



ISSN: 1817-6798 (Print)

Journal of Tikrit University for Humanities

available online at: www.jtuh.org/
JTUH
 مجلة جامعة تكريت للعلوم الانسانية
 Journal of Tikrit University for Humanities
Arazo Adil Jassim

/ Education College / Garmian University

* Corresponding author: E-mail :

arazo.adil@garmian.edu.krd**Keywords:**

Patient's family
 behavioral characteristics
 Autism
 Autism Center
 Sulaimani Governorate.

ARTICLE INFO**Article history:**

Received 4 Jan 2016
 Received in revised form 17 Jan 2016
 Accepted 21 Feb 2016
 Final Proofreading 28 Nov 2023
 Available online 30 Nov 2023

E-mail t-jtuh@tu.edu.iq

©THIS IS AN OPEN ACCESS ARTICLE UNDER
 THE CC BY LICENSE

<http://creativecommons.org/licenses/by/4.0/>

Journal of Tikrit University for Humanities

Behavioral Characteristics of Children with Autistic Disorders

ABSTRACT

This study aims to describe the Behavioral characteristics of children with Autistic disorders, at the Autism Center in Sulaimani Governorate. This study investigates the behavioral traits of children who have been diagnosed with autism at the Sulaimani Autism Center in the Sulaimani governorate. The research period spans from November 2013 to May 2014. The findings of the study revealed that children exhibit difficulties in social interaction, with the highest percentage of responses being observed in the item "Marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction," accounting for 88%. This was closely followed by the item "Stereotyped and repetitive use of language or idiosyncratic language," which accounted for 82% of the responses. The prevalence of communication impairments in children is greatest in the category of "Delay in, or complete absence of, the development of spoken language (without any effort to utilize alternative forms of communication such as gestures or mime)," accounting for 80% of cases. In relation to the restricted repetitive and stereotyped patterns of behavior, interests, and activities, it has been observed that children exhibit the highest frequency towards the item "Preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus," accounting for 62% of cases. Furthermore, the item "Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting or complex whole-body movements)" has the lowest frequency.

DOI: <http://doi.org/10.25130/jtuh.30.11.2.2023.25>

الخصائص السلوكية لدى الأطفال الذين يعانون من اضطرابات التوحد، مركز للتوحد في محافظة السليمانية

د. ارزو عادل جاسم / كلية التربية / جامعة الكرميان.

الخلاصة:

الأهداف: تهدف هذه الدراسة إلى وصف الخصائص السلوكية في الأطفال الذين يعانون من اضطرابات التوحد في مركز التوحد في محافظة السليمانية.

المنهجية: تصميم نوعي، دراسة وصفية مع وجود احتمال عدم عينة هادفة، 50 الأطفال الذين يعانون من اضطرابات التوحد في مركز التوحد في محافظة السليمانية، نفذت دراسة لتقييم سمة سلوكية الأطفال بالتوحد في مركز السليمانية للتوحد في محافظة السليمانية للفترة من نوفمبر 2013 إلى مايو

2014. وقد أجريت هذه الدراسة في مركز السليمانية للتوحد، محافظة السليمانية بهدف دراسة السمة السلوكية للأطفال بالتوحد. وقد تم وضع استبيان لهذا الغرض، تم تحليل البيانات من خلال نسبة المؤية والوسط.

النتائج و المناقشات: أشارت الدراسة إلى أن الأطفال لديهم انخفاض في التفاعل الاجتماعي، تحدث أعلى الردود في بند "انخفاض ملحوظ في استخدام السلوكيات غير اللفظية متعددة مثل العين إلى العين البصر، وتعبيرات الوجه، المواقف الجسم، والإيماءات لتنظيم التفاعل الاجتماعي" يمثل 88%، تليها بند "النمطية واستخدام المتكرر للغة أو لغة الفقهية"، وهو ما يمثل 82%، وضعف في الاتصالات، والأطفال لديهم أعلى تردد إلى البند "التأخير في، أو انعدام تام لل، وتطوير اللغة المنطوقة (بدون محاولة لاستخدام وسائل بديلة للاتصال مثل لفظة أو التمثيل الصامت) (يمثل 80% . فيما لأنماط يقتصر التكرار والنمطية للسلوك، والمصالح، والأنشطة، والأطفال لديهم أعلى تردد إلى البند "الانشغال مع واحد أو أكثر النمطية والمقيدة أنماط الفائدة التي هو غير طبيعي سواء في شدة أو التركيز" التي تمثل 62% . وأقل وتيرة واحدة في بند "السلوكيات الحركية النمطية والمتكررة) مثل اليد أو الإصبع ترفرف أو التواء أو حركات كامل الجسم المعقدة . **توصية:** توفير وسائل والتعليم لمساعدة المرضى الذين يعانون من اضطراب التوحد للوصول إلى المستوى الأمثل من الأداء .

كلمات المفتاحية: عائلة المريض، الخاصية السلوكية، التوحد، مركز للتوحد، محافظة السليمانية

Introduction:

Early signs of impairments in socialization and communication and the presence of repetitive behaviors define autism. The spectrum includes children and adults across the range of severity and intellectual ability, from severely impaired to high-functioning (termed Asperger syndrome). Approximately a third of children with autism appear to lose skills in their second year, but the significance, in terms of cause and life course, is unclear [1].

Autism is a developmental disorder that was first described by Leo Kanner in 1943, in a classic article that included case studies of 11 children. Since that time, the diagnostic criteria have evolved based on continued observations and research, resulting in the current criteria in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition or DSM-IV* [2] and the *International Classification of Diseases or ICD-10* [3]. Now, *autistic disorder* is defined in terms of qualitative impairments in social interaction and communication, and restricted, repetitive, and stereotyped patterns of behaviors, interests, and activities, with impairments in one of these areas before the age of 3 years [4]. Major characteristics

Many autistic infants are different from birth. Two common characteristics they may exhibit include arching their back away from their caregiver to avoid physical contact and failing to anticipate being picked up (i.e., becoming limp). As infants, they are often described as either passive or overly agitated babies. A passive baby refers to one who is quiet most of the time making little, if any, demands on his/her parents. An overly agitated baby refers to an infant who cries a great deal, sometimes non-stop, during his/her waking hours. During infancy, many begin to rock and/or bang their head against the crib; but this is not always the case [5].

Types of autism are:

- *Autistic Disorder*: also known as “Classic Autism,” “Kanner Autism,” or “Childhood Autism” Characterized by difficulties with language, social and leisure activities/ imaginative play.
- *Asperger’s Syndrome*: sometimes referred to as “High-functioning”. No problem in communication or cognitive development.
- *Pervasive Development Disorder-Not Otherwise Specified (PDD-NOS)*-sub threshold diagnosis. Also refers to “ atypical autism” (later age of onset or atypical symptoms). [1].

Autism is a “spectrum” disorder because it affects no two people in the same way. [8].

Subgroups and Related Disorders are:

Asperger Syndrome, Fragile X Syndrome, Landau-Kleffner Syndrome, Rett Syndrome, and Williams Syndrome. Concrete and literal thinking, obsession with certain topics, excellent memories, and being ‘eccentric’ characterize Asperger Syndrome. These individuals are considered high-functioning and are capable of holding a job and living independently [7] [8].

Fragile X Syndrome is a form of mental retardation in which the long arm of the X chromosome is constricted. Approximately 15% of people with Fragile X Syndrome exhibit autistic behaviors. These behaviors include delay in speech/language, hyperactivity, poor eye contact, and hand-flapping. The majority of these individuals function at a mild to moderate level. As they grow older, their unique physical facial features may become more prominent (e.g., elongated faces and ears), and they may develop heart problems.

People with Landau-Kleffner Syndrome also exhibit many autistic behaviors, such as social withdrawal, insistence on sameness, and language problems. These individuals are often thought of as having 'regressive' autism because they appear to be normal until sometime between ages 3 and 7. They often have good language skills in early childhood but gradually lose their ability to talk. They also have abnormal brain wave patterns which can be diagnosed by analyzing their EEG pattern during an extended sleep period [5].

Rett Syndrome is a degenerative disorder that affects mostly females and usually develops between 1/2 to 1 1/2 years of age. Some of their characteristic behaviors include loss of speech, repetitive hand-wringing, body rocking, and social withdrawal. Those individuals suffering from this disorder may be severely to profoundly mentally retard [8].

Williams Syndrome is characterized by several autistic behaviors including developmental and language delays, sound sensitivity, attention deficits, and social problems. In contrast to many autistic individuals, those with Williams Syndrome are quite sociable and have heart problems.

Childhood disintegrative disorder is a very rare disorder, with reported prevalence rates of 0.6 per 100,000 [5]. This disorder involves a period of normal development in the first 2 years of life, followed by a regression in several skill areas before the age of 4 years, resulting in autistic Symptoms. The other two ASD diagnoses are Asperger's Disorder and pervasive developmental disorder – not otherwise specified (PDD-NOS). Asperger's disorder, like Autistic disorder, includes qualitative impairments in reciprocal social interactions, and restricted, repetitive, and stereotyped patterns of behaviors, interests, and activities. However, unlike Autistic disorder, it does not require qualitative impairments in communication [7].

Causes:

The Causes of autism although there is no known unique cause of autism, there is growing evidence that autism can be caused by a variety of problems [11]. There is some indication of a genetic influence on autism. For example, there is a greater likelihood that two monozygotic twins (i.e., identical twins) will have autism than two dizygotic twins (i.e., fraternal twins). In the case of monozygotic twins, there is a 100% overlap in genes; whereas in dizygotic twins, there is a 50% overlap in genes, the same overlap as in non-twin siblings [9]. Currently, a great deal of research has focused on locating the 'autism gene;' however, many researchers speculate that three to five genes will likely be associated with autism. There is also evidence that the genetic

link to autism may be a weakened or compromised immune system. Other research has shown that depression and/or dyslexia are quite common in one or both sides of the family when autism is present.

There is also evidence that a virus can cause autism. There is an increased risk of having an autistic child after exposure to rubella during the first trimester of the pregnancy. Cytomegalovirus has also been associated with autism. Additionally, there is also a growing concern that viruses associated with vaccinations, such as the measles component of the MMR vaccine and the pertussis component of the DPT shot, may cause autism [9], [10].

There is growing concern that toxins and pollution in the environment can also lead to autism. There is a high prevalence of autism in the small town of Leominster, Massachusetts, where a factory manufacturing sunglasses was once located. Interestingly, the highest proportion of autism cases were found in the homes downwind from the factory smokestacks. Recently, a large proportion of autistic children were identified in Brick Township, New Jersey. Several agencies are now attempting to uncover the reason(s) for the high proportion of autism in this community [11].

Physical abnormalities:

Researchers have located several brain abnormalities in individuals with autism; however, the reasons for these abnormalities are not known nor is the influence they have on behavior. These abnormalities can be classified into two types--dysfunctions in the neural structure of the brain and abnormal biochemistry of the brain. It will be important for future researchers to examine the relationship between these two types of abnormalities.

Concerning brain structure, Drs. Bauman and Kemper examined the post-mortem brains of several autistic individuals and located two areas in the limbic system that are underdeveloped--the amygdala and the hippocampus. These two areas are responsible for emotions, aggression, sensory input, and learning. These researchers also found a deficiency of Purkinje cells in the cerebellum [10]. Using Magnetic Resonance Imaging, Dr. Courchesne has found two areas in the cerebellum, vermis lobules VI and VII, which are significantly smaller than normal in autistic individuals. Interestingly, there are some autistic individuals whose vermal lobules VI and VII are larger than normal. One or both of these areas of the cerebellum are believed to be responsible for attention [11].

Concerning biochemistry, many autistic individuals have elevated levels of serotonin in their blood and cerebral spinal fluid, whereas others have

relatively low levels of serotonin. It should be mentioned that other disorders, such as Down Syndrome, attention-deficit/hyperactivity disorder, and unipolar depression are also associated with abnormal levels of serotonin. There is also evidence that some autistic individuals have elevated levels of beta-endorphins, an endogenous opiate-like substance in the body. It is felt that those individuals who have an increased pain tolerance may likely be due to elevated levels of beta-endorphins [11].

A dysfunctional immune system has also been associated with autism. It is thought that a viral infection or an environmental toxin may be responsible for damaging the immune system. As mentioned above, there is also evidence of a genetic association with a compromised immune system. Researchers have found that many autistic individuals have a decreased number of helper T-cells which help the immune system fight infection [10].

There is growing evidence that the gut or intestinal tract of autistic children is impaired. Researchers have documented yeast overgrowths (candida albicans), low levels of phenyl sulfur transferase, and measles virus in their intestinal tract.

Sensory impairments:

Many autistic individuals seem to have an impairment in one or more of their senses. This impairment can involve the auditory, visual, tactile, taste, vestibular, olfactory (smell), and proprioceptive senses. These senses may be hypersensitive, hypersensitive, or may result in the person experiencing interference such as in the case of tinnitus, (a persistent ringing or buzzing in the ears). As a result, it may be difficult for individuals with autism to process incoming sensory information properly [12].

"Theory of mind" refers to one's inability to realize that other people have their unique point of view about the world. Many autistic individuals do not realize that others may have different thoughts, plans, and perspectives than their own. For example, a child may be asked to show a photograph of an animal to another child. Rather than turning the picture around to face the other child, the autistic child may, instead, show the back of the photograph. In this example, the autistic child can view the picture but does not realize that the other child has a different perspective or point of view [13].

About 10% of autistic individuals have savant skills. This refers to an ability that is considered remarkable by most standards. These skills are often spatial in nature, such as special talents in music and art. Another common savant skill is mathematical ability in which some autistic individuals can

multiply large numbers in their head within a short period; others can determine the day of the week when given a specific date in history or memorize complete airline schedules.

Many autistic individuals also have a narrow or focused attention span; this has been termed 'stimulus over selectivity.' Their attention is focused on only one, often irrelevant, aspect of an object. For example, they may focus on the color of a utensil, and ignore other aspects such as the shape. In this case, it may be difficult for a child to discriminate between a fork and a spoon if he/she attends only to the color. Since attention is the first stage in processing information, failure to attend to the relevant aspects of an object or person may limit one's ability to learn about objects and people in one's environment [12].

Interventions:

Over the years, families have tried various types of traditional and non-traditional treatments to reduce autistic behaviors and to increase appropriate behaviors. Although some individuals are given medications to improve general well-being, there is no primary drug that is consistently effective in treating symptoms of autism. The most widely prescribed medication for autistic children is Ritalin, (a stimulant used to treat Attention Deficit/Hyperactivity Disorder). However, there are no double-blind controlled studies to demonstrate its effectiveness for those with autism [14], [15], [16].

The two treatments that have received the most empirical support are Applied Behavior Analysis (ABA; behavior modification) and the use of vitamin B6 with magnesium supplements. Behavior modification involves a variety of strategies, (e.g., positive reinforcement, time-out), to increase appropriate behaviors, such as communication and social behavior, and to decrease inappropriate behaviors, such as self-stimulatory and self-injurious behavior.

Vitamin B6 taken with magnesium has been shown to increase general well-being, awareness, and attention in approximately 45% of autistic children. There are also several recent reports about the benefits of another nutritional supplement, Dimethylglycine (DMG). DMG also seems to help the person's general well-being, and there are many anecdotal reports of it enhancing communication skills [17]; [18]; [19].

Some people with autism have excessive amounts of a type of yeast called 'candida albicans' in their intestinal tract. It is thought that high levels of candida albicans may be a contributing factor to many of their behavioral

problems. One scenario is that when a child develops a middle ear infection, the antibiotics that help fight the infection may destroy microbes that regulate the amount of yeast in the intestinal tract. As a result, the yeast grows rapidly and releases toxins in the blood; and these toxins may influence the functioning of the brain. Excessive candida albicans can be treated with rather mild medications such as Nystatin age [23]; [15].

Food intolerances and food sensitivities are beginning to receive much attention as possible contributors to autistic behaviors. Many families have observed rather dramatic changes after removing certain food items from their children's diets. Researchers have recently detected the presence of abnormal peptides in the urine of autistic individuals [20]. It is thought that these peptides may be due to the body's inability to break down certain proteins into amino acids; these proteins are gluten (e.g., wheat, barley, and oats) and casein (found in human and cow's milk). Many parents have removed these substances from their children's diets and have, in many cases, observed dramatic, positive changes in health and behavior [17]; [18]; [19].

As mentioned earlier, many autistic individuals have sensory impairments. Sensory integration techniques are often used to treat dysfunctional tactile, vestibular, and proprioceptive senses. Some of the techniques involve swinging a child on a swing in various ways to help normalize the vestibular sense and rubbing different textures on the skin to normalize the tactile sense. In addition, an autistic woman, Dr. Temple Grandin, developed a hug machine that provides individuals with deep pressure, which appears to have a calming effect on the person.

Many autistic individuals are also sensitive to sounds in their environment. They may hear sounds beyond the normal range and/or certain sounds may be perceived as painful. Auditory integration training, (listening to processed music for ten hours), is an intervention that is often used to reduce these sensitivities. Visual training is another sensory intervention designed to normalize one's vision. There are several different methods of visual training [20].

Methodology:

A quantitative design, descriptive study. With A non-probability purposive sample, a study was carried out to assess the behavioral characteristics of children diagnosed with autism at Sulaimania Autism Center

in the Sulaimania governorate for the period from November 2013 to May 2014. The study was conducted at the Sulaimania Autism Center, Sulaimania governorate to study the behavioral characteristics of children diagnosed with autism. Our sample consisted of 50 children with a clinical diagnosis of autism or typically developing children between 3 and 9 years of age recruited for a study of behavior disorders in children with autism. A descriptive study was conducted with the aim of study.

The aims of the studies are:

1- Find out the family history of autism. 2- To determine the causes of autism among children. 3- To determine the behavioral characteristics of children with autism. To obtain reliable and valid data, a questionnaire was developed according to the objectives of the study. A questionnaire consists of 3 parts, each of which aimed at collecting information and data as follows, part(I): general information concerning the mother's history of children with autism, part (II): information concerning family history, and part (III): A list of 3 parts describing expected behavioral characteristics. A purposive sample is used which consists of (50) children diagnosed with autism in the autism in sulaimani governorate. The children and their relatives were interviewed for the data collection procedure. The empirical fieldwork was carried out.

The statistical procedures applied to determine the result of the present study include:

a. Description statistic

This approach includes Percentage (%) to calculate the description of the sample.

b. mean and standard deviation to estimate the value of some data.

Arithmetic mean(X):

Result and discussion:

Table (1): Distribution of the sample according to their family history of children with autism:

Characteristics	F	%	M	characteristics	F	%	M
Age of Mother				Age of father			
27-36years	27	54	37.18	31-40years	30	60	43.08

37-46 years	20	40		41-50 years	14	28	
47-over years	3	6		51-over years	6	12	
Total	50	100		Total	50	100	
Series of children				The mental state of the father			
First child	8	16		Normal	47	94	
Middle child	27	54		Abnormal	3	6	
Last Child	15	30		Total	50	100	
Total	50	100		Economical state	29	58	
Gestational time				Good	15	30	
Soon	19	38		Mild	32	64	
After a year	26	52		Bad	3	6	
After two years and more	5	10		Total	50	100	
Total	50	100		Family Living			
Family relationship				Urban	38	76	
Yes	33	66		Town	10	20	
Close	8	16		Rural	2	4	
Far	9	18		Total	50	100	
No	50	100					
Total							

It appears from the table that the most frequent age of the mothers group is 27-36 years and represents 52%, and the least frequent group of 47-over (6%), a mean of the ages 37.18. Most of them had a middle child in the series representing (54%). The table reveals that the gestational time of most of the mothers was sooner (66%). Also appears from this table that the most frequent age group of fathers' children is (31-40) years and represents (60%), the mean of the ages is 43.08. Most of the families have no relationship between them (58%). The table shows that the majority of the sample has a mild economic state and represents (64%), and 97% of fathers have a normal mental slate. About their family living most of them live in urban and represent (76%).

Our sample that participated in the study undertaken is male and the age group between 3-9 years old; many studies support the findings of this study related to socio-demographical characteristics of children's age and gender. The present study suffered from some of the usual methodological limitations. Although the sample size compared well with most other studies on the subject, it can be argued that the number of participants was still relatively small, Malow[21] states that the sample consisted of 101 children with a clinical diagnosis of autism disorder or typically developing children between 4 and 10 years of age recruited for a study of sleep and behavior in children with autism.

Table (2): Distribution of the sample according to the behavioral characteristics of children with autism.

Responses Autism Symptoms	Yes		No	
	F	%	F	%
(1) Impairment in social interaction, as indicated by the following:				
a. Marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction	44	88	6	12
b. Failure to develop peer relationships appropriate to the developmental level	31	62	19	38
c. Stereotyped and repetitive use of language or idiosyncratic language	41	82	9	18
d. Does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace	34	68	16	32
e. Lack of social or emotional reciprocity	26	52	24	48

(2) Impairments in communication as indicated by the following:				
a. Delay in, or total lack of, the development of spoken language (without an attempt to use alternative modes of communication such as gesture or mime)	40	80	10	20
b. In individuals with adequate speech - marked impairment in the ability to initiate or sustain a conversation with others	21	42	29	58
c. Stereotyped and repetitive use of language or idiosyncratic language	32	64	18	36
d. Does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace	27	54	23	46
(3) Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as indicated by the following:				
a. Preoccupation with one or more stereotyped and restricted patterns of interest that are abnormal either in intensity or focus	31	62	19	38
b. Adamantly demands specific, nonfunctional routines or rituals	18	36	32	64
c. Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)	6	12	44	88
d. Persistent preoccupation with parts of objects	26	52	13	26

F. = Frequency

% = percentage

The table shows that the children have Impairment in social interaction, the highest responses occur in the item " Marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction " representing 88%", followed by the item " Stereotyped and repetitive use of language or idiosyncratic language ", which represents 82%. The impairments in communication, the children have the highest frequency to the item " Delay in, or total lack of, the development of spoken language (without an attempt to use alternative modes of communication such as gesture or mime) represents 80%.

Also, the table shows that concerning the restricted repetitive and stereotyped patterns of behavior, interests, and activities, the children have the highest frequency of the item " Preoccupation with one or more stereotyped and

restricted patterns of interest that is abnormal either in intensity or focus” which represents 62%. In addition, the least frequency relating to the item “Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)”.

Mash and Barkley [22], child psychopathology, provides an excellent description of autistic disorder and gives a detailed explanation of each of its core symptoms. It also discusses some of the behavioral myths associated with autistic disorder, such as lack of attachment to caregivers. Additionally, Mash and Barkley provide a list of related symptoms that commonly occur among autistic individuals as well as comorbid disorders.

The science and fiction of Autism includes all of the current controversies concerning the disorder. In regards to the causes and treatment, nothing has been widely accepted. As a result, many aspects of the disorder remain highly controversial, particularly about specific behavioral features, treatment, and etiology. Schreiber man meticulously discusses the different issues concerning autism and well as providing important information on the main aspects of autism.

Recommendations Suggestions:-

In the light of the present study, it is recommended that:-

- Encouraging the private sector to establish psychiatric services and sanitariums for children who can offer.
- Psychiatric nursing teaches the patient social skills and uses positive approaches to coping for depressed and anxious patients to build their self-esteem, and may decrease the risk of developing depressive behavioral symptomatic characteristics.
- provided with means and education to help patients with depressive disorder to reach optimum level of functioning These include creating opportunities to participate in ward daily activities as much as possible as a way of assisting. They learn how to assume responsibility for themselves and others, establish their independence, and interact in socially acceptable ways with other children and families.

Suggestions:- It is suggested that:

- Early intervention leads to better outcomes

- Follow-up studies should be carried out to ensure that similar behavioral characteristics of such children are surely identified and how it is dealt with within the community.

References:

- 1-American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed.) Washington, DC: Author.
- 2-American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.)Washington, DC: Author.
- 3- World Health Organization. (1993). The ICD 10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines. Geneva, Switzerland: World Health Organization.
- 4-Lord, C., & McGee, J. P. (2001). Educating children with autism. Washington, DC: National Academy Press.
- 5- Chakrabarti, S., & Fombonne, E. (2001). Pervasive developmental disorders in preschool children. JAMA, Special Issue, 285(24), 3093–3099.A
- 6- What are Autism spectrum disorders? (n.d.). Retrieved September 29, 2008, from Indian Resource Center for Autism.
- 7- Miller, J. N., & Ozonoff, S. (1997). Did Asperger's cases have Asperger disorder? A research note. Journal of Child Psychology and Psychiatry and Allied Disciplines, 38(2), 247–251.
- 8- Cheadle, J. P., Gill, H., Fleming, N., Maynard, J., Kerr, A., Leonard, H., et al. (2000). Long-read sequence analysis of the MECP2 gene in Rett syndrome patients: Correlation of disease severity with mutation type and location. Human Molecular Genetics, 9(7), 1119–1129.
- 9- Popper C.W., Gammon, G.D., West, S.A., Baily, C.E. (2003), Disorder usually first diagnosed in infant and childhood. Textbook of clinical psychiatric (4th ed.) Washington DC, the American Psychiatric Publishing.
- 10- Schreiber man, L. (2005). The science and fiction of Autism. Cambridge, Massachusetts: Harvard University Press.
- 11- National Institute of Mental Health (NIMH). (2002).Autism. NIH Publication NO.97- Retrieved February.
- 12- Towbin, K. E. (1997). Pervasive developmental disorder not otherwise specified. In D. J. Cohen & F. R.
- 13- Lord, C., & Risi, S. (1998). Frameworks and methods in diagnosing autism spectrum disorders. Mental Retardation and Developmental Disabilities Research Reviews: Special Issue: Autism, 4(2), 90–96.
- 14- Harris, S. L., & Handleman, J. S. (2000). Age and IQ at intake as predictors of placement for young children with autism: A four- to six-year follow-up. Journal of Autism and Developmental Disorders, 30(2), 137–142.

- 15- Sheinkopf, S. J., & Siegel, B. (1998). Home-based behavioral treatment of young children with autism. *Journal of Autism and Developmental Disorders*, 28(1), 15– 23.
- 16- Volkmar (Eds.), *The Handbook of Autism and Other Pervasive Developmental Disorders* (2nd ed., pp. 123–147). New York: Wiley.
- 17- Cox, A., Klein, K., Charman, T., Baird, G., Baron-Cohen, S., Swettenham, J., et al. (1999). Autism spectrum disorders at 20 and 42 months of age: Stability of clinical and ADI-R diagnosis. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 40(5), 719–732.
- 18- Lord, C. (1995). Follow-up of two-year-olds referred for possible autism. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36(8), 1365–1382.
- 19- Stone, W. L., Lee, E. B., Ashford, L., Brissie, J., Hepburn, S. L., Coonrod, E. E., et al. (1999). Can autism be diagnosed accurately in children under 3 years? *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 40(2), 219–226.
- 20- Dawson, G., & Osterling, J. (1997). Early intervention in autism. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 307–326). Baltimore: Brookes.
- 21- Malow BA, Marzec ML, McGrew SG, Wang L, Henderson LM, Stone WL. Characterizing sleep in children with autism spectrum disorders: A multidimensional approach. *Sleep* 2006; 29:1566-1571.
- 22- Mash, E. J., and Barkley, R. A. (2003). *Child Psychopathology* (2nd ed.) New York: the Guilford press.
- 23- Harris, S. L., & Weiss, M. J. (1998). *Right from the start: Behavioral intervention for young children with autism*. Bethesda, MD: Woodbine House.