Research Paper Home Science

Socio-Economic and Nutritional Status of Children with Mental Retardation

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ABSTRACT

Mental Retardation is a state of developmental deficit beginning in childhood that results in significant limitation of intellect or cognition and poor adoption to the demands of everyday life. When a child has some developmental disorder, it affects the entire family and in turns the society. India has a very large number of disabled persons. It has been estimated that ten percent of world's population are either physically or mentally handicapped all over the world. The developing and the under developed countries have the lion's share of world's handicapped population and 350 million handicapped are out of reach and out of help. In about one-third of all cases, the cause of mental retardation is not known. Therefore, it is the felt need to identify the causes for it thereby that to prevent the future generation from disabilities particularly mental retardation.

Keywords : Mental Retardation (MR); Socio-Economic Conditions; Nutritional Status, IQ Level; Health Problems

Introduction

A disability is a condition or function judged to be significantly impaired relative to the usual standard of an individual or group. The term is used to refer to individual functioning, including physical impairment, sensory impairment, cognitive impairment, intellectual impairment, mental illness, and various types of chronic disease. Mental handicap is a condition characterised by subnormal intellectual ability and arrested or delayed development. The terms 'mental retardation', 'mental deficiency', 'mental handicap' and 'mental sub-normality' refer to the same condition. Persons with less than average mental ability or intelligence are called 'mentally retarded'. It is a development disability that is marked by lower than-normal intelligence for daily living skills. Normally it presents at birth or develops early in life. Cerebral palsy that is paralysed brain function may result in mental handicap. Some persons with cerebral palsy are intellectually normal, but have problems only with coordination of their body movements. Other causes include lack of iodine in the diet of the mother, the brain infections before and after birth, inadequate antenatal care, birth injuries, low birth weight, and inadequate nutrition in the first two years of life, injuries that untreated in childhood and poisoning from lead, and pesticides.

Nutrients and Mental Health

Low energy intake often feels apathetic sad or hopeless. Developing fetuses and young infants are particularly susceptible to brain damage from malnutrition. Proteins are made up of amino acids linked together in various sequences and amounts protein intake and intake of individual amino acids can affect brain functioning and mental health. Dietary intake of fats may also play role in regulating mood and brain function. Some studies suggest that reducing fat and cholesterol in the diet may deplete brain serotonin levels, causing mood changes, anger and aggressive behaviour.

Thiamine deficiency can develop "Wernicke - Korsakoft syndrome" which is characterized by confusion, mental changes, abnormal eye movements and unsteadiness that progress to serve memory loss. Vitamin B -12 is needed to maintain the outer coating, called the myelin sheath on nerve cells. Inadequate, myelin results in nerve damage and impaired brain function. Vitamin B – 6 deficiencies characterized by mental changes such as fatigue, nervousness, irritability, depression, insomnia, dizziness and nerve changes. Vitamin B – 6 is needed by the body to produce most of the brains neurotransmitters. Acute magnesium deficiency can progress to apathy, delirium, convulsions, coma and death. Zinc is very important to brain functions, and it is involved in maintaining cell membranes and protecting cells from damage. Zinc deficiency can cause neurological impairment, influencing appetite, taste, smell and vision and it has also been associated with apathy, irritability, jitteriness and fatigue.

India has a very large number of disabled persons. A comprehensive country wide survey of persons with disability revealed that approximately over 90 million people are suffering from one or other kind of disability. It has been estimated that ten percent of world's population i.e. about 500 million people are either physically or mentally handicapped all over the world. The developing and the under developed countries have the lion's share of world's handicapped population and 350 million handicapped are out of reach and out of help. In about one-thirds of all cases, the cause of mental retardation is not known. Therefore, it is the felt need to prevent the children from the disabilities particularly mental retardation in future and hence, the present study is one such modest attempt made on children with mental retardation.

Study Objectives

a. To understand the socio-economic background of the mentally retarded (MR) children;

b. To bring out the factors responsible and the patterns of mental retardation;

c. To assess the nutritional status through height, weight, MUAC, weight for age, height for age, weight for height and nutritional requirement); and

d. To bring out the associated health problems prevalent among MR children.

Research Design

To achieve the objectives of the study a school for MR children that located at Nilakottai in Dindigul district of Tamil Nadu was selected. Of the total (119) mentally retarded children found in the school all the children who were in the age group of 6-12

years (80) were selected and their parents were interviewed. A structured interview schedule was used to collect data from them. Body size and growth of MR children were assessed through the measurements like height, weight and MUAC. Anthropometric index of weight for age, height for age and weight for height were calculated as an indicator of growth status in the children. To arrive at general conclusions the collected data were converted in percentage and interpretations presented in summary form.

Summary of the Study

Who were being Mentally Retarded

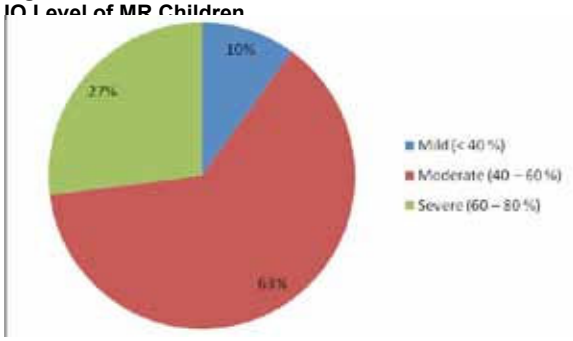
It is found that mental retardation was found more among males than females. Of the total (119) MR children two-thirds (66.4%) of them were constituted by males and the rest (33.6%) constituted by females. The same pattern has also reflected in the present study. The mean age for them was 9.6. A large majority (95%) of them were Hindus of which 77.5% were Backward Castes followed by Scheduled Castes (22.5%). A majority of their parents were literates (65%) followed by illiterates (30%) and altogether constituted 95 per cent in the total. Three-fourths (75%) of the MR children's parents were daily wagers followed by farmers (10%), weavers (12.5%), and teachers (2.5%). About 55% of their parents earn Rs. 1,000 – 2,000/- per month whereas another 22.5% earn Rs. 2000 – 3,000/- while the remaining 22.5% were belong to various income categories. The average monthly income of the MR children's family was Rs. 1,975/-. Their household includes an average of four members. More than half (52.5%) of the mentally retarded children were first born followed by second (32.5%), third (12.5%) and fourth (2.5%) birth ordered. The mean birth order for them was one.

What made Mental Retardation in Children

While probing the causes for mental retardation it was found that early marriage of women made them to give birth of child with mental retardation. The mother's mean age at the time of marriage was 20.5 whereas father was at 25.5 years. Half of the total parents (50%) gave birth within two years from their marriage while after three years by another 30% of the parents. It was found that the MR children included in the study were born after an average of two years from their parental marriage and the mother's mean age during at the time of their child birth with mental retardation was 22.3 years. It has to be noted that 82.5% of the MR children were born at hospital of which 80% of them born normally.

It was proved that early birth and low birth weight caused mental retardation in children. Their average weight at birth was 2.4 kg and the mean foetus period for them was nine months. About 77.6% of the parents noticed their child's disability while they were at an average of 2.2 years old. The children accommodated in the school were found with several deficiencies along with mental retardation. The pattern reveals mental retardation alone (27.5%), mental retardation with hearing impairment (20%), mental retardation with speech impairment (25%), mental retardation with both speech and hearing impairment (25%), and mental retardation with stunting (2.5%). A large majority (80%) of the MR children were not affected by any diseases after birth; 72.5% of their ancestors were not affected by any disability; and 95% of their family members were also free from mental retardation, according to the parents. About 83% of the children's parents were not affected by any disease during their pregnancy. The fact was that 85% of the total MR children's parents were not relatives prior to their marriage. The IQ level of the MR children shows that 60% of them were found with Moderate (40 – 60 %) mental retardation followed by another 27% severely (60 – 80 %) retarded whereas Mild Retardation (< 40 %) constituted 10 % in the total. Figure 1 shows the IQ level of MR children.

Figure 1
IQ Level of MR Children



Nutritional Assessment

Anthropometric assessments like MUAC, weight for height, weight for age and height for age shows that Mentally Retarded children were malnourished according to weight for height, weight for age and height for age. Mean values of MUAC was within the normal range. Table 1 shows this.

Table 1
Mean values of Anthropometric Measurements among MR Children

Anthropometric Measurements	No. of Male Mean & SD	No. of Female Mean & SD	t - test
Mid Upper Arm Circumference (MUAC)	15.5 ± 2.48	16.1 ± 2.2	1.015
Weight for age	67.0 ± 13.9	62.0 ± 13.3	1.491
Height for age	85.5 ± 7.5	84.8 ± 8.01	0.360
Weight for height	90.0 ± 13.6	86.9 ± 17.1	1.074

As far as associated health problems among MR children was concerned 12% were affected by Cerebral Palsy followed by Down syndrome (6%), Micro cephalous (5%) and Cretinism constituted (1%). Table 2 portrays this.

Table 2
Associated Health Problems among MR Children

Associated Health Problems	No. of MR Children		Total
	Male	*Female*	
Cerebral palsy	9	2	11 (12%)
Down syndrome	5	1	6 (6%)
Cretinism	1	-	1 (1%)
Micro cephalous	3	1	4 (5%)
None	39	19	58 (76)
Total	57 (71.3%)	23 (28.7%)	80 (100%)

It was found that the mean intake of energy, beta carotene, thiamin, riboflavin and iron of the mentally retarded children in the age group of 6-9 years were comparatively lesser than the RDA allowances. On the other hand the mean intake of protein, calcium and fat were higher than the RDA allowances. The mean energy, protein, fat and calcium is higher than the RDA allowances in the case of male children of the 10-12 years of age and the other nutrients like beta carotene, thiamin, riboflavin and iron were taken in a lesser quantity. The female children in the age group of 10-12 years were having higher mean intake in energy, protein and fat but their mean intake of beta carotene, thiamine, riboflavin, calcium and iron were comparatively less than the RDA. Table 3 explains this.

Table 3
Mean Intake of Nutrients among MR Children

Nutrients	6 -9 years		10 - 12 years			
	RDA	Mean &SD	Male		Female	
			RDA	Mean & SD	RDA	Mean & SD
Energy (kcal)	1950	1478.9 ±237.9	2190	2690.2±595.4	1970	2121.8±511.8
Protein (g)	41	45.9±1.0	54	76.4±22.3	57	71.19± 15.3
Fat (g)	25	27.9±7.82	22	63.34±23.8	22	42.4± 23.5

Betacarotene (µg)	2400	496.2±164.3	2400	827.3±336.4	2400	694.8± 210.8
Thiamine (mg)	1.0	0.4463±0.16	1.1	0.9400±0.34	1.0	0.63± 0.32
Riboflavin (mg)	1.2	0.4661±0.135	1.3	0.97±0.588	1.2	0.857±0.588
Calcium (mg)	400	438.9±110.5	600	655.7±157.8	600	544.2±133.9
Iron (mg)	26	13.4±2.8	34	17.6±2.3	19	15.9±2.4

Conclusion

While concluding the present study on mental retardation it is important to be highlighted that educationally weaker and economically poor people's children are vulnerable to mental retardation. Mostly mental retardation is prevalent in small families and the first born child is prone to mental retardation. Early marriage and early pregnancy, early birth and low birth weight causes mental retardation in the child. Majority of them found with moderate IQ level and malnourished according to weight for age, height for age and weight for height. The quality of their food intake is poor. Many of them were with the associated health problems like cerebral palsy, Down syndrome, Cretinism and Micro cephalous. Half of their food consumption was less than Recommended Dietary Allowances (RDA).

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