

Original Article:

Study of health status and etiological factors of mentally challenged children

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Abstract

The mental health of the child affects his physical health and the learning process. The aim of the present study was to study the health status and etiological factors among 58 mentally challenged children in a school for mentally challenged at Sangamner, in Rural Maharashtra. Majority of mentally challenged children (68.0%) were in 5-9 years age group. Most of them had moderate retardation. (43.0%) In majority of 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%). 60.35% children were off springs of consanguineous marriages. Idiopathic causes (63.8%) followed by genetic causes (29.31%) were common etiological factor responsible for mental retardation. Mental handicap should be prevented by application of preventive measures in preconception, prenatal and intranatal periods and during infancy, childhood and adolescence.

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 challenged¹. 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 disability². 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.

Mentally challenged may occur as part of a syndrome or broader disorder but is most commonly an isolated finding³. Mentally challenged children are one of the most frequently encountered, and most distressing, disabilities among children in most industrialized^{4, 5} and developing countries⁶⁻⁸ 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.

Among mentally challenged children the prenatal causes include congenital infections such as cytomegalovirus, toxoplasmosis, rubella and chromosomal anomalies like Down's syndrome¹⁰. 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 unknown¹¹. Psychologists have used the concept of IQ to classify the degree of mental retardation. The IQ scores rest on the assumption that intelligence distribution in the general public follow the normal or Gaussian curve, with a mean of 100.

The WHO gave the following classification of mental retardation¹².

Mild mental retardation	IQ	50-70
Moderate mental retardation	IQ	35-49
Severe mental retardation	IQ	20-34
Profound mental retardation	IQ	under 20

Material and Methods:

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 in residential school. Materials used were a printed pre-tested and pre-designed questionnaire, weighing machine, measuring tape, torch, snellens chart, tuning forks etc. Data collection was done from (a) case history records in schools, b) health check-up of children and by (c) interview method. The study period was from March 2008 to Sep.2008. All the relevant information was collected on a predesigned and pretested proforma. The data was tabulated and analyzed using appropriate statistical tests.

Results: The results are given in tables 1-5

Table 1

Age Wise Distribution of Mentally challenged children

Age (years)	Number	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

Table 2

Distribution of mentally challenged children according to Intelligence Quotient (IQ)

Grading (as per WHO)	No.	%
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

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

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

It was observed that majority of mentally challenged children (68.0%) were in 5-9 years age group. Out of 58 mentally challenged children, 40 (69.0%) of belonged to upper lower class IV and 18 (31.0%) to lower 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 and behavioural disorders. Eyman RK et al in his study revealed that the overall prevalence of mental and behavioural disorders was not different between men and women¹³.

WHO criteria¹² based on Intelligence quotient were used for grading of mental status of children. Majority of the students suffered from moderate (43.0%) retardation, followed by Mild (36.0%) and severe (21.0%) retardation. None had profound retardation. Most individuals with mild MR were free of neurological complications, CNS malformations, and dysmorphism. 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%). The number of associated disorders appears to increase with the level of severity of mental retardation. The most common factor associated with mentally challenged is chromosomal abnormality, particularly Down's syndrome¹⁴.

In the study 60.35% of mentally challenged children were off springs of consanguineous marriages and 39.65% of non-consanguineous marriage. The products of consanguineous marriages had 91.6 % students with severe mental retardation, 84.0% moderate and 14.28% mild mental retardation. Similar marriage pattern was observed in studies among many Pakistanis¹⁵ 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 mortality¹⁶. In study by Phalke in Sangli District of Western Maharashtra consanguinity

was present in 20.14% cases among institutionalized mentally challenged children. (Phalke D.B. Thesis work- Study of health status of children attending school for mentally retarded in Sangli District. 1992; 65-75, personal communication).

In 63.8% children no etiological factor i.e. idiopathic cause was observed. Next most common etiological factor responsible for mental retardation was genetic cause (29.31%). Results in a study from Finland showed that prenatal conditions were most often associated with severe MR (64%), and perinatal conditions with mild MR (27%). McLaren and Bryson¹⁴ studied that in 30 to 40% of cases, the cause remains unknown.

Phalke et al¹⁷ observed among 134 cases of institutionalized mentally challenged that idiopathic causes (31.3%), pre-natal (23.13%), perinatal (26.12%) and post-natal (19.4%) factors were most common¹⁷.

Conclusion

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 marriage.

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