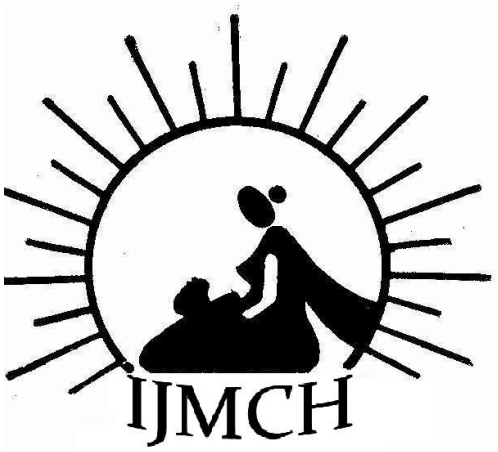
Volume 13 (1), 2011

# Study of maternal factors among children with disabilities at Loni, Maharashtra

*Rajagopal Rao Kodali*
*Chandrasekhar Ch*

www.ijmch.org




INDIAN JOURNAL OF MATERNAL AND CHILD HEALTH

1. What is the prevalence of disabilities among children?
2. What is the association between the disabilities & maternal factors?

# Study of maternal factors among children with disabilities at Loni, Maharashtra

**Rajagopal Rao Kodali,* Chandrasekhar Ch****

***Associate Professor, **Statistician, Department of Community Medicine, Dr.Pinnamaneni Siddhartha Institute of Medical Sciences & Research Foundation, Chinaoutpalli, AP.**

**Correspondence: Dr.Rajagopal Rao Kodali**

**Email address: kodalirgrao@gmail.com**

**ABSTRACT**

**Research Questions**: 1. What is the prevalence of disabilities among children?

2. What is the association between the disabilities & maternal factors?

**Settings**: 8 villages under rural field practice area of Rural Medical College, Loni.

**Study Design**: Community based cross sectional study.

**Participants**: 7300 children in the age group of 0-14 yrs from the total population 20,533.

**Methodology**: A house to house survey was conducted to identify the disabled children using a pre tested questionnaire by interview technique among 8 villages under rural field practice area of Rural Medical College, Loni. The respondent is the mother of the child.

**Results**: The overall prevalence rate of multidisciplinary disabilities in children was 2.25%. The disabilities were more in consanguineous marriages, mother's age of less than 20 years at the time of pregnancy, home deliveries, abnormal deliveries and deliveries conducted by untrained personnel.

***Key words**: Disabilities, Prevalence, Maternal factors, Consanguineous marriage.*

## INTRODUCTION

Disability has been defined as "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being".[(1)]

According to World Health Organization's estimates, approximately 10% of a given population suffers from disability of one kind or other. There were no comprehensive surveys to know the exact incidence of disability in India.

Government of India Census 2001 has included disability, a separate question and revealed that 80 per cent of the disabled children were in rural areas. The major preventable causes of disabilities are malnutrition, communicable diseases, early childhood infections and accidents at home and work place. Early detection of impairment, combined with early and effective curative care can make a significant impact in minimizing or compensating for impairment and its consequences.[(2)]

Persons with disabilities frequently live in deplorable conditions, facing barriers that prevent their integration and meaningful participation in mainstream society. The basic human rights to freedom of movement, access to education and health care are often ignored. Because they suffer the additive difficulties of their disability, marginalization and invisibility, their health, especially their mental health may deteriorate even further.[(3)]

The persons with disabilities and their family members are socially, economically and emotionally affected. The negative attitudes of the able persons in the family and in the community are the greatest obstacles to full participation and equalization of opportunities.

Prevention, early identification, intervention, rehabilitation, integration and inclusion of all persons with disabilities are the concept of today, where by such people also has a right to their family and to a natural environment.

Persons with disabilities who belong to poor families are marginalized and disadvantaged by variety of factors such as lack of access to productive resources & to opportunities, and lack of information and skills which enable participation in social, economic and political process. Some groups such as women and girls are more vulnerable to disabilities. It was estimated that only 2 to 3% of disabled in the need of rehabilitation have access to the services.

Understandings of the society and approach to the issues of the disabled have been fast changing for the past 30 years. Newer advances in technology, new civil rights movements, greater number of disabled people making their marks in different social, political, economic and other sectors have helped in mainstreaming of the disabled citizens.[(4)]

The optimum maternal age at the time of marriage for producing normal babies is in between 20-30 years. After the age of 30-35 yrs, there is a greater chance of Down's syndrome and before the age of 20 yrs is a problem of premature births, low birth weight babies with congenital abnormalities. Consanguineous marriages which are still common in India, are one of the reason for the disabilities.

The establishment of Rehabilitation Council of India (RCI) has been a major move for quality assurance in the education, training and management of persons with disabilities. Persons with Disabilities (Equal opportunities, Protection of rights and Full participation) Act, 1995 fixes the responsibilities on central and state governments to provide services, create facilities and give up support to the people with disabilities in order to enable them to have

an equal opportunity in participating as well as productive and contributing citizens of the country to their fullest extent.[5]

A new strategy termed community based rehabilitation (CBR) was evolved and found extremely useful to rehabilitate persons with disabilities in the community setting and with community participation.

## MATERIAL & METHODS

**Study area**: The study area comprises of 8 villages under rural field practice area of Rural Medical College, Loni (Maharashtra).

**Study population**: 7,300 children in the age group of 0-14 yrs from the total population of 20,533.

**Study design**: The data has been collected through a well designed community based cross sectional study.

**Sample size determination**: The prevalence of disability among children in rural area was considered as 5% (P) for computation of the sample size. Keeping the confidence level as 95% and the relative result of the survey results as 10% of P i.e. 0.5%,the sample size was calculated by using the formula $n=Z^2_{1-\alpha/2}(1-P)\sum^2 P$ where Z=1.96(C.L=95%) P=5% ∑=0.5% (10% of P=5). The sample size has been arrived at 7229 rounded to 7300.

**Selection of study population/Sample survey methods**: House to house survey was conducted to identify disabled children using a pre tested questionnaire. The data was collected through interview technique. Respondent was the head of the family or parent or close relative of the children in the house.

**Quality assurance of the data**: Daily checking of the 10% of the filled questionnaire by the senior colleague in the department. Results were discussed with senior colleagues and summarized.

**Statistical analysis and interpretation of data:** Data collected has been presented through frequency distribution tables, cross tables and graphs for percentages. Interpretation of the results was done using percentages, proportions and tests of significance – Chi square test and Z test.

**RESULTS**

## Table I: Distribution of children with disabilities by the Type & Prevalence of disability

| Type of disability | Number | Prevalence rate per 100 |
|---|---|---|
| Locomotor | 23(14.02%) | 0.32 |
| Mental retardation | 14(08.54%) | 0.19 |
| Visual impairment | 17(10.36%) | 0.23 |
| Hearing & Speech | 98(59.76%) | 1.34 |
| Multiple & Miscellaneous | 12(07.32%) | 0.17 |
| **Total** | **164(100%)** | **2.25** |

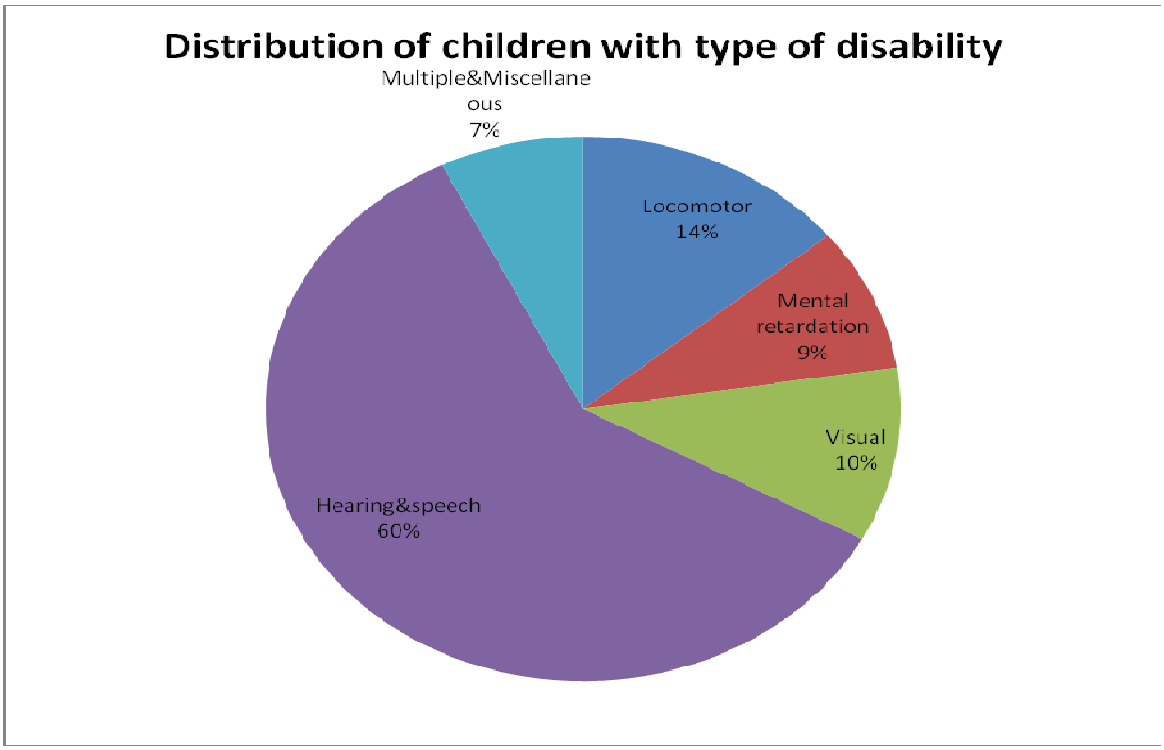


**Table II: Distribution of Children with disabilities by Consanguineous Marriage**

| Marriage | Locomotor | MR | VI | H & S | Multiple | Total |
|---|---|---|---|---|---|---|
| Consanguineous | 9 | 07 | 07 | 32 | 08 | 63(38.42%) |
| Non-consanguineous | 14 | 07 | 10 | 66 | 04 | 101(61.58%) |
| **Total** | **23** | **14** | **17** | **98** | **12** | **164(100%)** |

Z = 2.97 P <0.01

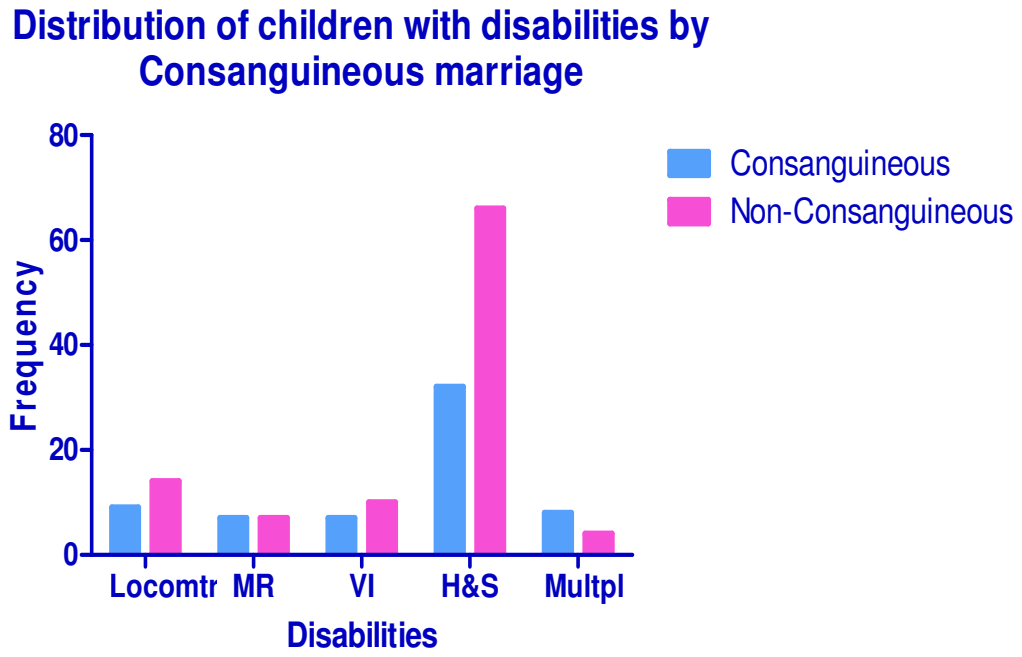


**Table III: Distribution of children with disabilities by Age at pregnancy of the mother**

| Age | Locomotor | MR | VI | H & S | Multiple | Total |
|---|---|---|---|---|---|---|
| <20 yrs | 11 | 03 | 09 | 43 | 03 | 69(42.07%) |
| 20—24 yrs | 04 | 07 | 02 | 40 | 02 | 55(33.53%) |
| 25+ yrs | 08 | 04 | 06 | 15 | 07 | 40(24.39%) |
| **Total** | **23** | **14** | **17** | **98** | **12** | **164(100%)** |

$\chi^2 = 21.80$ d.f = 8 P = 0.0053

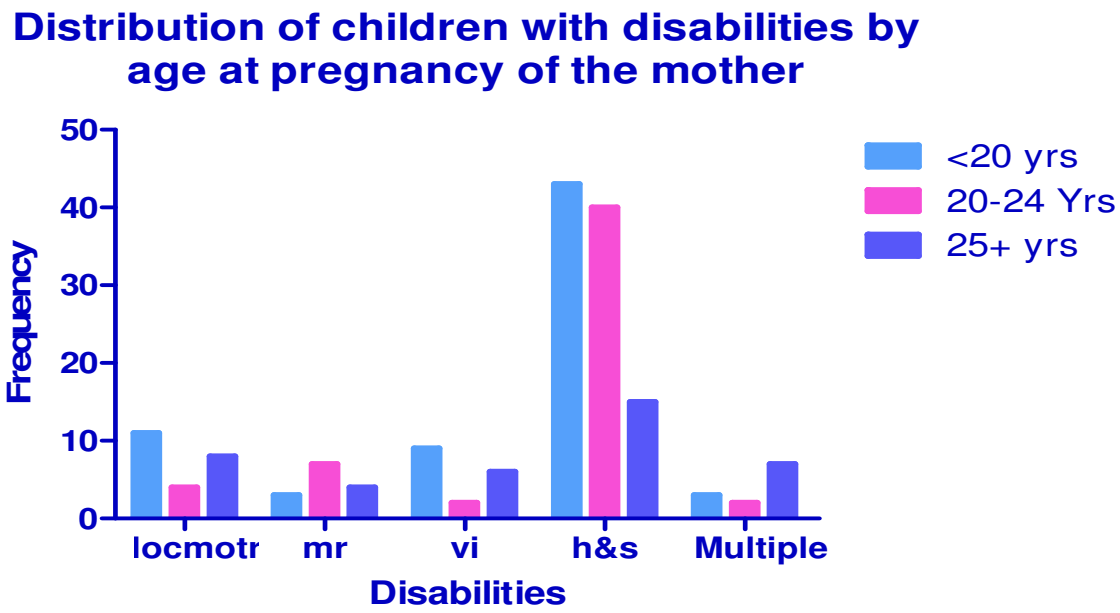


**Table IV: Distribution of children with disabilities by Place of delivery**

| Place | Locomotor | MR | VI | H & S | Multiple | Total |
|---|---|---|---|---|---|---|
| Home | 09 | 08 | 08 | 20 | 03 | 48(29.27%) |
| Institution | 14 | 06 | 09 | 78 | 09 | 116(70.73%) |
| **Total** | **23** | **14** | **17** | **98** | **12** | **164(100%)** |

Z = 5.74 P < 0.01

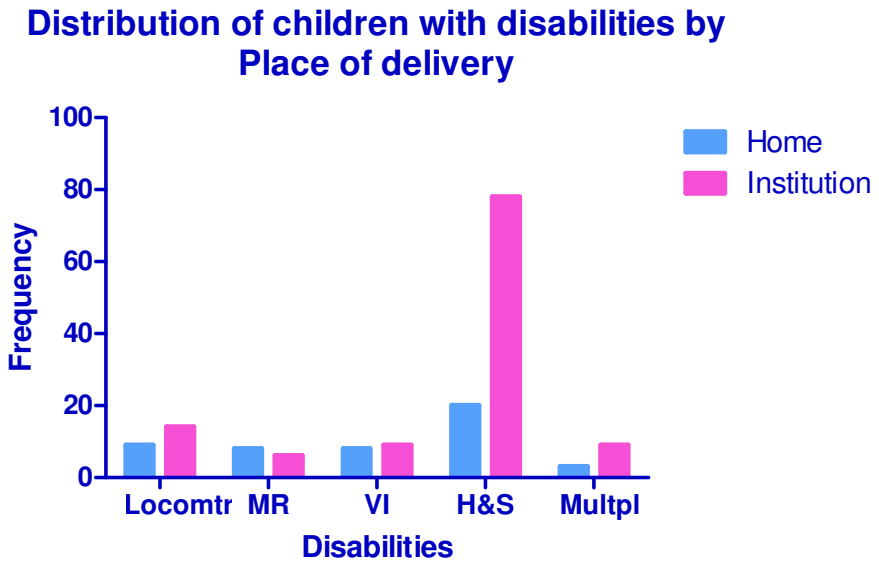


**Table V: Distribution of children with disabilities by Attention of delivery**

| Attention | Locomotor | MR | VI | H & S | Multiple | Total |
|---|---|---|---|---|---|---|
| Trained person | 15 | 08 | 09 | 81 | 10 | 123(75%) |
| Untrained person | 08 | 06 | 08 | 17 | 02 | 41(25%) |
| **Total** | **23** | **14** | **17** | **98** | **12** | **164(100%)** |

Z = 7.30 P < 0.01

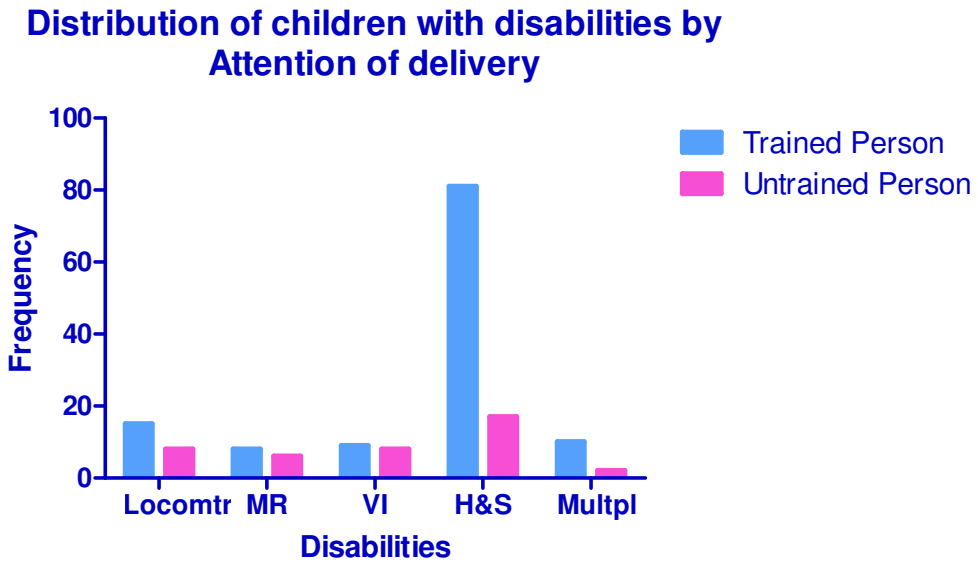
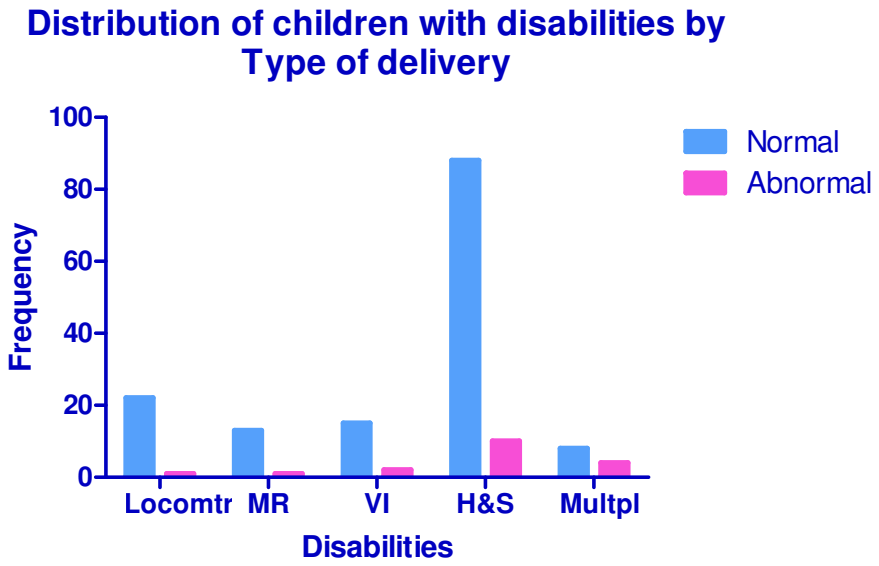


**Table VI: Distribution of children with disabilities by Type of delivery**

| Attention | Locomotor | MR | VI | H & S | Multiple | Total |
|---|---|---|---|---|---|---|
| Normal | 22 | 13 | 15 | 88 | 08 | 146(89.02%) |
| Abnormal | 01 | 01 | 02 | 10 | 04 | 18(10.98%) |
| **Total** | **23** | **14** | **17** | **98** | **12** | **164(100%)** |

Z = 15.86 P <0.01



**DISCUSSION**

The prevalence rate of multidisciplinary disability is 2.25%. Major disability is hearing and speech impairment followed by locomotor disability, visual impairment, mental retardation and less is multiple disabilities. The prevalence rate of disabilities was less than the estimated figure of 10% of world population by WHO,[(1)] but was falling within the range of 2-5% of the Indian population as estimated by Rehabilitation Council of India.[(5)]

The Cerebral Palsies, Mental Retardation, Visual Impairment and Locomotor disabilities were more in consanguineous marriages, which were associated with genetic defects as was observed by Vidya Bhushan and Sachdeva[(6)] and the difference between proportions of consanguineous and non consanguineous marriages was statistically highly significant ($P < 0.01$).

The disability is more with the mother of less than 20 years of age at the time of pregnancy of the disabled child, the disability is inversely proportional with the age of the mother at the time of pregnancy and is statistically significant. Cerebral palsies were clearly more with their mother's age of 25 years and above at the time of delivery as the brain defects due to genetic changes were in the elderly mother.

Mental retardation, locomotor disability and visual impairments were more in home deliveries. The high prevalence of disability in home delivery may be because of inadequate facilities for conducting safe deliveries at home and infections.

The high prevalence of disability in deliveries conducted by untrained personnel may be because of lack of knowledge and skills in conducting deliveries leading to trauma, birth hypoxia etc which may in turn lead to disability. Yerulkar & Mazumdar[(7)] also observed high prevalence of disabilities in home deliveries, deliveries conducted by untrained personnel and in high risk deliveries.

The difference between proportions of home & institutional deliveries and the attention of deliveries conducted by trained and untrained personnel were statistically significant

The disability is more in abnormal delivery like forceps delivery, prolonged labour, Caesarian section etc and the difference between proportions is statistically significant.

**CONCLUSION**

The rural community should be made aware of consanguineous marriages and such marriages to be discouraged. The adolescents to be educated about the right age at marriage as too early pregnancy and too late pregnancy increases the disability risks. Ensure provision and utilization of Reproductive & Child Health services, especially safe delivery and family planning practices as the disabilities were observed more in home deliveries, deliveries conducted by untrained personnel, with large family size and increased birth order. Complete immunization of all the children is to be ensured. Nutritional education and safety education must be incorporated in the school curriculum.

**ACKNOWLEDGEMENTS**

The authors are grateful to Dr.R.C.Goyal, Ex. Professor and Head, Department of Community Medicine, Rural Medical College, Loni for his constant inspiration, encouragement, expert guidance and total involvement in the study. The teaching faculties of the departments of Community Medicine, Obstetrics & Gynecology and the respondents of the study are greatly acknowledged for their cooperation.

**REFERENCES**

1. WHO(1980). International Classification of Impairments, Disabilities, Handicaps. WHO, Geneva.
2. Vijay Agarwal. Disabled child, Disability India Journal, April 2003. Available from: http//:www.disabilityindia.org.
3. Council for Advancement of People's Action and Rural Technology – A strategy to promote the participation of people with disabilities in programmes for rural development, CAPART, New Delhi,2000.
4. Mathew Nampudakam. Disabled or differently abled. Health for Millions 2000;26(6):3.
5. Rehabilitation Council of India – Manual for training of PHC Medical Officers, Ministry of Social Justice and Empowerment, Government of India, New Delhi, 2001.
6. Vidyabhushan, Sachdeva DR. An introduction to sociology. Patna: Kitab mahal;2003. pp.875-7.
7. Yerulkar & Mazumdar. Prevalence of physically handicapped in village and its relation to host factors. Journal of Rehabilitation in Asia 1996;1;23-31.