

AUTISM SPECTRUM DISORDERS AMONG CHILDREN OF BROKEN FAMILIES

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ABSTRACT

Background: Autism Spectrum Disorders are a group of neurodevelopmental disorders with complex genetic components that are influenced by the environment. Although Prevalence of Autism Spectrum Disorders is increasing, there is a shortage of reliable reports in Iraq. **Study objective:** To highlight the Autism Spectrum Disorders among children of broken families. **Methods:** A cross-sectional study was carried out at Personal Status Courts in Baghdad-Iraq from January 2023 to April 2023. All children of separated couples who attended the court during this period at the time of data collection were included in the study. An interview was done with child's custodial parent in the court. Collecting data was done by using a structured questionnaire. A questionnaire of 2 parts; Sociodemographic features and Autism Spectrum Disorders' features, by using a subscale of Children Autism Rating Scale II (CARS II). Chi square and fisher's exact tests were used alternatively. **Results:** The total study sample was 44 child belonged to 36 separated couples. Their age ranged from 2 to 12 years old. The largest proportion of them were males (70.5%). Their custodial parents were mainly mothers (75%). They had negative history for both medical and prenatal health problems (75% for each). Unfortunately, (11.4%) of them didn't see their non-custodial parents for months or more (since the date of the divorce). ASD was found in 15.9% (7 out of 44) of them with boys affected at greater rates than girls (6:1). **Conclusions:** Autism Spectrum Disorders was increased among children of broken families.

INTRODUCTION

Recently, it was observed many private institutes that deal with developmental disorders like language disorders, hyperactivity disorders, autism spectrum disorders,.....etc.^[1] Diagnosis of Autism Spectrum Disorders (ASDs) was increased too. Publishing on this phenomenon is uncommon. ASDs are a group of neurodevelopmental disorders^[2] with complex genetic components that are influenced by the environment^[3] There is a shortage of reliable reports on ASD prevalence in Iraq^[4] Literature shows that broken family was a determinant of externalizing behavior problem and divorce was blamed for the negative impact on behavior of children^[5] It is well known that divorce was escalating

in the past two decades in spite of the conservative Iraqi nation and the persistence of stigma for women^[6] In 2021 divorce rate was of about 30%^[6] i.e. one divorce every four minutes, almost the highest rate in the world.^[7]

There are several environmental factors interrelating with genetic susceptibilities that are contributing to the rise in ASDs.^[8] Environment includes both social and physical environmental determinants of health^[9] Psychosocial environmental factors denote the psychological, social, and cultural environments that primarily act on mental functions and secondarily on physiology^[10] Relationships with family members, friends, colleagues and other individuals and groups are

an important part of this environment. Conversely, relationships that do not foster growth, learning, resilience and resolution of problems can themselves be a source of stress and can contribute to poor mental and physical health outcomes.^[9]

The environment is clearly a key in mediating avoidable negative outcomes and of paramount significance in secondary and tertiary interventions and supporting autistic individuals in everyday life. There it is no doubt as to the role of the psychosocial environment in moderating ASD^[10]

Some of the psychosocial risk factors for disease include family conflict, parent separation and divorce, neighborhood violence, work stress and social discrimination; these factors can hinder mental and physical health.^[9]

Divorce and parental separation are damaging to children, families, the economy, and society as a whole^[5] Although it is traumatic for all family members, however, children with autism can be particularly affected^[11] Studies have also shown that children diagnosed with autism are more likely to have experienced adverse childhood events such as witnessing or being a victim of violence.^[12]

In spite of the increasing numbers of broken families in Iraq, there is no literature on Autism Spectrum Disorder among children of these families. This was the impetus to conduct this study.

Study objective

To highlight the Autism Spectrum Disorders among children of broken families.

MATERIALS AND METHODS

A cross-sectional study was carried out at Personal Status Courts in Baghdad-Iraq from January 2023 to April 2023. All children of separated couples who attended the court during this period at the time of data collection (2 days per week) were included in the study. An interview was done with child's custodial parent in the court, (Privacy was considered). Collecting data was done for four months, using a structured questionnaire. A questionnaire of 2 parts; Sociodemographic features (age, sex, age of the child at date of divorce and information about the parents) and Autism Spectrum Disorders' features, by using a subscale of Children Autism Rating Scale II (CARS II). Children were considered to have ASD if their CARS II were ≥ 30 , and if so, they would be referred for a child psychiatrist to confirm the diagnosis and for management and follow up. Chi square and fisher's exact tests were used alternatively to examine the impact of independent variables (age, sex, family separation) on the dependent variable (ASD). $P < 0.05$ was considered significant.

The Childhood Autism Rating Scale is a 15-item observation-based rating scale. Each of the 15 items is rated on a seven-point scale (1, 1.5, 2...4) ranging from "within normal limits for that age," which is coded as one, to "severely abnormal for that age," which is coded as four. A total score is determined by summing the ratings on all 15 items. CARS total scores range from a low of 15 (within normal limits on all items) to a high of 60 (severely abnormal on all items).^[2]

RESULTS

The total study sample was 44 child belonged to 36 separated couples. Their age ranged from 2 to 12 years old with a mean (\pm SD) of 5.7 (\pm 3.02) years old. Demographic and other characteristics of these children are listed in table (1) below. The largest proportion of them were males (70.5%). Their custodial parents were mainly mothers (75%). They had negative history for both medical and prenatal health problems (75% for each). Unfortunately, (11.4%) of them didn't see their non-custodial parents for months or more (since the date of the divorce). ASD was found in 15.9% (7 out of 44) of them with boys affected at greater rates than girls (6:1).

The means (\pm SD) of their parents' age were 29.94 (\pm 6.9) and 35.9 (\pm 8.5) years for mothers and fathers respectively.

There was statistically significant difference ($p=0.001$) in ASD percent between children who were meeting their non-custodial parent for more than once per month and those who were not for months or more or even since the divorce date until the time of being met by the researcher, as shown in table (1).

As it is illustrated in table (2) below, there was no difference between mothers and fathers in their educational and employment status, while a big difference was present between them in their social status concerning remarriage after divorce. Mothers' education and occupation was significantly affecting ASD prevalence among their children and all mothers of the autistic children were highly educated and employees ($p=0.002$ and 0.001 respectively).

Table (1): Effect of children characteristics on ASD.

Characteristics of the children		Total	Autistic		P value
			N	%	
Age groups	<5 years	18	4	22.2	0.4
	≥5 years	26	3	11.5	
Age at date of divorce	≤ 3 years	28	5	17.9	1
	> 3 years	16	2	12.5	
Gender	Male	31	6	19.4	0.6
	Female	13	1	7.7	
Custodial parent	Mother	33	6	18.2	0.6
	Father	11	1	9.1	
History of other health problem	Yes	11	0	0	0.1
	No	33	7	21.2	
Prenatal health problem	Yes	11	4	36.4	0.05
	No	33	3	9.1	
Non-custodial Parent meeting per month	None	5	4	80	0.001
	Once	13	2	15.4	
	> Once	26	1	3.8	

Table (2): Effect of parents' characteristics on ASD among children of broken families.

Characteristics		Mothers			P value	Fathers			P value
		Total	ASD			Total	ASD		
			N	%			N	%	
Education	≤ secondary	22	0	0	0.002	27	4	14.8	0.6
	≥ Bachelor	14	7	50		9	3	33.3	
Occupation	Unemployed	20	0	0	0.001	17	3	17.6	0.4
	Employee	16	7	43.8		19	4	21.1	
Remarriage	Yes	2	0	0	0.5	14	2	14.3	0.6
	No	34	7	20.6		22	5	22.7	

DISCUSSION

This study showed a high prevalence of ASD (15.9%) among children of broken families. It may reflect the role of psychosocial environment. This finding is much more than that reported by CDC (1%)^[13] This might be explained by the exposure of Iraqis to war and conflicts.

Prevalence rate of ASD increased over time and differed significantly within and across sociodemographic groups^[13], and although much of this rise can be attributed to improved awareness by physicians and parents, altered criteria for diagnosis, and enhanced diagnostic tools, however, a recent study of autism in California estimated that these diagnostic variables could only account for 25% of the recent increase in prevalence. The remainder of this alarming trend must come from early life environmental or physical conditions or environment-gene interactions that impact the development of children both in utero and in early childhood.^[14]

Figure (15.9%) was among divorced which might be an affecting factor for ASD. Literature documented that divorce is stressful for both parents and their children and affect negatively development of the child. In fact, it is not the divorce per se what causes the long-term psychological difficulties for some children but the

factors associated with the divorce are the actual problem roots, among which the most important one is parental conflicts and children exposure and perception of parents' resolution to these conflicts. Much of the negative impact of divorce on children was a result of parental conflict. Other factors are the mental health of parents, the involvement of the non-main caregiver, the financial burden divorce has on the family and finally the children's own perception or appraisal of external events.^[5]

Mental health of parents can also be affected by divorce^[15] which is the second most stressful life event a person can experience.^[16] Stress during pregnancy is a known risk factor of ASD^[17] Several studies proved the relationship between mother's depression, anxiety, and personality disorders and susceptibility to autism^[18] A study results suggest that when a woman is exposed to partner abuse in the two years before giving birth, including during pregnancy, the baby has a higher chance of developing autism later^[19] Furthermore, exposure to stress and anxiety (such as shared living place with couple's families) imposes psychological tension for the parents, especially pregnant mother, and increasing susceptibility to child autism during pregnancy. Mothers, who tolerate mental stresses such as family problems, stressful living places, financial

problems, and loneliness, expose their children to different learning and mental problems such as autism.^[14] No significant difference in ASD between the age groups of the children at date of their parents' divorce ($p=1$). Low sample and sampling from court might affected this finding. Closer look at the age of the autistic children group alone can point to some fact hidden behind. Divorce is not a sudden social event that occurs rapidly, it is a slowly growing social problem and usually preceded by parental conflict that could last for years before the court divorce, especially in Iraqi society.^[20] This period without environmental stimulation, in reverse it may have exposed children to adverse psychosocial environment at their early childhood or even during fetal life period, which affect their development negatively. In Iraq, 20% of divorce occurs in first three years of marriage, and most families got children in the very first year after their marriage, and the number of children is not limited to one or two.^[7]

High rate of ASD was found among children with none meeting per month of their non-custodial parents ($p=0.001$) who were mainly fathers. This finding might reflect the role of the absence of the authority figure and of environmental stimulation, i.e., no chance for playing with peers in the neighborhood. Continuous conflicts in Iraq led to frightened situations which in turn to limit social interaction. Although law and practice strongly encourage contact with the absent parent after divorce, existing legal interventions have limited capacity to facilitate contact or reverse a downward spiral in contact relationships. In many families, parents were in conflict about the form or amount of contact. Some were quarrelling in private, others were in quest of court orders^[20] If adequate parenting time is given and non-custodial parents are actively involved in their children's lives in a positive manner, this may amend some of the possible negative effects found in children post-divorce and help them to adjust post-divorce^[15] However, more recent research has found a trend toward an increase in fathers' post-divorce involvement with their children.^[22]

In this study, children of employed mothers were more vulnerable to develop ASD than children of unemployed mothers ($p=0.001$). In Iraq, employed mothers may spend more than 8 hours per day away from her children (official work hours plus time needed for commuting to and from work place). During this time, her child would be cared by someone else, who is usually not his father. In divorced families, involvement of non- main care giver is a risk factor for autism.^[13] A study confirmed that ,the attachment between employed mothers and children is decreasing.^[23] which could affect her support to her child. Women contribute more effort than men to household tasks, and in many families, women still take primary responsibility for childcare and eldercare. Balancing work and family tasks can put additional stress on women, Heavy workloads may adversely affect women's health, especially in the presence of certain role characteristics (e.g. caring for young children). Levels of

stress-related illness are nearly twice as high for women compared to men. Job stress has been linked with heart disease, muscle/bone disorders, depression, and burnout. When family and work demands collide, the resulting stress can lead to the physical and mental health problems described above^[18,24] and again can affect mothers support to her child. In addition, mental health of parents itself is a risk factor for ASD in divorced families.^[13]

A significant effect of mothers educational level and children ASD was found in this study($p=0.002$).The association between educational level and risk of child ASD is controversy, numerous researches confirmed the correlation between low level of parental education and risk of autism, and some others indicate strength correlation between highly educated parents and incidence of autism.^[18]

In conclusion, environmental stimulation was affected negatively which in turn Autism Spectrum Disorders was increased among children of broken families.

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