

Mental Retardation (MR) Etiology in Children Referred to Care Services

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ARTICLE INFO	ABSTRACT
<p>Article type: Original Article</p> <hr/> <p>Article history: Received: 15-June-2014 Accepted: 5-July-2014</p> <hr/> <p>Keywords: Children Mental retard Social welfare</p>	<p>Introduction: It is estimated that 2800000 to 4800000 individuals in Iran suffer from some kind of mental or physical handicap. According to Iranian social welfare university, about 24000 mental retard children would be added to this population. The aim of this study was to evaluate demographic factors which were associated with mental retardation in Khorasan Razavi population.</p> <p>Materials and Methods: In this cross sectional study, the records of all mentally retarded children who had been referred for further evaluation to Mashhad social welfare was evaluated between 2004 and 2013. To evaluate mental retardation severity, Vineland social maturity scale was used for children younger than (5.5) years old, or the older children who did not respond to other tests. In cases of children older than (5.5) years who could communicate, Wechsler Intelligence Scale for Children (WISC) and Raven's Progressive Matrices were performed. Tests final confirmation hanged on psychiatric interview and clinical assessment. Data was analyzed by SPSS version 16 and parametric and non parametric tests were used.</p> <p>Results: A population of 200 children with a mean age of 7.5 ± 6.6 years were evaluated. Smoking, drug abuse and consanguineous marriage were the main factors associated with mental retardation severity. (57%) of children had a relative with mental retardation.</p> <p>Conclusion: Considering Mental Retardation (MR) financial burden, planning to reduce and control preventable factors such as parents' drug abuse could be possible through education and cultural changes.</p>

► Please cite this paper as:

Foroutan M. MR Etiology in Children Referred to Care Services. Patient Saf Qual Improv. 2014; 2(4):165-167.

Introduction

Mentally retarded children require more socio psychological support in comparison to their peers (1).

Intellectual disabilities lead to certain special needs, such as special education. Although more than 2000 causes for Mental Retardation (MR) have been proposed, its main etiology is yet to be recognized (2).

It is estimated that about (3%) of school-aged children have intellectual disabilities (3).

So, diagnosing mental retardation in early childhood and identifying its causes might be helpful in reducing the frequency of this condition. American association of mental retardation has defined MR as intellectual disabilities and adaptive behavior defects which are observed during growth and development. Diagnostic and Statistical Manual of Mental Disorder fourth Edition (DSM IV) classified MR patients as four categories; mild, moderate, severe, deep and undifferentiated. Mentally retarded children have dynamic needs and impose several difficulties on society and their families (4). These families are affected by various physical, psychological and

economic tensions (5). It is estimated that 2800000 to 4800000 individuals in Iran suffer from some kind of mental or physical problems (6). According to Iranian social welfare university, about 24000 mentally retarded children would be added to this population annually (6). The aim of this study was to evaluate demographic factors which were associated with mental retardation in Khorasan Razavi population.

Materials and Methods

In this cross-sectional study, records of all mentally retarded children who had been referred for evaluation to Mashhad Medical Commission Department of Social Welfare between 2004 and 2013 were evaluated. Census sampling method was used. For this project, "Children" were defined as all the cases between one and 18 years old. Study method was described for their parents and written constant Testimonials were obtained. Only the cases with congenital mental retardation were enrolled in the study and children with

acquired problems were excluded. To evaluate mental retardation severity, Vineland Social Maturity Scale was used for children younger than (5.5) years old and any older children who did not respond to other tests.

In cases of children older than (5.5) years who could communicate, Wechsler Intelligence Scale for Children and Raven's Progressive Matrices were applied. Tests final confirmation hanged on psychiatric interview and clinical assessment. The first section included children demographic data, and the second inquired about their parents and environmental factors.

Children mental retardation severity is shown in table1.

Table1: Mental retardation severity

Severity	Number(percent)
Mild	10 (5)
Moderate	180 (90)
Sever	10 (5)

Data was analyzed by SPSS version¹⁶. Parametric and non parametric tests were used.

Results

200 children were evaluated in this study. Their mean age was 7.5±6.6 years. 95 children (47.5%) were male and 105 (52.5%) were female. Their demographic characteristics are summarized in table 2.

Table2: Demographic characteristics

Demographic characteristics	Mean ±SD
Mother's age (year)	30±6.7
Grandmother's age (year)	22± 7.5
Mother's height (cm)	157±5.7
Mother's weight (kg)	68±8.2
Mother's BMI(KG/M*2)	27.5 ±3.2

108 mothers (54%) had used Folic acid supplements regularly for three months before and during pregnancy. In table 3 the relationship between parents' past medical history and mental retardation severity is shown.

Table3: Relation between parents' past history and mental retardation severity

parents' past history	Mental retardation severity Count (percent)	P value
Smoking (mother)	25 (12.5)	0.084
Smoking (father)	45 (22.5)	0.003
Drug abuse (mother)	11 (5.5)	0.003
Drug abuse (father)	16 (8)	0.003
Alcohol use (mother)	1 (0.5)	0.937
Alcohol use (father)	6(3)	0.496
Medical condition (mother)	31 (15.5)	0.117
Medical condition (father)	12 (6)	0.325
Genital infection (mother)	17(8.5)	0.536
Genital infection (father)	0	-
Drug use history (mother)	20 (10)	0.428
Drug use history (mother)	8 (4)	0.129
Performing screening test before pregnancy	77 (38.5)	0.206
Abortion history	73 (36.5)	0.903
Consanguineous marriage	91 (45.5)	0.009
Positive history of mental retardation in family	114 (57)	0.003

Smoking, drug abuse and consanguineous marriage were the main factors associated with mental retardation severity. (57%) of children had a family relative with mental retardation. In table 4 environmental factors association with mental retardation severity was shown.

Table4: Environmental factors association with mental retardation severity

Environmental factors	Count/ percent	P value
Unsaturated oil	(81.3) 156	0.137
High voltage pylons	(36.5) 72	0.006

Discussion

Although more than 2000 causes have been suggested for mental retardation, its main etiology remains unclear. With regards to epidemiologic studies, (3%) of school-aged children suffer from mental retardation in USA (7). The main causes of mental retardation can be classified into three categories of congenital, prenatal, and environmental factors (7).

According to our findings, maternal smoking habit was not associated with MR severity, which is consistent with Young's (8). In another study in Iran, no correlation between parents' smoking habits and MR severity was found (9). Many parents exercise moderation in smoking thanks to pregnancy educations.

Some studies demonstrated that alcohol abuse leads to a five percent reduction in children's intellectual abilities at minimum (10), which could be prevented by parental education during pregnancy.

Alcohol consumption is low in our population due to religious believes and laws.

Goldschmidt showed that teenagers whose parents have abused drugs are at a higher risk for personality disorders, depression and intelligence quotient impairments (11). MR severity correlated with parental drug abuse in our study, and with regards to the drug abuse prevalence in our country, reducing this risk factor with appropriate education and training courses seems necessary.

Environmental elements such as soil arsenic, lead and mercury concentrations might affect the incidence of congenital MR (12). According to our data, the presence of high voltage pylons close to residential areas was the most influential environmental factor.

Such factors could be controlled by appropriate city design. Non-syndrome recessive inheritance pattern (NS-AR MR) has been reported as the main pattern in Iranian families with MR members (13). Our study showed a statistically significant correlation between positive family history of mental retardation and MR severity, which might be regarded as an evidence for the presence of genetic factors of MR in our country.

(45%) of marriage in Iran are consanguineous (14).

This elucidates the necessity of alerting the population in reproductive age and performing screening tests. World health organization statistics shows that 120 million people suffer from mental retardation all around the world (15).

MR might cause severe disability which could affect people's quality of life and restrict their performance and adaptive behavior. This study had some limitations; genetic analyses were not performed on the cases and their parents due to lack of financial support.

One other important point is that the cases had been referred to assess their MR severity for being granted with financial supports or military exemption. For these reasons, exaggeration of signs and symptoms in some cases may be expected.

Conclusion

Considering MR financial burden, appropriate planning

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