp decline as compared to that of 38 and 30 for these areas during 1981. As Incidence Rate has registered a decline of 21 percent and 20 percent for the rural and urban areas respectively, urban areas have not reflected any comparatively better performance.

6. Gender-wise Distribution

6.1 Gender-wise Comparative Prevalence

Table 3.9

Male - female population

Population	Male (%)	Female (%)
Visually Impaired	46.11	53.89*
Total Population	50.50	49.50#

Source: * Survey of Disabled Persons, NSSO, 1991
General Population Survey, 1991

The Females constitute 54 percent of the population of the persons with visual impairment, whereas in the general population, females constitute only 49.5 percent. Similarly, both the Incidence Rate as well as Prevalence Rate of visual impairment are reported to be higher in females as compared to males.

6.2 Gender-wise Prevalence and Incidence

Table 3.10

Gender-wise prevalence & incidence of visual impairment

Location	Incidence	Prevalence
Male	22	471
Female	28	584

Source: Survey of Disabled Persons, NSSO, 1991

It is interesting to note that the prevalence of disability is more among males (57 percent) than females (43 percent) when all disabilities are considered together.

6.3 Gender-wise Distribution

Table 3.11

Comparative male - female population of the visually impaired

Population	Male (%)	Female (%)
36th Round (July-Dec,81)	41.53	58.46*
47th Round (July-Dec,91)	46.11	53.89#

Source: * Survey of Disabled Persons, NSSO, 1981# & 1991*

The 1981 Survey established that the females constituted 58.46 percent population of the visually impaired. The 1991 Survey, however, establishes a marked improvement in this regard. The percentage of females has declined to 53.89 percent during this period. Consequently, the proportion of the male population has increased from 41.53 percent to 46.11 percent during the same period.

7. Extent of Visual Impairment

The NSSO survey establishes that a large percentage of the visually impaired have light perception.

Table 3.14

Degree of visual impairment (Distribution per 1,000)

Degree of Impairment	Rural	Urban
No light perception	342	312
Light perception on using spectacles	174	292
Light perception not using spectacles	480	387
Total (including n.r.)	1,000	1,000

Source: Survey of Disabled Persons, NSSO, 1991

Only one-third of the visually impaired persons have no light perception. Whereas the remaining two-thirds have light perception with or without the use of spectacles. The percentage of persons having light perception on using spectacles is comparatively higher in the urban areas at 29.2 percent as compared to 17.4 percent in the rural areas.

The proportion of persons with no light perception varies from state to state. Interestingly, in each sector, it was lowest in Orissa in rural areas with 22 percent and Assam for urban areas with 18 percent where the prevalence of visual impairment was reported to be highest. Uttar Pradesh recorded highest percentage (45.4 %) of persons having no light perception followed by Bihar (45.2%) in case of rural areas; whereas Gujarat recorded highest percentage (53.3%) followed by Rajasthan (39.5%) for urban areas in this respect.

8. Location of Visually Impaired Population

8.1 Rural - Urban Distribution

Table 3.12

Rural - urban population

Population	Rural (%)	Urban (%)
Visually Impaired	83.27	16.73*
Total Population	80.00	20.00#

Source: * Survey of Disabled Persons, NSSO, 1991
General Population Survey, 1991

The population of the visually impaired of 83.27 percent as compared to that of 80 percent that of the general population in the rural areas establishes that incidence of visual impairment is relatively more in the rural areas. Thus the population of the blind is predominantly rural.

8.2 Prevalence & Incidence of Visual Impairment

Table 3.13

Prevalence & incidence of visual impairment

Location	Incidence	Prevalence
Rural	25	525
Urban	20	302

Source: Survey of Disabled Persons, NSSO, 1991

According to the National Sample Survey of Disabled Persons (1991), for the country as a whole, the Incidence Rate of visual impairment is estimated at 25 and 20 persons in rural and urban India respectively. Similarly the Prevalence Rate of visual impairment is estimated at 525 and 302 in rural and urban India respectively. Thus the incidence as well as prevalence of the visually impairment is comparatively higher in the rural areas than in the urban areas.

8.3 State-wise Distribution : The NSSO Survey establishes that the prevalence and incidence of blindness varies from State to State.

8.3.1 State-wise Prevalence: Number of persons born with visual impairment or became visually impaired per one lakh population in the country till the day preceding the date of survey also varies from state to state.

Table 3.15**State-wise prevalence of visual impairment**

S.N.	Category	Prevalence Rate		States (Rural, Urban)
		Rural	Urban	
1.	Highest	820	444	Rural: Orissa Urban: Assam
2.	High	>500	>300	Andhra Pradesh (860, 385) Himachal Pradesh (629, 319) Tamil Nadu (625, 377) Haryana (621, 364) Punjab (599, 301) Karnataka (562, 338) Uttar Pradesh (518, 310)
3.	Moderate	300-499	200-299	Maharashtra (549, 264) Madhya Pradesh (529, 239) Rajasthan (435, 253) Kerala (418, 388) West Bengal (395, 321) Gujarat (373, 266) Bihar (341, 225)
4.	Low	< 300	<200	Chandigarh, DN Haveli, Delhi, Manipur, Meghalaya, Mizoram, Nagaland - as per NSSO (1985) as these States not covered in NSSO (1991)

Source: Survey of Disabled Persons, NSSO, 1981 & 1991

Among the States, highest Prevalence Rate in the rural sector was reported by Orissa (820) followed by Andhra Pradesh (806) and Himachal Pradesh (629). In the urban sector also, the rate was quite high for Orissa (444). Only Assam (451) reported a high Prevalence Rate. Bihar, on the other hand, reported the lowest Prevalence Rate in both the sectors. The rates were 341 and 225 respectively in the rural and urban sectors.

8.3.2 **State-wise Incidence:** Number of persons born with visual impairment or became visually impaired per one lakh population in the country within a specified period of 365 days preceding the date of survey also varies from state to state.

Table 3.16**State-wise incidence of visual impairment**

S.N.	Category	Incidence Rate		States (Rural, Urban)
		Rural	Urban	
1.	Highest	55	19	Rural: Andhra Pradesh Urban: Tamilnadu
2.	High	>25	>20	Punjab (37, 23) Karnataka (37, 16) Haryana (37, 7) Kerala (23, 31) Madhya Pradesh (26, 12) Orissa (25, 41) Assam (55, 19)
3.	Moderate	15-24	10-19	Maharashtra (23, 19) Gujarat (19, 15) Bihar (15, 16) Rajasthan (15, 9) West Bengal (15, 11)
4.	Low	10-14	5-9	Uttar Pradesh (14, 15)
5.	Very Low	<10	<5	Himachal Pradesh (7, 22)

Source: Survey of Disabled Persons, NSSO, 1991

The Incidence Rate at 55 was found highest in the rural areas of Andhra Pradesh. Whereas Tamil Nadu reported highest Incidence Rate of 50 for the urban areas. When both the rural and urban sectors are considered simultaneously, Tamil Nadu reported a Incidence Rate of 47 which is highest for the country.

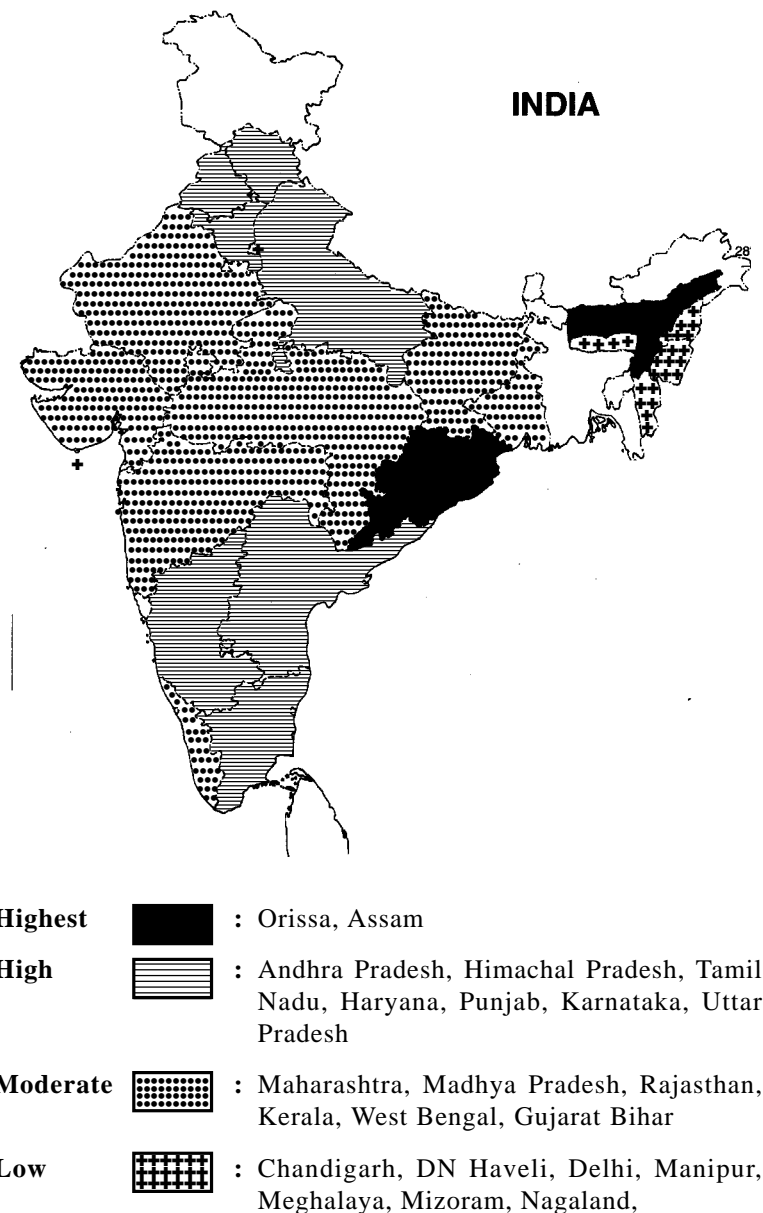
When the Prevalence Rate and Incidence Rate are considered simultaneously, the States of Andhra Pradesh, Tamil Nadu, Haryana, Punjab, Orissa, Karnataka and Assam turned out to be most vulnerable states as far as extent of visual impairment is concerned. Both these rates are reported in the highest or high categories of visual impairment. Orissa where the Prevalence Rate was highest for the rural areas at 820, the Incidence Rate was lower as compared to 7 other states as listed above. Likewise, Assam which reported the highest Prevalence Rate in urban sector, the Incidence Rate was only 23, only marginally higher than that in urban India (20).

Uttar Pradesh which reported very high Prevalence Rate of 518 and 310 for the rural and urban areas respectively reported a low Incidence Rate of 14 and 15 respectively. Himachal Pradesh which reported a high Prevalence Rate of 629 and 319 for the rural and urban areas respectively, emerged in a very low category of Incidence Rate of 7 and 22 respectively. There seems to be significant improvement in the rural areas of Uttar Pradesh and Himachal Pradesh.

Kerala and Madhya Pradesh which were reported in the Moderate category in respect of prevalence of visual impairment, have reported its high incidence. Kerala reported Incidence Rate of 31 for urban areas only next to Uttar Pradesh and Tamil Nadu. It may be mainly due to increasing urbanization of population in Kerala and paucity of ophthalmic services.

When the Prevalence Rate and Incidence Rate are considered simultaneously, the States of Maharashtra, Rajasthan, West Bengal, Gujarat and Bihar turned out to be less vulnerable

State-wise Prevalence of Visual Impairment



states as far as extend of visual impairment is concerned. Both these rates are reported in the moderate categories of visual impairment.

The areas of Chandigarh, Dadra-Nagar-Haveli, Delhi, Manipur, Meghalaya, Mizoram, Nagaland had reported very low prevalence of visual impairment during 1981 survey. Thus most of the areas India have reported low prevalence of visual impairment. This may be due to lower occurrence of cataract due to cold climate of these areas. The exceptions, however, are Himachal Pradesh and Assam. Himachal Pradesh reported moderate prevalence of visual impairment during 1981 Survey, it, escalated to high category during 1991 Survey. Similarly, Assam which reported the lowest prevalence of visual impairment during 1981, emerged with highest prevalence in its urban areas as per 1991 Survey. It, however, recorded the lowest prevalence of only 7 for its rural areas during 1991 Survey.

REFERENCES:

Directorate General of Health Services (1992): *Present Status of National Programme for Control of Blindness (NPCB)*, New Delhi: Ophthalmology Section, P. 138

Ministry of Welfare (1984): *Survey of Disabled Persons*, New Delhi, p.32

Ministry of Welfare (1986) : *Handbook on Social Welfare Statistics*, New Delhi p.423

National Sample Survey Organization, Department of Statistics (1991): *A Report on Disabled Persons: Forty Seventh Round*, New Delhi: July-December. P. A-136

Punani, (Dr.) Bhushan and Rawal, Nandini (1997): *Community Based Rehabilitation: Visually Impaired*, Mumbai: National Association for the Blind, Rural Activities Committee, P. 267