

Short Communication

## PREVALENCE OF MENTAL RETARDATION AMONG CHILDREN IN MANGALORE

Bhagya B.<sup>1</sup> & Ramakrishna A.<sup>2</sup>

<sup>1</sup>Lecturer, <sup>2</sup>Professor, Department of Anatomy, Yenepoya Medical College, Yenepoya University, Deralakatte, Mangalore - 575 018, Karnataka, India.

Correspondence :

Bhagya B.

Lecturer, Department of Anatomy, Yenepoya Medical College, Yenepoya University, Deralakatte, University Road, Mangalore 575018  
Mobile : +91 98459 05220, Phone : +91 824 220 4668/69/70 Fax : +91 824 220 4667 E-mail : bagyabs@gmail.com

Abstract :

**Objectives:** This study determines the prevalence of mental retardation among school going children in Mangalore by sex, age, religion, and location. Distribution of severity of mental retardation and its relationship with age of diagnosis is reported.

**Materials and methods:** The prevalence was obtained from the Inclusive Education Resource Centre reports of 2011. Sex, age, religion and living area were evaluated for each child. Parents of the mentally retarded children were interviewed to record the age of diagnosis. Intelligence Quotient was assessed using Binet Kamat Test, Seguin Form Board and Vineland Social Maturity Scale.

**Results:** The prevalence of mental retardation was 561 of the total disabilities recorded.

The prevalence of MR was higher among males than in females ( $p < 0.001$ ). No notable sex difference between rural and urban areas was seen. Prevalence was higher among Hindus and between 9 to 12 years of the age group. Most of them had mild MR (48.15%). Severe and Profound MR were diagnosed at a much earlier age group than in mild and moderate types.

**Conclusion:** This study provides an insight to the school going children with mental retardation. Further research on study of causes for MR is needed for service planning.

**Keywords:** Mental retardation, Children, Prevalence, Intelligence Quotient, Mangalore

Introduction:

World Health Organization estimates that 10% of the world's population has some form of disability.<sup>1</sup> Mental retardation (MR) is one form of disability and affects 1-3% of human population.<sup>2</sup> Mental disorder is a particular state of functioning that begins in childhood and is characterized by decreased intelligence and adaptive skills and also is the most common developmental disorder.<sup>3</sup> According to American Association on Mental Retardation<sup>4</sup> MR is defined as "significantly sub average intellectual functioning existing concurrently with related limitations in

two or more of the following applicable adaptive skill areas: communication, self-care, home living, social skills, community use, self-direction, health and safety, functional

academics, leisure and work," with such limitations manifested "before age 18".<sup>5</sup> Intelligence quotient (IQ) is determined to quantify the level of intelligence. According to International Classification of Diseases – Tenth revision (ICD-10),<sup>6</sup> the levels of severity of MR are mild (IQ of 50-69), moderate (35-49), severe (20-34), and profound (<20). Diagnosis of mental disorders in small children is usually missed by clinicians. MR results from extremely heterogeneous environmental and genetic causes. In about 50% of the cases despite of thorough investigation the etiology is unknown. Addictions, accidents or infections during prenatal, perinatal or postnatal developments may cause mental disability. Genetic factors are another important causative factor for MR which accounts to about 28%.<sup>7</sup> They can be divided into multifactorial, single gene and chromosomal disorders. Ganesh *et al.*,<sup>8</sup> reported 6.3% of disability in four villages of Karnataka. In another study among the same population 2.3% prevalence of mental disability was observed.<sup>9</sup> A prevalence of 2.02% disability

Access this article online

Quick Response Code



has been stated by Pati<sup>10</sup> in two villages of Karnataka. The prevalence of disability is higher among females than males.<sup>9-12</sup> Mangalore taluk is situated in Karnataka state in Southwest India. According to the census of population 2011<sup>13</sup> the total population is 9,898,56 (2,09,578 rural vs 7,80,278 urban). The number of males 4,88,875 and females is 5,00,981. Male literacy is 86.12%, while female literacy is 80.31%.<sup>12</sup> Mangalore is composed of heterogeneous population and represents a mixture of rich ethnic and cultural diversity. The present study provides an overview of children with MR in Mangalore taluk which to the best of our knowledge is not reported.

#### Materials & Methods:

In this descriptive study, the data were obtained from the official records of Inclusive Education Resource Centre (IERC) of Mangalore during the year 2011. The IERC is a programme by the Government of India to educate and mainstream the children with disabilities under the Sarva Shiksha Abhiyan (Education for all movement). The IERC adopts a stratified multistage sampling design for collecting the disability data. Mangalore taluk is divided into North and South block which are further divided into thirteen and fifteen clusters respectively. In the North block there are 317 schools of which 4 are special schools, similarly in the South block there are 322 schools of which 2 are special schools and one integrated school. The number of school going children in the rural area is 70,121 and 67,246 in the urban. The details of each child which includes name, date of birth, age, sex and religion from all the schools in each cluster is consolidated. Children who belong to any one of the ten disabilities as outlined by The Ministry of Human Resource Development will be listed accordingly. To know the age of diagnosis and type of MR parents of 324 children were interviewed. The parents especially the mother was informed of the study, written consent was taken, before interviewing and referring the medical records of the child to note the age of onset of diagnosis for MR. Intelligence quotient (IQ) was assessed using Binet Kamat Test, Seguin Form Board and Vineland Social Maturity Scale. This study is approved by the University Ethics committee. All the collected data were

tabulated and analyzed by SPSS version 13.0 for Windows. Findings are described in terms of percentages. Chi-square test and Fisher's exact test was carried out to test the differences between proportions. A probability level of less than 0.05 is considered significant.

#### Results & discussion:

In Mangalore a total of 2,823 children were recognized with different types of disabilities. About 561 children with mental disorder were identified, with 37.3% (209) in the rural with a prevalence rate of 3 per 1000 and 62.7% (392) in the urban area having a prevalence rate of 5 per 1000. Distribution of children with MR by sex, religion, age and location is presented in Table 1. Some Indian studies have reported a prevalence rate of psychiatric disorders in children ranging from 2.6 to 35.6 percent.<sup>14-16</sup> Prevalence rates ranging between 1/1000 – 6/1000 are reported from Ghana,<sup>17</sup> Thailand,<sup>18</sup> and Cuba.<sup>19</sup> The prevalence of MR was higher among males than in females ( $p < 0.001$ ) which are in support with other studies,<sup>20</sup> but there was no notable sex difference between rural and urban areas (Fig 1). Among the religions prevalence was higher among Hindus. More children were found between 9 to 12 years of the age group which is in support of other reports.<sup>20</sup> Prevalence according to severity of MR and age of diagnosis is shown in Table 2. Of the 324 MR children observed 48.15% of them showed mild MR followed by 29% moderate, 14.2% severe and 8.6% profound MR (Fig 2). A study among people with mental disability in four villages of Udupi, Karnataka, India presented mild, severe, moderate and profound types of MR with 45.5%, 27.3%, 18.2% and 9.1% respectively.<sup>9</sup> Severe and Profound MR were diagnosed at a much earlier age group than in mild and moderate types.

**Conclusion:** There is a lack of up-to-date statistics on children with mental disability in Mangalore. This study provides an insight to the school going children with mental retardation. Future research is needed to look into the causes for MR, proper classification and early intervention for capacity building and raising awareness. These estimates have major implications for service planning and warrant further study.

**Acknowledgements :**

The authors acknowledge the financial assistance under the Yenepoya University Seed Grant Scheme (2011-017). Authors are grateful to Block Resource Centre co-ordinator

– Mangalore North range and Mangalore South range of Inclusive Education Resource Centre for their support. The authors also thank all the participants who contributed in this study.

Table 1: Distribution of children with MR by sex, age, religion and location

Location	Rural				Urban			
	Male		Female		Male		Female	
	121 (57.89)		88 (42.1)		203 (57.67)		149 (42.33)	
Age	5 to 8	9 to 12	13 to 16		5 to 8	9 to 12	13 to 16	
	78 (37.32)	116 (55.5)	15 (7.2)		87 (24.7)	164 (46.6)	101 (28.7)	
Religion	Hindu	Muslim	Christian	Others	Hindu	Muslim	Christian	Others
	108 (51.7)	90 (43.1)	11 (5.3)	0	204 (57.9)	64 (18.2)	82 (23.3)	2 (0.6)

Percent in parenthesis

Table 2: Distribution of severity of MR by age of diagnosis

Age of diagnosis (years)	IQ				Total
	Mild	Moderate	Severe	Profound	
0 to < 1	14 (9.0)	6 (6.4)	36 (78.3)	20 (71.4)	76 (23.5)
1 to < 2	24 (15.4)	10 (10.6)	4 (8.7)	8 (28.6)	46 (14.2)
2 to < 3	38 (24.4)	30 (31.9)	6 (13.0)	0 (0)	74 (22.8)
3 to < 4	60 (38.5)	42 (44.7)	0 (0)	0 (0)	102 (31.5)
4 to 5	20 (12.8)	6 (6.4)	0 (0)	0 (0)	26 (8.0)
Total	156 (100)	94 (100)	46 (100)	28 (100)	324 (100)

Percent in parenthesis  
p=0.029

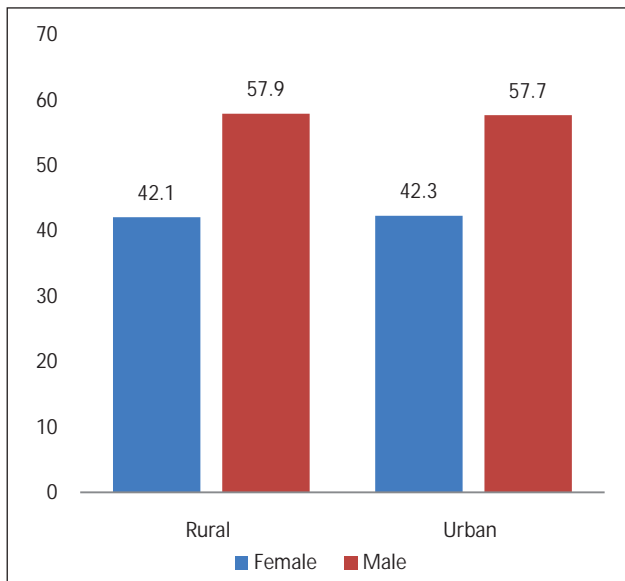


Fig 1: Percent distribution of sexes in rural and urban areas

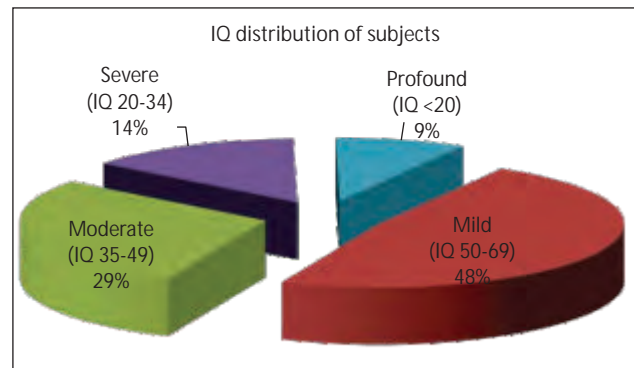


Fig 2: Percent distribution of MR children based on IQ

**References:**

1. World Health Organization. Training in the community for people with disabilities. WHO: Geneva; 1989).
2. Curry CJ, Stevenson RE, Aughton D, Byrne J, Carey JC, Cassidy S, et al. Evaluation of mental retardation: recommendations of a consensus conference. *Am J Med Genet* 1997;72(4):468-77.
3. Bregman JD. Current developments in the understanding of mental retardation. Part II: Psychopathology. *J Am Acad Child Adolesc Psychiatry*, 1991; 30, 861-872.
4. Mental Retardation. Definition, classification and systems of supports. 10th ed. Washington DC: the association: American Association on Mental Retardation (AAMR); 2002.
5. Kiely M. The prevalence of mental retardation. *Epidemiol Rev.* 1987; 9:194-218.
6. World Health Organization. 1992. International Classification of Diseases – Tenth Revision. Geneva.

7. Stevenson RE, Procopio-Allen AM, Schroer RJ, Collins JS. Genetic syndromes among individuals with mental retardation. *Am J Med Genet Part A*. 2003;123:29-32.
8. Ganesh KS, Das A, Shashi JS. Epidemiology of disability in a rural community of Karnataka. *Indian J Public Health*. 2008;53(3):125-129.
9. Kumar SG, Das A, Bhandary PV, Soans SJ, Kumar HNH, MS MSK. Prevalence and pattern of mental disability using Indian disability evaluation assessment scale in a rural community of Karnataka. *Indian J Psychiatry*. 2008;50:21-3.
10. Pati RR. Prevalence and pattern of disability in a rural community in Karnataka. *Indian J Community Medicine*. 2004;29(4):186-187.
11. Census of India. Disabled population by type of disability, age, sex and type. New Delhi: Registrar General Office, 2001.
12. National Sample Survey Organization. Disabled persons in India: NSS 58<sup>th</sup> Round (July-December-2002). Report No. 485. New Delhi: Ministry of Statistics and Programme Implementation, Government of India, 2002.
13. [www.censuskarnataka.gov.in](http://www.censuskarnataka.gov.in)
14. Sethi BB, Gupta SC, Kumar R, Kumar P. A psychiatric survey of 500 rural families. *Indian J Psychiatry* 1972;14:183-96.
15. Verghese A, Beig A. Psychiatric disturbances in children: An epidemiological study. *Indian J Med Res* 1974;62:1538-42.
16. Lal N, Sethi BB. Estimate of ill health in children in an urban community. *Indian J Paediat* 1977;4:55-64.
17. Biritwum RB, Devres JP, Ofosu-Amaah S, Marfo C, Essah. ER. Prevalence of children with disabilities in central region, Ghana. *W Afr J Med*. 2001;20:249-55.
18. Pongprapai S, Tayakkanonta K, Chongsuvivatwong V, Underwood P. A study on disabled children in rural community in southern Thailand. *Disability and Rehabilitation*. 1996;18:42-6.
19. Lopez JI, Pineda LMV, Botell ML. Retraso mental y calidad de vida. *Revista Cubana de Medicina General Integral*. 2005;21:1-7.
20. Maulik PK, Harbour CK. Epidemiology of Intellectual Disability. In: JH Stone MB, editor 2013.