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Original Work

Study of health status and etiological factors of mentally challenged children in a school for mentally challenged in rural Maharashtra

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ABSTRACT: The mental health of the child affects his physical health and the learning process. The present study was conducted to study the health status and etiological factors among 58 mentally challenged children in a school for the mentally challenged at Sangamner. Majority of mentally challenged children (68.0%) were in 5-9 years age group. Most of them had moderate retardation (43.0%). Down's syndrome (17.23%) was commonest, followed by Fragile X syndrome (6.89%). In 70.68% children no clinical syndrome was associated with mental retardation. 60.35% children were offspring of consanguineous marriages. In 63.8% children the causes for mental retardation were idiopathic, and genetic causes were found in 29.31% children. For mentally challenged children better quality of life should be provided by disability limitation and suitable rehabilitation.

KEY WORDS: Mentally challenged; Consanguineous marriage

INTRODUCTION

Mental retardation (MR) is defined as sub-average general intellectual functioning, which originated during developmental period and is associated with impairment in adaptive behaviour. Mental handicap is the present term used for mental retardation. It is a condition of sub-average intellectual function combined with deficits in adaptive behaviour. Persons with less than average mental ability or intelligence are called mentally challenged[1].

Nearly 83 million of the world's population is estimated to be mentally challenged, with 41 million having long-term or permanent disability. It ranks fourth in the list of leading causes of disability[2]. Terms which were previously used such as idiot, moron and imbecile are now discarded. At least 2 per cent of India's population is said to be suffering from some kind of mental disability.

Mental retardation may occur as part of a syndrome or broader disorder but is most commonly an isolated finding[3]. Mental handicap is one of the most frequently encountered, and most distressing, disabilities among children in most industrialized[4,5] and developing countries[6-8] world-wide.

The prevalence varies considerably because of the varying criteria and methods used in the surveys, as well as differences in the age range of the samples. The overall prevalence of mentally challenged children is between 1-3%. It is more common in developing countries because of the higher incidence of injuries and anoxia around birth, and early childhood brain infections. Population studies have shown that overall prevalence of mild to severe mentally challenged ranges from 2.5 to 5 per thousand. Genetic contribution to this group accounts for 15-30%[9].

The WHO had declared that the World Health Day theme for the year 2001 is "Mental Health: Stop exclusion - dare to care" in order to focus global

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public health attention on this relatively neglected problem. The Bhore Committee[10] concluded that mental patients requiring institutional treatment would be 2 per 1000 in the country. In 1966, the Mental Health Advisory Committee to the Govt. of India suggested a prevalence rate of mental illnesses of 20 per 1000 population with 14 per 1000 in rural areas[11]. Information regarding the prevalence of mental disorders in India needs to be generated to establish a database for mental health planners to assess the status of mental health in the country. Since no similar study was conducted in Maharashtra, the present was conducted to have a bird's eye view of the burden of mental retardation in India.

METHODOLOGY

It was a cross-sectional study. A visit was made to school for mentally challenged at Sangamner and a total of 58 mentally challenged students were interviewed and examined. All the children i.e. 58 enrolled in the school were males. This is due to the policy of school to admit only male children. All the mentally challenged children were periodically examined by a team of competent doctors and the records were duly maintained in their case files. The Intelligence Quotient (IQ) level was assessed by using WHO recommended latest methods protocol of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)[12]. Three criteria must be met for diagnosis of mental retardation i.e. an IQ below 70, significant limitations in two or more areas of adaptive behavior (as measured by an adaptive behavior rating scale, i.e. communication, self-help skills, interpersonal skills, and more), and evidence that the limitations became apparent before the age of 18 years. It is formally diagnosed by professional assessment of intelligence and adaptive behavior. The following ranges, based on Standard Scores of intelligence tests, reflect the categories of the American Association of Mental Retardation, the Diagnostic and Statistical Manual of Mental Disorders-IV, and the International Classification of Diseases-10:

Class	IQ
Profound mental retardation	< 20
Severe mental retardation	20–34
Moderate mental retardation	35–49
Mild mental retardation	50–69
Borderline intellectual functioning	70–80

Data collection was done from (a) case record files in school, (b) general health check-up of children and by (c) interview method. The study period was from March 2008 to September 2008. All the relevant information was collected on a predesigned and pretested proforma. The data was tabulated and analyzed using appropriate statistical tests. The present cross sectional study was carried out with the help of third year students of Rural Medical College, PIMS, Loni.

RESULTS

The age wise distribution of 58 mentally challenged children is shown in **table 1**. The age range was from 0 to 19 years. Most of the children (68.0%) were in 5-9 years age group followed by 10-14 years (27.6%).

Table 1: Age wise distribution of mentally challenged children

Age (years)	Number (No.)	Percentage (%)
0-4	1	1.72
5-9	40	68.0
10-14	16	27.6
15-19	1	1.72
Total	58	100.0

The distribution of mentally challenged children according to Intelligence Quotient (IQ) status is shown in **table 2**. As per WHO criteria majority of the children suffered from moderate (43.0%) retardation, followed by Mild (36.0%) and severe (21.0%) retardation. None had profound retardation.

Table 2: Distribution of mentally challenged children according to IQ

Grading (as per WHO)	Number (No.)	Percentage (%)
Normal (IQ >70)	0	0.0
Mild (IQ 50-70)	21	36.0
Moderate (IQ 35-49)	25	43.0
Severe (IQ 20-34)	12	21.0
Profound (IQ <20)	0	0.0
Total	58	100.0

The common clinical syndromes associated with mentally challenged children are shown in **table 3**. In majority (70.68%), no syndrome s present, followed by Down's syndrome (17.23%) and Fragile X syndrome (6.89%).

Table 3: Distribution of mentally challenged children according to clinical syndromes

Clinical syndromes	No.	%
No syndrome present	41	70.68
Down's syndrome	10	17.23
Fragile X syndrome	4	6.89
Microcephaly	1	1.72
Autism	1	1.72
Hydrocephalus	1	1.72
Total	58	100.0

The relation of consanguineous marriages with grade of mental retardation is shown in **table 4**. In the present study 60.35% mentally challenged children were offspring of consanguineous marriages and 91.6% had severe mental retardation. The etiological factors responsible for mental retardation are shown in **table 5.** In 63.8% children causes were idiopathic and majority (91.0%) had mild retardation. In 29.3% genetic factors were responsible and majority (42.0%) had severe retardation.

Table 4: Distribution of mentally challenged children according to marriage of their parents

Type of marriage	Mild IQ (50-70)		Moderate IQ (35-49)		Severe IQ (20-34)		Total	
	No.	%	No.	%	No.	%	No.	%
Consanguineous	3	14.28	21	84.0	11	91.6	35	60.35
Non-consanguineous	18	85.72	4	16.0	1	8.4	23	39.65
Total	21	100.0	25	100.0	12	100.0	58	100.0

Table 5: Distribution of mentally challenged children according to etiological factors

Etiological factor	Mild IQ(50-70)		Moderate IQ (35-49)		Severe IQ (20-34)		Total	
	No.	%	No.	%	No.	%	No.	%
Idiopathic	19	91.0	14	56.0	4	34.0	37	63.8
Genetic	2	9.0	10	40.0	5	42.0	17	29.31
Drugs	0	0.0	0	0.0	1	8.0	1	1.72
Rh – incompatibility	0	0.0	0	0.0	1	8.0	1	1.72
Pre-term	0	0.0	1	4.0	0	0.0	1	1.72
Head injury	0	0.0	0	0.0	1	8.0	1	1.72
Total	21	100.0	25	100.0	12	100.0	58	100.0

DISCUSSION

In the present study, majority of mentally challenged children (68.0%) were in 5-9 years age group. Out of 58 mentally challenged children, 40 (69.0%) belonged to lower class IV and 18 (31.0%) to middle class III of Modified Prasad's socio-economic classification. In recent times there has been an increasing focus on gender differences in studying the prevalence, causation and course of mental disorders. Eyman et al in his study revealed that the overall prevalence of mental disorders was not different between men and women[13]. Majority of the children suffered from moderate (43.0%) retardation, followed by Mild (36.0%) and severe (21.0%) retardation. None had profound retardation. Most children with mild MR were free of any neurological complications, CNS malformations. They were more likely, to be born into families of low socioeconomic status, low IQ and little education.

In most of the mentally challenged children (70.68%) no clinical syndrome was present. Most common clinical syndrome was Down's syndrome (17.23%), followed by Fragile X syndrome (6.89%). In study by Jain and Verma on 1206 children with mental retardation, 6.38% were found to be positive for fragile X syndrome using cytogenetic techniques[14].The number of associated disorders appears to increase with the level of severity of mental retardation. Among mentally challenged children the prenatal causes include congenital infections such as cytomegalovirus, toxoplasmosis, rubella and chromosomal anomalies

like Down's syndrome[15]. Chromosomal aberrations and simple Mendelian traits account for about 20%, polygenic traits for 10%, 5% due to environmental factors and remaining 65% are either controversial or unknown[16]. The intrauterine exposure to drugs like, cocaine, amphetamines, anticonvulsants, warfarin etc. may also lead to severe mental retardation. In the study 60.35% of mentally challenged children were offspring of consanguineous marriages and 39.65% of non-consanguineous marriage. The products of consanguineous marriages had 91.6 % with severe mental retardation, 84.0% moderate and 14.28% mild mental retardation. Similar marriage pattern was observed in studies among many Pakistanis[17] and showed significant association of consanguinity and mild MR. Although consanguineous marriage is shown to be associated with increased risk of birth defects and infant mortality[18] In 63.8% children the causes were unknown. The next most common etiological factor responsible for mental retardation was genetic cause (29.31%). McLaren and Bryson[19] studied that in 30 to 40% of cases, the cause remains unknown. According to Sofocleous et al[20] fragile X syndrome is the second most common cause of mental retardation.

CONCLUSION

With a prevalence of ~2%, mental retardation is the most common reason for referral to medical genetic services[21]. Mental retardation is among the most difficult categories of childhood disability to document epidemiologically, in part because its causes are multi-factorial. In less developed countries, the difficulties of documenting the causes of MR are compounded by lack of diagnostic services and routinely collected health data. Many cases of mild retardation look like normal children and are diagnosed only after scholastic backwardness or failure. Our findings suggest that primary prevention of serious cognitive disabilities will require prevention of the prenatal, natal and postnatal factors, consanguineous marriages.

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