OPEN ACCESS

Research Paper

Autism Spectrum Disorder in Baghdad: Preliminary Study

Zainab Ali Saleem[1], Ali Hussein Ali[1], Hussein Ali Meften[2], Ziad Tark Abd Ali[3]

ABSTRACT:

BACKGROUND:

Mental health special services for children and adolescents are inadequate in Iraq. Autism spectrum disorder (ASD) is increasing in prevalence worldwide with no study illustrating the incidence and prevalence of ASD in Iraq. More information is needed regarding autism in Iraq, the most presenting symptoms which cause the referral and the way of referral to the child and adolescent mental health services to improve these services and for a better outcome.

OBJECTIVE:

To study different characteristics of children with autism spectrum disorder visiting the outpatient clinic at the children welfare hospital in Baghdad, their referral pathway and if there are any associations between different variables.

PATIENTS AND METHODS:

By taking all the children with a diagnosis of ASD who visited the child and adolescent outpatient mental health center at the children welfare hospital coming from different Iraqi areas during ten months period from January to October 2020. A total of 292 children, a full psychiatric history and examination were done, and the diagnosis was made using DSM5 criteria and the use of childhood autism rating scale CARS. Information including the source of referral to the child and adolescent mental health service and the most presenting symptoms were also obtained.

RESULTS:

Boys (77.4%) were more than girls (22.6%). regarding the severity, (56.8%) were of a mild type. Speech problems were the most presenting symptom in (43.5%) of them. Being a boy or girl was significantly associated with the most presenting symptom and with the source of referral. Also, there was a significant association between age and the severity of the symptoms. Most of the referral was by the family member advice in (82.5%).

CONCLUSION:

Families were the most referral source to the child and adolescent mental health center. Speech problems were the most presenting symptoms which lead to referral. Psycho educational programs are needed for the health workers including the pediatricians and audiologists about the autism spectrum disorder for early detection and better outcome.

KEYWORDS: autism spectrum disorder (ASD); childhood autism rating scale (CARS); source of referral; the most presenting symptom; Baghdad; Iraq.

[1]*Autism Center, Children Welfare Teaching Hospital, Baghdad, Iraq*
[2] *Dept. of Psychiatry, Baghdad Teaching Hospital, Baghdad, Iraq*
[3] *College of Environmental Engineering, University of Baghdad, Baghdad, Iraq*

Iraqi Postgraduate Medical Journal, 2024; Vol. 23(3): 326-330
DOI: 10.52573/ipmj.2024.138198 *Received: March 2, 2023,* *Accepted: March 19, 2023*

INTRODUCTION:

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that emerges during early childhood and interferes with a person's ability to socially relate to and interact with others. ASD is associated with co morbid medical and neurological conditions and affects the quality of life of the affected individuals and their families. Its Prevalence rate is increasing worldwide. [(1)]. The causes of ASD are not clear-cut, but evidence suggests that a number of environmental and genetic factors are at play, and therefore the role of mutation has been speculated [(2,3)].

There are few types of research on ASD in the Middle East, a recent study in Qatar shows that the prevalence of ASD was 1.1% [(4)]. The total Iraqi population is more than 40 million, and nearly 40% are children and adolescents [(5)]. Studies showed that mental disorders in Iraq have increased over time [(6)]. The development of specialist services concerning mental health is needed in Iraq [(7)].

Childhood mental illness predicts adulthood mental disorders [8]. ASD can contribute to poor educational attainment and difficulty with employment, leading to negative economic implications [9].

In Iraq, there are no inpatient mental health services for children and adolescents (10). there are only 4 outpatient CAMH clinics attached to general hospitals in Baghdad, Three are run by general psychiatrists (Al Kadhimiya hospital, Ibn Rushd hospital, Central Child Hospital), and the new outpatient unit at the Children welfare hospital (related to Baghdad teaching hospital) where a new branch of training of child and adolescent psychiatry fellowship was conducted in Iraq in partnership with Australian Child and Adolescent psychiatrists to give mental health services to children and adolescents from different Iraqi regions. Over 150 to 200 children and adolescents with families visit this center monthly. Baghdad underwent several conflicts from 2003 till recently. Studies were done in conflict settings, where living under stress is a major risk factor for children and adolescents' mental health [11]. Mental disorders influence children and their families through issues such as unemployment, poverty, and homelessness. Early intervention to maltreated children or children exposed to violence can reduce the later disadvantages (12). It's essential to studya sample of children with a diagnosis of ASD, the most presenting symptoms reported by the families, and the ways of referral to specialist psychiatric services to strengthen the role of mental health services.

MATERIALS AND METHODS:

The study was carried out at the child and adolescent psychiatric outpatient department, at the children welfare hospital (a governmental hospital) which is related to Baghdad Teaching Hospital, Baghdad, Iraq. It accepts referrals from all Iraqi regions. It was a non randomly selected, purposive sample, Single-group design.

Participants

All new pediatric patients presented to the child and adolescent psychiatric outpatient clinic during ten months period (between January and October 2020) who were diagnosed with autism spectrum disorder, were included in this study. They were 292 children. Parents were interviewed, and the purpose of this study was explained to them and they were asked if they wanted to be included in the study, then oral and written informed consent to participate in the study were taken from the families. Children with diagnoses other than ASD were excluded from this study. A full psychiatric history and examination were conducted for each child and the diagnosis was made by three child and adolescent psychiatrists, depending on clinical observation and using the DSM5 criteria [13]. The severity of ASD was assessed using the Arabic version of the Childhood Autism Rating Scale (CARS) questionnaire, by two well-trained psychologists who attended many workshops outside the country. It has been used and validated by many Arabic countries [14]. The Arabic version of the questionnaire was modified by the research team to fit the Iraqi culture and improved upon review by a bilingual physician. The survey instruments were tested on 30 randomly-selected children and validated internally. For each child in this study six different variables were taken (sex, age, source of referral, residence, the severity of the autism spectrum disorder, and the chief complaint or the most presenting symptom).

Statistical analysis

Data were analyzed with SPSS, version 20

RESULTS:

The final sample consisted of 292 children, 226 males (77.4%) and 66 females (22.6%) with the age ranging between 2-16 years, and the majority were between 3 and 6 years of age as shown in the table below. All children came from urban Iraqi areas except three who came from rural areas. Most of the referral was by advice from a family member in 241 (82.5%), then by a pediatrician in 29 (9.9%) of the referral sample, and least by the audiologists and general psychiatrists. Regarding the severity of autism spectrum disorder, more than half of the children were with mild type according to the CARS scale and only 22 (7.5%) of them were with severe type. And finally, in 127 (43.5%) children the speech problem was the most presenting complaint as the parents reported, the behavioral problems were reported by parents in 59 (20.2%) children, and both speech and behavioral problems were reported as the most presenting complaints by the parents of 106 (36.3%) children.

Table 1: Demographical data.

Variables	Number	Percent
Age		
Less than 3years	83	28.4%
3 to less than 6	139	47.6%
6 to 12	65	22.3%
More than 12	5	1.7%
Sex		
Male	226	77.4%
Female	66	22.6%
Residence		
Urban	289	99%
Rural	3	1%
Referral		
Pediatrician	29	9.9%
Neurologist	8	2.7%
Psychiatrist	5	1.7%
Audiologist	9	3%
Family	241	82.5%
Severity of ASD		
Mild	166	56.8%
Moderate	104	35.7%
Severe	22	7.5%
Presenting problem		
Speech problem	127	43.5%
Behavioral problem	59	20.2%
Both	106	36.3%
Total	292	100%

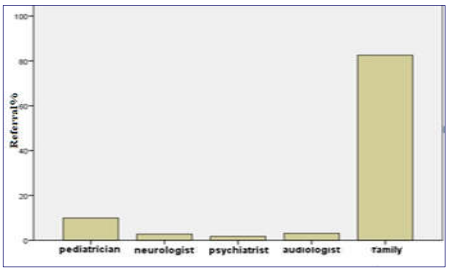

Figure.1: The source of referral in percentage to the autism center

DISCUSSION:

The sample consisted of 292 new participating children with a diagnosis of autism spectrum disorder. 226 (77.4%) boys and 66 (22.6%) girls with a ratio of more than 3.4:1 which is consistent with other studies as in Oman the male-to-female ratio was 3:1 [15] and, with a 4:1 male to female ratio in gulf states which was expected as the prevalence of ASD is more in boys than girls [16]. The majority of the presenting children (76%) were less than 6 years of age, those between 6 and 12 years were 65 (22.3%) children, and only 5 (1.7%) children were older than 12 years. In the study of autism spectrum disorder in the Sultanate of Oman, the majority of the patients were aged 5–9 years[15]. This could be due to that speech problems is the leading cause of referral in our presenting children which can be noticed in earlier ages. The majority of the referral was by family member advice 241 (82.5%) then by pediatricians 29 (9.9%) and less by others (9 referral by audiologists and 8 by neurologists and 5 referral was by psychiatrists) and no referral by media effect or from school compared to other studies in Egypt [17]. this could be due to the lake of media rule regarding education programs and less education of different health providers and school workers in Iraq. All the participating families, 289 (99%) came from urban areas except 3 (1%) families which are

similar to Sultanate of Oman study as the majority of cases were found in the capital of Oman [15]. 166 (56.8%) children were with mild symptoms, 104(35.6%) children were with moderate symptoms and 22(7.5%) were with a severe one. this could be due to the referral bias as the families of children with more severe impairments went to rehabilitation centers not outpatient clinics. speech problem was the most presenting problem in 127 (43.5%) of the presenting children, then in 106 (36.3%) children both speech and behavioral problems were the presenting causes, and only in 59 (20.2%) children the behavioral problem was the cause. In the Omani study, the most common presenting symptom was communication impairment.

Table 2: gender difference.

age	**Boy**	**girl**
Less than 3	61 20.9%	22 7.5%
3 less than 6	110 37.7%	29 9.9%
6-12	50 17.1%	15 5.1%
More than 12	5 1.7%	0 0%
Severity	**Boy**	**girl**
Mild	127 43.5%	39 13.4%
Moderate	83 28.4%	21 7.2%
Severe	16 5.5%	6 2.1%
Problems	**Boy**	**girl**
In speech	90 30.8%	37 12.7%
In behaviors	46 15.8%	13 4.5%
Both	90 30.8%	16 5.5%
Total	226 77.4%	66 22.6%

There was a significant association between the sex and the most presenting problem (P=0.038).).A significant association between source of referral and age (P=0.03).there was an association between the severity of ASD and age (P=0.00), and also a significant association between the presenting problem and the age (P=0.00) The limitation in this study was the small sample size and the way of choosing the sample (non randomly) which can't be generalized. Rapid psycho education to health providers and families about autism spectrum disorder and childhood mental health in general. More researches are needed to study the prevalence, characteristics of families, and different risk factors related to autism spectrum disorder are needed. Although it's a preliminary study, it will open the road for other more specific studies in the field of children's mental health in Iraq.

Acknowledgments and disclosures

- The authors report no competing interests
- Special thanks to Dr. Dina Mahmood (a child and adolescent psychiatrist and a fellow of the Royal Australia and New Zealand College of Psychiatrists) and her team for their continuous support.

REFERENCES:

1. Lenoir, P., Bodier, C., Desombre, H., Malvy, J., Abert, B., Ould Taleb, M., et al. Prevalence of pervasive developmental disorders. A review L'Ence´phale, 2009;35:36-42.
2. HC Hazlett, H Gu, BC Munsell, SH Kim, M Styner, JJ Wolff, JT Elison, MR Swanson, H Zhu, KN Botteron, DL Collins, JN Constantino, SR Dager, AM Estes, ACEvans, VS Fonov, G Gerig, P Kostopoulos, RC McKinstry, J Pandey, S Paterson, JR Pruett, RT Schultz, DW Shaw, L Zwaigenbaum, J Piven, IBIS Network; Clinical Sites; Data Coordinating Center; Image Processing Core; Statistical Analysis. Early brain development in infants at high risk for autism spectrum disorder. *Nature*. 2017; 542: 348-351 .DOI: 10.1038/nature21369.
3. H Shailesh, I Gupta, S Sif, A Ouhtit: Towards understanding the genetics of Autism. *Frontiers in Bioscience* (Elite edition), 2016;8: 412- 26. DOI: 10.2741/e776.
4. Autism in the Gulf States: a regional overview M. Walid Qoronfleh1, Musthafa Mohamed Essa2,3, Sana T. Alharahsheh1, Yahya Mohamed Al-Farsi4, Samir Al-Adawi3,5[Frontiers In Bioscience, Landmark, 2019; 24:324-36.

5. Omundi I. Iraq demographics profile.
6. Alhasnawi S, Sadik S, Rasheed MO, Baban A, Al-Alak MM, Othman AY, Othman Y, Ismet N, Shawani O, Murthy S, Aljadiry M. The prevalence and correlates of DSM-IV disorders in the Iraq Mental Health Survey (IMHS). World psychiatry. 2009 ;8:97.
7. Sadik S, Bradley M, Al-Hasoon S, Jenkins R. Public perception of mental health in Iraq. International journal of mental health systems. 2010;4:1-1.
8. Lahey BB. Why are children who exhibit psychopathology at high risk for psychopathology and dysfunction in adulthood?. Jama Psychiatry. 2015;72:865-66.
9. WISH Report 2016, WISH Autism Forum 2016, Autism: A Global Framework for Action, Doha, Qatar 2017.
10. Al-Obaidi A, Budosan B, Jeffrey L. Child and adolescent mental health in Iraq: current situation and scope for promotion of child and adolescent mental health policy. Intervention. 2010;8:40-51.
11. Panter-Brick C, Eggerman M, Gonzalez V, Safdar S. Violence, suffering, and mental health in Afghanistan: a school-based survey. The Lancet. 2009;374:807-16.
12. National Mental Health Commission. Monitoring mental health and suicide prevention reform: national report 2019.
13. Association, American Psychiatric. Diagnostic and statistical manual of mental disorders. American Psychiatric Publishing; 2013.
14. Al-Shomari T, Al-Saratwai Z. The Saudi and Kuwaiti standards of childhood autism rating scale (CARS): Standardization and validation. Journal of special education academy. 2002;1:1-39.
15. Brief Report: Prevalence of Autistic Spectrum Disordersin the Sultanate of OmanYahya M. Al-Farsi • Marwan M. Al-Sharbati •Omar A. Al-Farsi • Mohammed S. Al-Shafaee •Daniel R. Brooks Mostafa I. Waly.J Autism Dev DisordDOI 10.1007/s10803-010-1094-8 …Article *in* Journal of Autism and Developmental Disorders · June 2011).
16. Merikangas KR, Nakamura EF, Kessler RC. Epidemiology of mental disorders in children and adolescents. Dialogues in clinical neuroscience. 2009;11:7.
17. Hussein H, Shaker N, El-Sheikh M, Ramy HA. Pathways to child mental health services among patients in an urban clinical setting in Egypt. Psychiatric Services. 2012;63:1225-30.