

Hearing and Children with Autism Spectrum

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Abstract

Through the results obtained, we found that most of the families who had a child with autistic disorder were residents of cities, with a percentage of 89.8%, while 10.2% who had a child with autism from rural housing. The majority of children with autism had a weak physical condition of 74.5% percent, and 15.3% percent had an average condition, while 10.2% percent had a good physical condition. Likewise, among the results that we found that the best way to deal with a child with autism is care and treatment, and by 62.2%% and 31.6%% of mothers, the opinion was that the best way to deal with a child with the autism spectrum is care only and by 6% of Among the mothers said that treatment is better than the way they deal with their children. Likewise, between research, autistic children who are taken in the research suffer from a hearing disorder and 82.7% of children respond when their names are heard, while 17.3% do not respond when calling their names. It is noticeable that the proportion of children who suffer from hearing loss, 17.3% that they did not respond when calling their names 83.7.% of autistic children asked for help in their daily problems, while 16.3% of the children does not asked for help. 53.1% of the children find it difficult to express their wishes when they want to ask for something, while, 46.9% of the children did not find it difficult to express when they wanted to get something. The research also addressed the behavior of autistic children.

Keywords: Hearing, children, autism spectrum

Introduction

Autism is a disease that occurs due to a defect in the nervous development of the fetus and leads to poor learning in the child and his lack of communication with the outside world, and autism stays with the child for life, and has pathological consequences that are cautious and unknown, but it does not negatively affect the average life expectancy, the Children diagnosed with autism spectrum disorders demonstrate restricted, repetitive behaviours and interests as well as impairments in social communication and social interaction across multiple contexts⁴. Optimism is very high for autistic children with an IQ above 70 and those who can use the language of communication at the age of 5-7 years of age. As for adulthood, the results of recent American studies indicated that two-thirds of autistic people do not improve and fall into the category of people with special needs (the handicapped), and live dependent on their family or private institutions. The same studies indicated

that only 1-2 percent of autistic people lead a normal and independent life and can make a living. Whereas 5-20 autistic people can reach a normal position (other than that they prefer to be kept under surveillance .Usually the child's situation will improve in the future (in adulthood) if the family or the surrounding community is supportive, cooperative, and understanding of his situation. However, some autistic people may harm themselves or others^{2,3} There are many types of autism (Classical Autism, Asperger's Disorder, Rett's Disorder, Disintegrative Disorder that contain some features of autism. However, there are common symptoms in children (social weakness, or social networks weak relationships, weakness in social relations with his mother. his father with family members and strangers. In the sense that the child does not care about the presence of others ,He does not rejoice when he sees his mother or father. He does not look at the person who speaks to him (lose of eye contact) . He does not enjoy the presence

of others and does not share their interests. He does not like to share his games., He loves to play alone and he don't mixed with other children Also he cannot know the feelings of others or deal with them correctly ,such as seeing his mother crying or sad because he does not interact with the situation naturally like the rest of the children, Weak language communication Weakness in linguistic expression or delay in speaking sometimes using strange words from the child's composition and repeating them always repeat the last word of the sentence that he heard Also there may be difficulty in using pronouns.,His activities, interests, and games are frequent and limited, there is no renewal in it, such as playing with cars only, cubes, or a way of playing that is not in line with the game in which he plays, such as stacking small cars in a certain way instead of imagining that they are going on the road. He also loves the routine and does not like changing his clothes, types of eating, or the way he organizes his room .. Clinging to things like a specific pillow or blanket and always carrying him with him, and he may also have frequent movements of the hand and fingers ⁴⁻⁶ There is a lot of research on this disorder and all of you find things that can be useful in diagnosing and evaluating the disease and the speed of its treatment. Therefore, we wanted a questionnaire organized by experts for mothers of autistic children about their children and some behaviors. ⁷

Material and Method

1-A total of 98 children with autism were examined after the approval of their families in one of the autism centers and the specialized medical clinic for hearing and speech. Samples are sent from the children to confirm the diagnosis to the hospital and give them the necessary medical care to help them.

2- Diagnose hearing damage to children who do not respond when their name is spoken. By means of the Brainstem Evoked Response Audiometry (BERA) examination, which is an objective and non-invasive method for hearing. Evaluation that detects electrical activity from the inner ear to the lower colliculus (9) 3- A questionnaire dictated by mothers for children with autism, as the information gives an understanding of the distinctive signs of children with autism.

4- Statistical analysis is done by making percentages of questionnaire results and hearing test results.

Results

Statistical results were taken after the questionnaire was completed by the mothers in the autism center and they are the sample of the study.

Table No. 1 shows that the percentage of males that took the research is 39 samples, while females are 59, and this is probably because the sample was from the mothers of the autistic children. Likewise, the schedule indicated that the age group of mothers that ranges from 31 years to 40 years is the most within the sample taken and is the highest percentage as the most fertile group and is considered the most popular group for marriage, while the percentage of mothers whose ages range between 41 to 50 years is the lowest and that the ratio Females are more than males among the specimens in the Autism Center of the Abbasid threshold. ¹⁰. 645 children between 0 and 4 years were diagnosed with autism spectrum disorder diagnosed from 1986 to 2005. The incidence of autism spectrum disorder was 5.49 per 10,000. The prevalence rate was 16.1 per 10,000 for children under 15 years old. The same period. The male to female ratio was 6.58: 1. This is the first epidemiological study of autism spectrum disorder in Chinese children. The incidence rate is similar to that in Australia and North America and less than Europeans. This was corroborated by the conclusion that the proportion of males was more than that of females . ^{11,12}.

As for Table No. 2 most of the families who suffer from the presence of one of their children with autism disorder are residents of the city and they are of limited income. This was confirmed by Table 2, as most of the children affected by 88% are residents of the city.

As the table showed that most families of children with autism had a weak physical condition, about 74.5% of the sample taken, while, 15.3% had a moderate physical condition, and only 10.2% had a good physical condition, and these ratios show that autism affects all Strata of society. Also, between the schedule, most of the injured children were residents of the city, despite the weak physical condition, by 89.8%, and 10% of the children live in the countryside, and therefore the autism disorder does not depend on the location, so there is no difference between the city and the countryside, although the percentage of the city was higher than the countryside but This may be due to health awareness and the presence

of child care centers with autism. Table (3) also showed that most of the parents, especially the mother, had an opinion that the best way to deal with a child with autism is care and treatment, and about 62,2% saw that care is an essential part of dealing and supplementing treatment, while the rates differed between treatment and care, 31, 6% said that the best way to deal is with care, and 6% said that the best way to deal with their children is treatment. This table shows the awareness of the parents and the evidence for this is the percentage difference between the answers, especially the percentage of the parents who chose care and treatment to deal with their children and confirmed this.¹⁴ After that, 17 children who appeared in the previous table were tested using the (BERA) brain stem examination device. Children with autism were examined to measure the degree of hearing. It is a test that depends on the brain's response to hearing sound frequencies. The child is under the influence of anesthesia or hypnosis and shows a convergence in the results of the examination between the table No. 4, which is the schedule of the mother's knowledge that her child is unheard when called in his name, and the results of the examination by the device examine the brainstem that there are 15 children who cannot hear and compare it to the behavior test, which is the child's behavior when hearing the sound and its result was 17 children who do not hear There is an affinity between the objective test BERA and behavior test. Table 4 shows answers to the question of the effect

of the disturbance on the sense of hearing or vice versa, as most mothers answered not suffering from a hearing disorder at a rate of 82.7%, and 17.3% answered yes. This answer means that either these children do not suffer from this symptom or perhaps because of the increased care and attention given to them , We also mentioned previously that care has the primary role in improving the behavior of the child and certainly this is reflected in the improvement of the children's sense of hearing. Also, this table shows the child's response when they call in his name since 82.7% were responding when hearing their names, and since most of the children were not suffering from hearing problems, this certainly means the child's response when he hears his name, while 17.3% do not respond when calling their names and from It is noticed that the percentage of children who suffer from a hearing defect was 17.3%, and thus this means that they did not respond when they called

them by their names, as it was not completely identical.^{9,13} As for Table (5) between non-verbal behavior of children, which ranged from complete silence, as 29.6% of children were in complete silence, and 38.8% of the sample taken were suffering from laughter spells without justification for that, and the percentage 31,6% of children cry out continuously. Likewise between the schedule is weakness in non-verbal (motor) behaviors, as most of the children did not suffer from weakness in the use of signs, gestures and facial expressions, and their percentage was 60.2%, while 38,8% of the sample Autistic children have been noticed weakness in these behaviors and this may be due to the tendency of the autistic child to use verbal verbal behaviors or as we mentioned crying or screaming or other and thus this means not to use or weakness in the use of gestures and signs.¹⁵ The research showed that a person with hearing impairment may be susceptible to autism. Tables 4 and 5 were supportive of some of them both confirming that the type of injury is far from hearing impairment among the children studied^{9,13,15}

Children with ASD may experience a lack of an inner ear, which impairs their ability to recognize speech. Researchers at the University of Rochester Medical Center identified this deficiency by measuring acoustic emissions for children ages 6 to 17. Those who were diagnosed with ASD had difficulty hearing a specific frequency (1-2 kHz) important for speech processing. The researcher cited an article by Luisa Benito, Ph.D and co-author of the study, in the July 25, 2016 online edition of Science News: "Hearing loss has long been associated with delayed development and other problems, such as language deficiency." "Although there is no relationship between hearing problems and autism, difficulties with speech processing may contribute to some of the main symptoms of the disease." Like other auditory processing disorders, this deficiency can contribute to your child's difficulty learning and language. An ASD audiologist or audiologist can determine your child's deficiency of hearing and language and suggest strategies to help them overcome them. These strategies may include.¹⁴ Because autism affects each child differently, it's important to understand how the disorder may impact their ability to hear and process sounds. There is a wide range of how autism affects hearing. In some cases, a child may have no hearing loss or a child may have mild, moderate or even significant hearing loss that can

be corrected with hearing aids¹⁵. It was noted through Table No. (6) that 83.7% of autistic children ask for help in their daily problems, while 16.3% of children do not ask for help. Likewise, the schedule showed that 53.1% of children find it difficult to express their wishes when they want something while 46.9% of the children did not find it difficult to express when they want to get something that may be due to the difficulty of understanding these children's desires in addition to the child's inability or the difficulty of expressing what he needs. As endorsed by^{16,17}

Table (7) showed the imaginative behavior of autistic children, as 23.5% of mothers said that their children play imaginative play, while 76.5% of children did not play imaginative play. This may be due to the improvement of children's behavior or to the awareness of mothers and thus their use of child training programs and techniques to reduce this behavior or the lack of space for them to practice this

behavior or because of the awareness of mothers and thus their use of programs or training techniques for children that reduce this behavior or lack of space for them to practice This behavior is through training programs as we mentioned. This conclusion was supported by Table No. 7.^{17,18} As the schedule showed that 75 of the infected children prefer electronic games, which are imagination games, which indicates the power of imagination, and this came contrary to what she said.²⁰

Table No. (8) shows whether the child is making strange movements Does your child make strange movements, for example, contemplating his fingers in front of his eyes .It is noted from Table No. (8) that 32.7% of the children taken in the sample perform strange movements according to the mother's response, while 67.3% of children do not make strange movements, this may be due to either that the child does not suffer from this symptom or because of improved behavior Children as a result of the training provided to them by the mother as well as his response to the training of the autism center where he indicated that Abdul-Qadir (2001) clearly shows autism in the first three years of the child's life, and is defined as a disability that impedes the development of social skills, verbal and non-verbal communication and imaginative and creative

play and is the result of disorder Neurotoxic affects the ways in which information is collected and processed by the brain causing problems in social skills such as the inability to link, the creation of relationships with individuals, the inability to play and use of spare time, and the inability to constructively visualize. As for communication skills, they lie in the inability to express oneself automatically and in a suitable and functional manner, and the inability to understand what others say, and the inability to use other skills besides verbal skills to help the individual in the ability to communicate, and the problem of adapting to the environment is in not The ability to perform work and job performance effectively in the environment and the inability to cope with and tolerate changes in the environment and deal with them. (1,20) The schedule showed that 72,4% of autistic children communicated in kind with their mothers when something unusual occurred, while 27,6% of the children did not communicate in kind with their mothers. The table also showed that 62,2% of autistic children tried to communicate and get closer to their mothers by raising his hands to his mother in order to carry him and this contradicts the wrong thinking taken from the autistic child, while 37,8% of children do not communicate physically with their mothers. The schedule showed that 78.6% of the children taken in the sample viewed the things that their mothers referred to, and 21.4% of the children did not look at the things their mothers referred to. This may be due to the lack of attention of children to the things around them.^{1,14} The schedule showed that 68,4% of children have excess physical activity, and since we are talking about children, they inherently have physical activity and since they are autistic, increased physical activity is one of the main symptoms of autism, while 31,6% of children do not have excess physical activity.^{11,15} The schedule showed that 80.6% of the children taken in the sample are characterized by stubborn and quarrelsome behavior, according to the answer of the mothers. Certainly everyone knows the stubbornness of children, especially in the first years of their lives. . While 19 of the mothers said that their children do not oppose nor tend to quarrelsome.

You notice his interest in and attachment to a certain thing, such as taking care of a specific game and his association with it and not throwing it or causing breakdowns in it ,The schedule showed that 48% of the children were related to a specific thing, while 52% of

the children were not related to a specific thing such as play.^{1,7}

We note from the table that 67.3% of autistic children care about other people around them, while 32.7% of children do not care about others. Between the schedule, 40,8% of mothers said yes, that is, their children seem to be annoyed by changing food dates or sleep times, and this is due to the child's awareness of hunger, and this means that the nervous system of these children works better than other children and their love for the daily routine, while 59 , 2% of mothers said that the child does not show his discomfort due to changing the dates of his food or sleep, and this is because the child is not aware (he does not have nerve stimuli) and since he does not suffer, he certainly does not feel hungry because of the lack of stimulation of the nervous system. 54.1% of mothers of autistic children observed that their children should not be afraid of those situations

that require fear, certainly due to a defect in the nervous system of these children or the lack of programs used to develop the autistic child, while 44.9% of mothers noted that their children fear of situations Which necessitates this and this is due to stimulation of the nervous system as well as due to the noticeable development in the level of autistic child.^{19,20}

We note from the above table that 55.1% of autistic children suffer from memory impairment or lack of focus, while 44.9% of children do not suffer from lack of focus, perhaps because of the degree of autism in these children or because of children's response to training.

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Table 1. shows the percentages of samples taken in the cognitive questionnaire and by gender and age group.			
sex			
percentage	The ratio	Repetition	the number
39,8	39,8	39	Male
60,2	60,2	59	Female
100,0	100,0	98	Total
Age			
31,6	31,6	31	20-30 years
45,9	45,9	45	31-40 years
22,4	22,4	22	41-50 years
100,0	100,0	98	Total
Table (2) shows the percentages of families of children with autism, according to housing and financial status			
percentage	category	Repetition	
Living			
10,2	10,2	10	countryside
89,8	89,8	88	City
100,0	100,0	98	Total
Physical condition			
74,5	74,5	73	Weak
15,3	15,3	15	Average
10,2	10,2	10	good
100,0	100,0	98	Total

A table showing information about the samples taken in the questionnaire

Table B shows the mother's impression of a preference for dealing with autistic children

Table (3) Shows the percentages of the way in which mothers must deal with their children.			
percentage	category	Repetition	
6,1	6,1	6	treatment
31,6	31,6	31	care
62,2	62,2	61	both of them
100,0	100,0	98	Total
Table (4) shows whether the child suffers from a hearing disorder and the extent of the autistic child's response when called in his name			

Table C shows some of the characteristics of autism children

percentage	category	Repetition	
17,3	17,3	17	yeas
82,7	82,7	81	No
100,0	100,0	98	Total
Does your child respond when you call him by his name			
82,7	82,7	81	yeas
17,3	17,3	17	No
100,0	100,0	98	Total

Table D shows some of the favorite games for children with autism

Table (5) shows the behavioral changes that an autistic child can suffer from, as well as whether he suffers from a weakness in the use of motor behaviors.			
percentage	category	Repetition	
29,6	29,6	29	Total silence
31,6	31,6	31	Constant screaming
38,8	38,8	38	Laugh without reason
100,0	100,0	98	Total
I suffer from poor use of motor behaviors (nods, nods, facial expressions)			
38,8	38,8	38	yeas
60,2	60,2	60	No
100,0	100,0	98	Total

Table (6) shows whether the child is asking for help when facing problems and whether the child has difficulties expressing his desire to get anything that he might want.

Does your child ask for help when they encounter a problem			
percentage	category	Repetition	
83,7	83,7	82	yeas
16,3	16,3	16	No
100,0	100,0	98	Total
He finds it difficult to express his desire to have something			
53,1	53,1	52	yeas
46,9	46,9	46	No
100,0	100,0	98	Total

Table D shows some of the favorite games for children with autism

Table No. (7) shows whether the child plays imaginative play Your child does not play an imaginary game, for example, feeding the doll			
percentage	category	Repetition	
23,5	23,5	23	yeas
76,5	76,5	75	No
100,0	100,0	98	Total
Table No. (8): It explains the types of games that a child with autistic disorder prefers.			
	percentage	Repetition	Game types
	76.5	75	Electronic
	23.5	23	Others
	100	98	Total
Table No. (9) shows the physical and physical communication of the autistic child and the attempt to get closer to his mother			
percentage	category	Repetition	
If something new happens, does your child look at you to see how you feel about it			
72,4	72,4	71	yeas
27,6	27,6	27	No
100,0	100,0	98	Total
Your child raises his hands to you to carry him as his peers do			
62,2	62,2	61	yeas
37,8	37,8	37	No
100,0	100,0	98	Total

Table E showing some of the favorite games for children with autism

Table No. (10) shows the autistic child's response to the things their mothers refer to If you were referring to something in the room, would your child be looking at that thing			
percentage	category	Repetition	
78,6	78,6	77	yeas
21,4	21,4	21	No
100,0	100,0	98	Total
Table No. (11) shows the increased physical activity associated with most children with autism Your child has increased physical activity			
percentage	category	Repetition	
68,4	68,4	67	yeas
31,6	31,6	31	No
100,0	100,0	98	Total
Table No. (12) shows the stubborn and quarrelsome behavior of an autistic child Does your child tend to stubborn and quarrelsome			
	percentage	category	Repetition
yeas	79	80,6	80,6
No	19	19,4	19,4
Total	98	100,0	100,0

Table F shows the effect of some games with changes in routine and focus for children with autism

Table No. (13) shows if the child is related to a game or is interested in something specific			
Repetition	category	percentage	
48,0	48,0	47	yeas
52,0	52,0	51	No
100,0	100,0	98	Total

Table No. (14) shows the autistic child's interest in others Your child cares about others			
Repetition	category	percentage	
67,3	67,3	66	yeas
32,7	32,7	32	No
100,0	100,0	98	Total

Table No. (15) shows whether the autistic child is annoyed by changing his or her bedtime, Is he upset if the dates of (food - dream) change?			
Repetition	category	percentage	
40,8	40,8	40	yeas
59,2	59,2	58	No
100,0	100,0	98	Total

Table No. (16) shows whether the autistic child is aware of the instinct of fear or not			
Repetition	category	percentage	
54,1	54,1	54	yeas
44,9	44,9	44	No
100,0	100,0	98	Total

Table No. (17) shows weak memory or lack of focus in the autistic child You feel his memory is weak or he has a lack of concentration			
Repetition	category	percentage	
55,1	55,1	54	yeas
44,9	44,9	44	No
100,0	100,0	98	Total

Note I have neglected Table (18) because this table has been put in place to ensure the correctness of some answers and this table is Suffering from excessive inactivity?

Repetition	category	percentage	
15,3	15,3	15	yeas
84,7	84,7	83	No
100,0	100,0	98	Total

Conclusions

It was found through the research that there is an increase in the number of children with autism spectrum and that there are higher cases of males than females, and also the ages of affected mothers indicate a danger in the community as well that children of the autism spectrum need special medical attention for hearing to improve this sense of them, and also mothers confirmed that care and attention are among the mechanisms

Especially where they are trained to help the child improve his health status to live with the community, so we recommend that you focus on educating mothers and training them to take care of their children in specialized centers.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Al-Kindi teaching hospital and all experiments were carried out in accordance with approved guidelines.

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