

# Assessment of Behavioral disorders of children with Autism

## تقييم الاضطرابات السلوكية لدى اطفال التوحد

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### الخلاصة:

**الخلفية:** اضطراب التوحد هو اضطراب عصبي يسبب قصورا كبيرا في سلوك الأطفال ويشمل: فرط الحركة، و ضعف الانتباه، والتهور، والعدائية، وإيذاء الذات، ونوبات الغضب، وأيضا اضطرابات الطعام والنوم. هناك تزايدا في معدلات حدوث التوحد يصل إلى ١٠-١٧% سنويا. و يعد اضطراب التوحد هو الإعاقة الإنمائية الأكثر تزايدا في العالم خلال العقود الماضية.

**الهدف:** تهدف الدراسة إلى تقييم سلوك أطفال التوحد.

**المنهجية:** أجريت دراسة وصفية ترابطية للمدة من الخامس عشر لشهر حزيران ولغاية الخامس عشر لشهر آب سنة ٢٠١٣ على أطفال التوحد في مدينة بغداد. تم اختيار عينة عمدية غير احتمالية من ٧٨ طفلا توحديا يتلقون العناية في المراكز الخاصة برعاية أطفال التوحد للمشاركة في هذه الدراسة. تم استخدام استبانة لغرض جمع العينة. لتقييم سلوك أطفال التوحد تم اعتماد (المقياس الهندي لتقييم التوحد).

**النتائج:** أظهرت نتائج الدراسة ان معظم الأطفال هم من الذكور الذين تتراوح أعمارهم بين ٤-١٢ سنة ومتوسط أعمارهم 5.78. وان أعلى نسبة منهم كان لديهم قصورا في التفاعل الاجتماعي، ومشكلات نمط السلوك، وضعف في الاستجابات الحسية والاستجابات العاطفية بمستوى متوسط. و أن أعلى نسبة منهم كان لديهم صعوبات الاتصال وضعف في الوظائف العقلية والإدراك بمستوى خفيف. نصف الأطفال كان لديهم مستوى متوسط من الاضطرابات السلوكية لكل المحاور.

**الاستنتاجات:** كل الأطفال المصابين باضطراب التوحد لديهم نفس الاضطرابات السلوكية بمستويات مختلفة الشدة ليس هناك علاقة ارتباطية بين شدة السلوك التوحدي و عمر و جنس الطفل.

**التوصيات:** توصي الدراسة بضرورة اعتماد وزارة الصحة و وزارة العمل و الشؤون الاجتماعية خطة لتقديم الدعم ومستوى جيد من الخدمات لأطفال التوحد لمساعدتهم في التغلب على صعوبات هذا الاضطراب. و أيضا هؤلاء الأطفال بحاجة إلى برامج تأهيلية و سلوكية خاصة تتعامل مع المشكلات السلوكية لديهم.

### Abstract:

**Background:** Autistic disorder is a neurological disorder that causes a broad area of behavior impairments in children, including: hyperactivity, short attention span, impulsivity, aggressiveness, self – injurious behavior, tempers tantrum and abnormalities of eating or sleeping may be found. There is an increased rates of autism reached to 10-17% per year. It is the fastest-growing serious developmental disability in the worldwide over the past decades.

**Objective:** The study aims to assess the autistic child behavior.

**Methodology:** A descriptive correlational study was conducted from Jun 15<sup>th</sup> 2013 to October 15<sup>th</sup> 2013 on children with autism in Baghdad city. Purposive (non-probability) samples of 78 autistic children who are clients and receive care in the private specialization centers for autism were selected to participate in the current study. The study uses a parent-completed questionnaire for data collection. The behavior of autistic child was assessed using the Indian Scale for Assessment of Autism (ISAA).

**Results:** The findings indicated that most children were males of 4-12 years old with mean 5.78 years. The highest percentage of children reported a moderate level of the impairment in social interaction, behavioral pattern problems, sensory responses abnormalities and lack of emotional responses. And the highest percentage of children reported a mild level in communication difficulties and delay in cognition and perceptual functioning. Half of children reported a moderate level of the total score of behavioral problems for all domains.

**Conclusions:** All autistic children displayed the same behavioral disorders with different levels of severity. There is no significant relationship between the severity of autistic behavior and the child's age and the child's sex.

**Recommendations:** The study recommends that Ministry of Health and the Ministry of Labor and Social Affairs policy should give the autistic children support and high quality of services to help them to coping with this disorder. Those children need for special rehabilitative and behavioral programs dealing with their behavioral problems.

**Keyword: behavior problems, children, autism.**

## **INTRODUCTION:**

Autism is a neurological or brain – based developmental disorder that particularly manifests in problems in cognition, communication and interaction. <sup>(1)</sup> In social interaction, the child may have problems making eye contact, fail to develop appropriate peer relationships, and fail to spontaneously seek out shared enjoyment with other people. In communication, the child may have a delay in developing language or absence of speech, use language in a stereotyped, repetitive or idiosyncratic fashion; show deficits in spontaneous imaginative play, or have a restricted, repetitive of interests or behavior. <sup>(2)</sup>

A variety of behavioral Symptoms may present, including: hyperactivity, short attention span, impulsivity, aggressiveness, self – injurious behavior, tempers tantrum and abnormalities of eating or sleeping may be found. <sup>(3)</sup> The diagnostic and statistical manual of mental disorders, fourth edition (DSM.IV-TR), is classified autistic disorder among the pervasive developmental disorders (PPD). <sup>(4)</sup>

The centers for disease control and prevention (CDC) reported that the prevalence of autism spectrum disorder (ASD) is about 1 in 88 children. <sup>(5)</sup> It occurs four to five times more often in boys than in girls. Onset of the disorder occurs before age 3, and in most cases it runs a chronic course, with Symptoms persisting into adulthood. <sup>(6)</sup>

ASDs are seen in less than 1% of the population and are present in equal prevalence among all racial and ethnic groups. <sup>(7)</sup>

Autism spectrum disorder (ASD) is significantly on the rise worldwide from 1/10000 in the early 90s to 1/150 in 2009 as estimated by the National survey of children's health. <sup>(8)</sup> There is currently increasing interest in autism and autism research, this interest has been the result of awareness of the impact of this condition on the lives of not only the individuals with autism but also their families / caregivers. Now we are witnessing a global movement to bring autism to the forefront and shed a light on it to find ways to reduce their burden on those directly affected and on the society at large. <sup>(9)</sup> The rise in diagnoses of autism impacts us all, as we search for greater awareness and understanding of the condition's complexities; and to provide researches effective strategies and accommodations in order to support the affected individuals and their families. <sup>(10)</sup>

### **The objectives of the study:**

- 1- To assess the autistic children's behavior.
- 2- To find out the relationship between the behavior problems and demographic characteristics of children such as age and sex.

## **METHODOLOGY:**

A descriptive study was conducted from July 15<sup>th</sup> 2013 to October 15<sup>th</sup> 2013 on children with autism in Baghdad city. Purposive (non-probability) samples of 78 autistic children who are clients and receive care in the private specialization centers for autism were selected to participate in the current study. The study uses a questionnaire for data collection. The behavior of autistic child was assessed using the Indian Scale for Assessment of Autism (ISAA). The questionnaire comprised two parts: **a-** The socio-demographic characteristics of the child such as :age, sex, onset of the disorder, age of diagnosis, date of joining a center for autism care, sleep problems, and average of sleep hours.

**b-** Assessment of the behavioral problems of autistic child (33 items)asked for both parents together, and it divided into 6 domains which include: social interaction

domain (7 items); emotional responses domain (5 items); using of communication means domain contains (7 items); behavioral patterns domain(8 items); sensory domain (4 items), and cognitive and perception domain (2 items).

The response to these items is (never, sometimes, always), the rating and scoring for these items are never=1, sometimes=2, and always=3). The severity of autistic behavior is measured by using the cut off point for each domain of the assessment. In order to test the validity of the questionnaire, it was presented to 14 experts in different fields to make the questionnaire more valid. Before starting the work, a pilot study was carried out from June 15<sup>th</sup> 2013 to June 30<sup>th</sup> 2013, on 20 parents of 20 autistic children. For the purpose of measuring the reliability of the questionnaire, two methods are used: 1-Split-halve technique: it has been used to estimate homogeneity,in this approach, the items on a scale was divided into two groups; odd items and even items, and scored independently, and then using the Sperman-Brown prophecy formula ( $r^1$ )= (0.753), the normal range of values is between 0.00 and 1.00.2- Cronbach' alpha (coefficient alpha): the normal range of values is between .00 and 1.00. Higher values reflect a higher internal consistency; the Cronbach' alpha of the current study is  $r=0.822$ . The data had been collected from the following specialization centers for autism care as shown in table (A) which shows the Distribution of the sample according to the autism center:

**Table 1: Distribution of the sample according to the specialization centers for autism care**

Center name	No.of children	%
AL_ Nahrain specialization center for autism care	15	19.2%
AL_ Noor specialization center for autism and special needs care	6	7.6%
AL_ Rahman specialization center for autism care	18	23%
AL_ Nihal specialization center for autism and speech difficulties care	9	11.5%
Rami center for autistic and slow learners care	8	10.2%
The Association Brotherly Center for autism and special needs care	22	28.5%
<b>total</b>	<b>78</b>	<b>100%</b>

The data has been analyzed by using the descriptive statistics (Frequencies, Percentages, Means, Standard Deviations (SD)) and the inferential statistics (Contingency table between the levels of severity of autistic behavior and the domains of autistic child's behavior and Chi-square to find out the relationships between the severity of autistic behavior and age and sex of child).

## RESULTS:

**Table 2: Distribution of autistic children according to their demographic characteristics**

Demographics		F	%
Age	4-6	60	76.9
	7-9	10	12.8
	10-12	8	10.3
	Total	78	100%
Sex	Male	61	78.2
	Female	17	21.8
	Total	78	100%
The onset of symptoms	In the first year	17	21.8
	In the second year	35	44.9
	In the third year and more	26	33.3
	Total	78	100%
Age of diagnosis	Less than 3 years	30	38.5
	3 years and more	48	61.5
	Total	78	100%
Period of entering a child in a center for autism care	Less than one year	22	28.2
	One year and more	56	71.8
	Total	78	100%
Presence of sleep problems	Yes	30	38.5
	No	48	61.5
The average of sleep hours per day	Total	78	100%
	4-6 hours	9	11.5
	7-9 hours	41	52.6
	10-12 hours	25	32.1
	13 hours and more	3	3.8
	Total	78	100%

The results indicate that the age of children ranged from 4 to 12 years with mean = 5.78, and SD= 2.254, the highest percentage is located in the age group 4-6 years, which is 76.9%. And most of children were males (78.2 %). The symptoms of autism were beginning in the second year of age in (44.9%) of children. 71.8% of children were entered before one year or more. More than half of children (61.5%) have nosleep problem and the average of sleep hours between 7-9 hours in 52.6% of them.

**Table 3: The severity of autistic child's behavior according to each domain of the autism behavior assessment**

The autistic child's behavior	Severity of autistic behavior						Total	
	Mild		Moderate		Sever		f	%
	f	%	f	%	f	%		
Impairment in Social interaction	30	38.5%	30	38.5%	18	23.0%	78	100%
Lack of emotional responses	23	29.5%	32	41.0%	23	29.5%	78	100%
The communication difficulties	30	38.5%	22	28.2%	26	33.3%	78	100%
The behavioral pattern problems	23	29.5%	32	41.0%	23	29.5%	78	100%
The sensory responses abnormalities	28	35.9%	31	39.7%	19	24.4%	78	100%
Delay in cognitive and perceptual functioning	41	52.6%	15	19.2%	21	26.9%	78	100%
Total score of autistic behavior level	19	24.4%	39	50.0	20	25.6	78	100%

The results show that 38.5% of children have a moderate level of impairment in social interaction and regards to lack of emotional responses domain the highest percentage (41%) of children were have a moderate level. 38.5% of children were have a mild level of communication difficulties.

As regards to the behavioral pattern problems domain, 41% of children were at moderate level. And 39.7% of them were also at moderate level of the sensory responses abnormalities. Concerning the cognitive and perceptual domain, 52.6% of children were at mild level.

The table also indicated that the total level of the severity of autistic behavior for all domains was 50% of children were having a moderate level.

**Table 4: The relationship between the severity of autistic behavior and the child's age**

Child's age	Severity of autistic behavior						Total		Pearson chi-square value	Linear by linear association	Sig.
	Mild		Moderate		Sever		f	%			
	f	%	f	%	f	%					
4-6 years	16	20.5%	30	38.5%	14	17.9%	60	76.9%	3.221	1.903	NS
7-9 years	2	2.6%	6	7.7%	2	2.6%	10	12.8%			
10-12 years	1	1.3%	3	3.8%	4	5.1%	8	10.3%			
Total	19	24.4%	39	50.0%	20	25.6%	78	100%			

df= 4, p value  $\leq 0.05$ , Sig= significance (2-sided), NS= not significant.

Table (4) indicated that there is no relationship between the severity of autistic behavior and child's age atp value  $\leq 0.05$  and df=4.

**Table 5: The relationship between the severity of autistic behavior and the child's gender**

Child'ssex	Severity of autistic behavior						Total		Pearson chi-square value	Linear by linear association	Sig.
	Mild		Moderate		Sever		f	%			
	f	%	f	%	f	%					
Male	14	17.9%	31	39.7%	16	20.5%	61	78.2%			

Female	5	6.4%	8	10.3%	4	5.1	17	21.8	0.303	0.220	NS
Total	19	24.4%	39	50.0%	20	25.6%	78	100%			

df= 2, p value  $\leq 0.05$ , Sig= significance (2-sided), NS= not significant.

Table (5) indicated that there is no relationship between the severity of autistic behavior and the child's gender at p value  $\leq 0.05$  and df=2.

## DISCUSSION:

### 1. Discussion of the demographic characteristics of the autistic children:

The demographic characteristic of the autistic children in table (2) shows that the age of children ranged from 4 to 12 years with mean = 5.78. This finding was slightly different than that reported by Sipos et al. (2012) who found that the children's age ranging between 2 and 14 years, with a mean = 6.46. The differences may be due to the selection criteria of the current study which consists of children aged 4-12 years old<sup>(10)</sup>

In current study, 78.2% of children were males and 21.8% were females. This gender distribution is supported by Sipos et al. (2012) who found that their sample included 73.7% boys, and 26.3% girls<sup>(10)</sup>. The result of the current study was congruent with the previous studies and the CDC (2013) which reported that that autism is five times more likely to occur in boys than in girls<sup>(11)</sup>. The onset of symptoms of the present sample shows that the highest percentages (44.9%) of children were beginning the symptoms at second year of age. The APA (2014) reported that autism appearing within the first three years of life<sup>(12)</sup>. Table (2) shows that 61.5% of children were diagnosed with autism at age 3 years and more. This result was congruent with Karst and Van Hecke (2012) who reported that the parents are informed of an autistic disorder diagnosis for their child often comes much later, when the child is at 3 years of age<sup>(13)</sup>.

71.8% of children in the present study were entered a center for autism care before one year and more from the present time. This result was congruent with Davis and Carter (2008) who found in their study which aimed to assess the parenting stress of toddlers with autism, that children began receiving specialized early interventions services for ASD at age 24.6 months<sup>(14)</sup>. The results of this study revealed that 61.5% of children have no sleep problem and more than halve of children (52.6%) have a sleep average between 7-9 hours per day. This finding was incongruent with Dominick (2007) who found that over two-third of children with autism had experienced atypical patterns of sleep in his study. This result from researchers' point of view may be due to those children are diagnosed with autism and receive antipsychotic medication which cause sedation and sleeping performance<sup>(15)</sup>.

### 2. Discussion of the severity of behavior that the autistic child displays:

Table (3) shows that 38.5% of children reported a moderate level in the impairment of social interaction. As regards to lack of emotional responses, 41% of children reported a moderate level. 38.5% of children reported a mild level of communication difficulties. The table (3) also shows that forty one percent of children have a moderate level with the problems of behavioral pattern. 39.7% of children recorded a moderate level in the sensory responses abnormalities. 50% of children recorded a moderate level of the total level of behavioral problems for all domains, and the other fifty percent distributed between mild (24.4%) and severe (25.6%) levels. Consistently, the APA (2013) reported that the symptoms of people with ASD will

fall on a continuum, with some individuals showing mild symptoms and others having much more severe symptoms<sup>(16)</sup>.

### **3. Discussion of the severity of behavior that the autistic child displays and his demographic characteristics:**

The results of this study indicated that there is no relationship between the severity of autistic behavior and child's age at  $p \text{ value} \leq 0.05$  and  $df = 4$  as shown in table (4). And there is no relationship between the severity of autistic behavior and the child's gender at  $p \text{ value} \leq 0.05$  and  $df = 2$  as shown in table (5). The result of the present study was consistent with Venker et al (2014) who reported that age and gender had no bearing on the severity of autistic symptoms.<sup>(17)</sup>

## **CONCLUSIONS:**

Most children were males; most of them were with onset beginning at second year of age. More than half of them were diagnosed with autism at age 3 years and more. More than half of children have no sleep problems. All autistic children displayed the same behavior symptoms with different levels of severity. Child's age and the child's gender have no significant effect on the severity of autistic behavior.

## **RECOMMENDATIONS:**

1. The Ministry of Health and the Ministry of Labor and Social Affairs policy should give the autistic children support and high quality of services to help them to coping with this disorder.
2. Special rehabilitative and behavioral programs dealing with the behavioral problems of autistic children are needed to be applicable by the specialization centers for autism care.

## **REFERENCES:**

1. Marohn, S.: The Natural medicine guide to autism: what is autism?, Hampton Roads Publishing Company Inc., 2002. Available at: [www.hrpub.com](http://www.hrpub.com).
2. Kneisl, CR. and Trigoboff, E.: Contemporary Psychiatric Mental Health Nursing, 2<sup>nd</sup> edition, **Pearson Education Inc.**, 2009, pp.693-694.
3. Fortinash, KM. and Holoday-Worret, P.A.: Psychiatric Mental Health Nursing, 2<sup>nd</sup> edition, Mosby Inc., 2000, pp. 419-420.
4. Browndyke, JN.: Autistic behavior: etiology and evaluation, Neuropsychology Central, 2002.
5. Centers for Disease Control and Prevention (CDC): Screening and Diagnosis, Autism Spectrum Disorders, 2013, last update: December 26, 2013. Available at: [www.cdc.gov](http://www.cdc.gov).
6. Townsend, MC.: Essential of Psychiatric Mental Health Nursing: concepts of care in evidence-based practice, F.A. Davis Company, 2008, pp.530-531.
7. Kheir, N., Ghoneim, O., Sandridge, AL., Al-Ismail, M., Hayder, S., and Al-Rawi, F.: Quality of life of caregivers of children with autism in Qatar, **Autism Journal**, Vol. 16, No. 3, 2012, Pp. 293 -298.
8. Marcdante, KJ., Kliengman, RM,; Jenson, HB. and Behrman, RE.: Nelson Essentials of Pediatrics, 6<sup>th</sup> edition, Elsevier Saunders Inc., Canada, 2011, p. 77.
9. Koptz, PB. and Endowed, ED.: Autism worldwide: prevalence, acceptance, action, **Journal of social Sciences**, Vol. 8, No. 2, PP. 19 -201.

10. Sipos, R., Predescu, E., Muresan, G. and Iftene, F.: The evaluation of family quality of life of children with autism spectrum disorder and attention deficit hyperactive disorder, **Applied Medical Informatics**, Vol. 30, No. 1, 2012, pp. 1-8.
11. Centers for Disease Control and Prevention (CDC): Data & Statistics, Autism Spectrum Disorders, 2013, last update: June 27, 2013. Available at: [www.cdc.gov](http://www.cdc.gov).
12. American Psychiatric Association (APA): Autism, 2014. Available at: [www.psychiatry.org](http://www.psychiatry.org).
13. Karst, SK. and Van Hecke, AV.: Parents and family impact of autism spectrum disorder: A review and proposed model for intervention evaluation, **Clin Child FamPsychol Rev**, 2012, Vol. 15, No: 3, pp. 247- 277.
14. Davis, N. and Carter, A.: Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: association with child characteristics, **J Autism Dev Disord**, Vol. 38, No. 2, 2008, pp. 1278-1291. Available at: <http://link.springer.com>.
15. Dominick, K., Davis, N., Lainhart, J., Flusberg, H. and Folstein, S.: Atypical behaviors in children with autism and children with history of language impairment, **Research in Developmental Disabilities**, 2007, Vol. 28, pp. 145-162. Available at: [www.sciencedirect.com](http://www.sciencedirect.com).
16. American Psychiatric Association (APA): Autism Spectrum Disorder, 2013. Available at: [www.psychiatry.org](http://www.psychiatry.org).
17. Venker, CE., Ray-subramanian, CE., Bolt, DM. and Weismers, S.: Trajectories of autism severity in early childhood, **J Autism Dev Disord**, Vol. 44, No. 3, 2014, pp. 546-563.