

A Comparison of Eating Problems among Children with Autism, Mental Retardation and Children with Normal Development

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Abstract

The study investigates the scope of prevalence of problems with eating habits among children plagued with autism and mental retardation compared to children with normal development. The sample of the study consists of 156 male and female children whose ages range between (3-12) years. The results of the study show that autistic children have experienced eating problems more than children with mental retardation and children with normal development. All the subjects in the study face problems with eating sugar and sweets. Furthermore, children with autism have a problem related to the period of eating, whereas children with mental retardation have faced problems with eating uncooked vegetables.

Key words: Autism; Mental Retardation; Normal development; Problem of eating

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INTRODUCTION

Food is a basic element in the life of individuals since it enables them to perform their daily activities—it is vital for the proper development of the body. However, food constitutes a true challenge to individuals with autism, or individuals who are handicapped, and therefore it might become a great concern for mothers and caregivers.

Researchers and specialists have noticed that problems are bound to occur when it comes to eating at the time of being acquainted with the characteristic traits of autism. Researches have also appropriated a group of problems to assist families to overcome such problems (Twachtman, Amaral, & Zebrowski, 2008). Researchers have estimated that 25% of those in early childhood have problems with eating, but the number increases to reach 80% among children with autism particularly, and children with development disorders in general. This problem gets much more complicated with an average of 3-10% of children dealing with autism throughout their developmental stages (Kerwin, 1999). However, this average might reach 33% for mentally retarded children (Matson, 2001), thus negatively affecting the child's life, especially with regard to getting the necessary balanced diet, which will consequently help him grow naturally and in an healthy manner, in a manner that helps his family avoid trouble and hard times (Genevieve et al., 2011). It is important, however, to point out that recent studies and research have played a significant role in determining the proper techniques and programs that aim at helping families overcome such problems in eating habits (Twachtman-Reilly, Amaral, and Zebrowski 2008).

It is normal that eating problems, for children with autism, begin from the age of six months and continue until the age of four and a half years. When children begin to talk and speak, or show ability to express themselves, problems begin to extensively appear and get more complicated. Then, other problems are bound to occur, especially in choosing quality of food (Williams et al., 2010). Eating problems start to appear in numerous shapes and behaviors. Some subjects with autism eat quickly; therefore, they become subjects to some physical problems, such as vomiting and choking. While some examinee reject eating with their families and peers, others become very selective eaters. Still others become very hard to convince to accept any kind

of food—they start to reject eating most kinds of food (Williams, 2011). Usually, they eat numerous types of food (15-20), or maybe less in some studies, which indicated that about 50% of children from age 18-24 months have the characteristic trait of limitedness in variety of food, and 13% of them reject eating altogether (Lukens, Linscheid, 2008).

Some autism-oriented studies' scholars have pointed to some different, yet clear problems when it comes to some eating habits for autistic children. These include having less than 20 kinds of food, often taking more than 45 minutes when eating their daily meals, vomiting or suffocation during eating food, improper behavior during the time of eating like (e.g., fighting, kicking, throwing food...etc). Additionally, there are other trends of anger at the time of eating, such as rejecting food more than once a day, thus leading to digestion and physical problems, as well as stomach problems (Koeppen, 2010). Furthermore, there is potential for dysphasia, digestive, and excessive allergy to some kinds of foods (Catherine et al. 2011).

David and Kuhn, in dealing with eating-related problems for mentally retarded children, have identified some important problems, thus coming up with a prototype of these eating habits' problems. These include rejecting food, being picky eaters, being aggressive at eating times, while eating, and Pika's behavior, in which children pick up food from the floor to eat. Some scholars have gone with the point that some problems are attributed to physical reasons such as the inability to digest food, sucking fingers, chewing, etc. In addition, children might have some medical problems or digestive ones, such as colic, diarrhea, and infections, excessive with microbe materials. Some children might be food-phobic or eating-phobic, while others might take some medicines that have negative side effects, such as feeling hungry or thirsty (Volker and Maz, 2010).

However, some researchers have found that there is a strong relationship between melancholy and eating problems for mentally retarded children. In a corpus of 54 people who all had high rates of concerns and melancholy, the findings have indicated that all children have some sort of functional problems but with different forms.

1. PREVIOUS RESEARCH

In a corpus of 138 autistic children and 298 normal children, Schreck, Williams, and Smith 2004, have studies children's behavior between 5-12 years. This study has had two different kinds of questions for families: eating manners (the time of eating food and during food), and the all the preferred foods for children. Results have found that autistic children face problems related largely to eating food compared with normal children. Autistic children normally reject to eat most kinds of food compared to the other group. The study has also revealed

that autistic children normally are apt to accept less solid food.

Jill et al, 2008, studied the eating problems faced by physically retarded children. The sample of the study consisted of 60 children who were divided into two groups. By applying STEP as the tool of the study, results have shown that there are some problems for the two groups, especially at eating time and regarding food quality, in addition to behavioral problems during the process of eating. However, autistic children's behavior was much more noticeable, especially as they opted to reject certain foods, focusing only on specific ones, in addition to rejecting eating foods compared to other children who are mentally retarded.

Martins, Young and Robinson have studied the problems of eating habits in a case study of autistic and normal children. They studied the nature of autism, and they measured how frequently it takes place. Additionally, the relationship between the autistic degree and the eating problems is thoroughly studied. The sample of the study consisted of 41 autistic children and 41 children of normal development. Ages ranged from 2-12. The study was conducted by employing the technique of BPFAS, which enables the study of students' behaviors during meal times. Results have shown that autistic children lacked the skill of independently eating their meals by showing some aspects of rejection and fear from food. Additionally, results have shown that there is a correlation between eating problems and food confusion, whereas normal children showed very few eating problems.

Bandini and Anderson, 2010, have applied food problems on a sample of 53 autistic children compared to 58 normally grown children whose ages ranged from 3-11. Results have shown that 41.7% of autistic children have acquired the behavior of rejecting food compared to 18.9% for normally grown children. In addition, there has been a very close ration when it comes to eating specific kinds of food: Results have shown that 22.5% of autistic children reject eating special kinds of foods compared to only 19% of normal children. Further, results have shown that 4 autistic children compared to one normal child have hesitated to eat a special kind of food.

Nadon et al, 2011, have studied the problems of eating for autistic children only at the time of eating. This study has investigated whether the environment in which the subjects are living plays a vital role with the problem of autism. Forty-eight families took part in this study; these families have children whose ages range from 3-12. In addition, the brothers of those who are autistic have participated in the study with a number of 48. Results have shown that the autistic children have 13.3 problems during their meals, namely, the timing of eating and rejecting specific kinds of foods. However, the brothers have shown some problems with an average of 5.0% compared with their autistic siblings who live in the same social environment.

2. THE PROBLEM OF THE STUDY

Eating problems are very common among children in general and autistic children in particular. Throughout this study, I aim to identify this problem for children who are mentally retarded, autistic and normal. In addition, it examines the relationship with some variables, the thing that might lead to establishing a database and therefore this will help in developing some remedy and supervision programs for parents to enable them overcome such problems. That is why this study intends to respond to these two questions:

- What are the eating problems for autistic children, retarded children, and those with

normal development?

- Are there statistically significant differences at $0.05 \geq \alpha$ concerning the eating problems for children in accordance with the variables of sex, age, and the status of the problem?

3. RESEARCH METHOD

The sample of the study has consisted of 156 children, of whom 59 children have autism, 57 belong to the category of the mentally retarded, and 40 were subjects with normal development. The subjects' ages ranged from 3-12 years. The table below shows the distribution of the sample of the study according to the study variables.

Table 1
Distribution of Individuals of the Sample of Study Due to Variables of Study

Sex	Age Category	State	Number	Percentage	
Males	6-3	Autism	13	43.3	
		Mental Retardation	8	26.7	
		Normal	9	30.0	
			Total	30	100.0
	12-6	Autism	31	44.9	
		Mental Retardation	26	37.7	
		Normal	12	17.4	
			Total	69	100.0
	Females	6-3	Autism	8	44.4
Mental Retardation			3	16.7	
Normal			7	38.9	
		Total	18	100.0	
12-6		Autism	7	17.9	
		Mental Retardation	20	51.3	
		Normal	12	30.8	
		Total	39	100.0	

4. INSTRUMENT OF THE STUDY

The researcher developed a tool of the study by referring to the employed scales and to the related literature. The scale consists of 35 items. The following weights were considered: weight one was given to the answer "to a great extent," weight two was given to the answer "to a medium extent," weight three to the answer "to a simple extent," and weight four to the answer "there are no problems at all," and the indications of confirming the scale were by the method of repetition. The scale was applied on a sample that consisted of 60 families of children with autism and mental retardation. The scale is reapplied on the sample itself two weeks later, for the quotient of connection amounted between the first application and the second (0.90), but indications of validity of instrument of study were achieved through procedures of preparing the scale, which achieved the logical validity through representing the scale of the sample of problems.

4.1 Limitations of the Study

It is likely to generalize the results of this study in light of the following determinants and/or limitations:

- This current study is confined to (156) subjects of children with autism, mental retardation, and normal development.

- Some subjects underwent a number of behavior-modification programs because of having eating-problems, whether these problems are caused by their families, or even from the current working cadres with them within the institutions of special education.

4.2 Results of Study:

Results to question one "1. What are the eating problems for autistic children, retarded children, and those with normal development?" In responding to this question, we have calculated the question averages for the subjects of the study as illustrated by table 2 below:

Table 2
Mediums and Standard Deviations of Responses of Individuals of the Sample of Study on Eating Problems

Item	Autism		Mental Retardation		Normal Development	
	Medium	Standard Deviation	Medium	Standard Deviation	Medium	Standard Deviation
Difficulty in chewing food	3.30	.93263	3.63	.69228	3.50	.55470
Difficulty in swallowing	3.48	.85261	3.76	.62530	3.62	.66747
Problems in Teeth	2.77	1.05251	3.27	.96187	3.050	.95943
Difficulty in moving Tongue	2.96	1.03573	3.49	.86855	3.77	.53614
Excessive Appetite	2.78	1.13961	2.62	1.15208	3.12	.96576
Poor Appetite	3.41	.80401	3.43	.84005	3.150	.97534
Sensitivity to some foods	3.45	.84503	3.28	1.04803	3.650	.54957
Sensitivity from casein & Gluten	3.27	1.07934	3.41	1.00502	3.700	.56387
Eats through pipe	3.42	.98102	3.90	.35695	3.92	.26675
Puts everything in mouth	2.89	.99434	3.13	1.05794	3.65	.66216
Eats things from ground	3.09	1.05887	3.03	1.09168	3.90	.37893
Sensitivity from heat	2.82	1.04214	3.33	.85217	3.47	.71567
Insists on eating a type of food	2.93	.99749	2.95	1.12071	3.17	.98417
Rejects new types of food	2.31	.90943	2.44	1.03842	2.97	.97369
Eats foods of similar color	2.98	.95240	3.34	1.07656	3.42	.67511
Eats food of similar shape	3.13	.96152	3.38	1.07324	3.47	.67889
Eats food of similar taste	2.98	1.02827	3.15	1.10504	3.46	.71987
Touches food before eating	2.86	1.06904	2.84	1.15168	3.17	1.12973
Wishes to eat others food	2.90	1.14206	2.59	1.06020	3.22	.89120
Trances of anger at mealtime	2.98	1.10988	2.95	1.10522	3.41	.84970
Difficult to acquire his heart at eating	2.77	1.06158	2.91	1.11010	3.150	1.05125
Eats uncooked vegetables	2.75	1.02261	2.63	1.14317	3.00	1.19208
Eats un eating things: soil	3.24	1.04494	3.43	.93868	3.85	.42667
Rejects sitting with family at mealtime	3.16	0.97814	3.22	1.02672	3.60	.67178
Eats un properly	2.91	1.03993	2.74	1.11044	3.70	.64847
Eats 45 minutes in eating	2.93	1.08619	3.29	1.05977	3.72	.45220
Has a certain Rotten in eating	2.76	1.12157	3.03	1.12336	3.37	1.00480
Eats sugar & sweets	2.21	1.07389	2.30	1.08682	2.75	1.14914
Suffers from weight decrease	2.86	1.05963	3.52	.75100	3.30	.93918
Suffers from diarrhea	3.18	.89660	3.49	.89775	3.72	.45220
Suffers from constipation	2.94	1.01715	3.24	1.07220	3.61	.54364
Suffers from intestinal swelling	3.30	.89279	3.28	.90147	3.90	.30382
Dark spots on his body	3.47	.82603	3.80	.63733	3.97	.16013
There are problems in vomiting	3.30	.84441	3.41	1.00204	3.82	.38481
Suffers from vomiting	3.26	.89695	3.77	.62248	3.80	.40510
Total Average	3.02	.49907	3.20	.43303	3.49	.30047

Notably, through observing the means (mediums), we notice in the arithmetic averages that there is an increase in the level of problems from which the children with autism disorder suffer compared to those with mental retardation; meanwhile, these problems decrease to a lower rate for children with normal development. Further, it was noteworthy that eating sugar and sweets is a problem, which almost all subjects have noticeably suffered from. We also notice that children with autism have suffered from the problem “exceeding (45) minutes in eating at mealtime,” in a form bigger than the rest of

figures of the sample. We, besides, notice that children with autism and mental retardation in general have a greater tendency to eat uncooked foods compared with children with normal development. However, it is found that children with mental retardation suffer more from this problem as compared to children with autism.

Table 3 below helps us answer the second question: Are there differences with statistical indication to problems of eating among individuals of the sample of study due to sex variable?

Table 3
Results of (T-Test) Individuals of the Sample of Study

Sex	Medium	Standard deviation	Value T.	Degrees of freedom	Level of Indication
Males	3.2262	0.44868	0.663	154	0.508
Females	3.1748	0.49510	--	--	--

Table No. (3) indicates that there are no differences with statistical indication to eating problems due to sex; it was shown that the value of the counted (t) has no statistical indication at the level of 0.05.

Are there differences with statistical indication due to the variable of time age?

To respond the question (T-Test) was employed.

Table 4
The Results of the (T-Test) of the Subjects of The Study

Time age	Medium	Standard deviation	T. Value	Degrees of freedom	Level of Indication
3-6	3.1893	0.45640	-0.323	154	0.747
6-12	3.2155	0.47101			

Table No. (4) shows that there are no differences with statistical indication attributed to the variable of time age of individuals of the sample of study, for it was shown that the value of counted (t) is not with statistical indication at the level of 0.05.

To answer the question "Are there differences with statistical indication ascribed to the variable of the nature of the state?" (ONE WAY ANOVA) was employed as can be seen in *table 5*:

Table 5
Results of Test (ONE-WAY ANOVA)

	Total of Squares	Degrees of Freedom	Average of Squares	Counted F	Level of Indication
Among Groups	5.206	2	2.603	14.052	.000
In the Groups	28.345	158	.185		
Total	33.551	156			

Table 5 clearly shows the existence of differences with statistical indication attributed to the variable of status of

the problem. To realize these differences, Shafe' Test was employed as can be seen in *Table 6*

Table 6
Results of Shafe Test

Nature of the state		Differences among Averages	Standard Mistake	Level of Indication
Autism	Mental Retardation	-18019	.07994	.082
	Naturalism	-.47032*	.08878	.005
Mental Retardation	Autism	.18019	.07994	.082
	Normal People	-29013-*	.08816	.000
Normal people	Mental Retardation	.29013*	.08819	.000
	Autism	.47032*	.08878	.000

Table 6 clearly demonstrates the existence of differences with statistical indication for eating problems attributed to status of the problem for children with (autism and mental retardation) compared with children with normal development. Using Shafe' Test, it was noticed that the differences tend for the benefit of increasing eating problems at children with autism compared to the rest of individuals of the sample.

a problem in eating uncooked and/or solid vegetables. This might be attributed to the fact that autistic children have been unable to differentiate between fruits and vegetables, because of the lowness of intelligence level.

In addition, it has been found that there were no differences with statistical indication attributed to the variable of sex and age among the sample subjects. However, there were differences that are ascribed to the status of the problem for the benefit of subjects with autism disorder.

The present researcher recommends conducting much more research and comparison on a bigger sample that includes much more representation of those mentally and physically retarded children in different ages, sexes, and statuses.

CONCLUSIONS AND RECOMMENDATIONS

This study has shown that the subjects of the study have a problem of eating sweets and sugars. This demonstrates that children, overall, are alike in showing preferences to sugars and sweets. The results also show that children with autism have a problem in wasting a long time at mealtimes exceeding 45 minutes. This result matches the studies that discussed the time that the child with autism spends in eating. This result may also illustrate that children with autism have a problem in chewing, or swallowing, or in moving the tongue, thus reaching to the fact that they require a longer time. In addition, it was clearly evident that children with mental retardation have

REFERENCES

- Bandini L. G, Anderson S.E, Curtin C, Cermak S, Evans E.W, Scampini R., Maslin M, & Must A. (2010). Food selectivity in children with autism spectrum disorders and typically

- developing children. *National Institutes of Health*, 157(2), 259-64.
- Catherine, M. Gale, S. E., & Eric R. (2011). Functional Assessment and Behavioral Intervention for eating Difficulties in Children with Autism: A study Conducted in the Natural Environment Using Parents and ABA Tutors as Therapists. *Journal of Autism & Developmental Disorders*, 41(10), 1383.
- David E. K., & Johnny L. M. (2004). Assessment of eating and Mealtime Behavior Problems in Persons with Mental Retardation. *Journal of behavior Modification*, 28(5), 638-648.
- Genevieve Nadon, Debbie E.F, Winnie D., & Erika, G. (2011). Association of Sensory Processing and eating Problems in Children with Autism Spectrum Disorders. *Autism Research and Treatment*. doi: 541926,8.doi:10.1155/2011/541926.
- Kerwin, M.E. Eicher, P.S., & Gelsinger, J. (2005). Parental Report of eating problems and gastrointestinal symptoms in children with pervasive developmental disorders. *Children's Health Care*, 34(3), 217-234.
- Koepfen, J.M. (2010). Autism: Eating Issues and Picky Eaters. Retrieved May 2, 2011 from:<http://thinkingautismuide.blogspot.com/2010/07/autism-issues-and-picky-eaters.html>
- Lukens, C. T., & Linscheid, T. R. (2008). Development and validation of an inventory to assess mealtime behavior Problems in children with autism. *Journal of Autism and Developmental Disabilities*, 1(38), 342-352.
- Martins Y, Young RL, & Robson DC (2008). Eating and eating behaviors in children with autism and typically developing children. *National Institutes of Health* 38(10), 1878–1887. doi: 10.1007/s10803-008-0583-5
- Matson, D. E. Kuhn (2001). Identifying eating problems in mentally retarded persons: development and reliability of the screening tool of eating problems (STEP). *Medicine National*, 22(2), 165-72.
- Nadon G, Feldman DE, Dunn W & Gisel E. (2011). Mealtime problems in children with autism spectrum disorder and their typically developing siblings: a comparison study. *National Institutes of Health*, 15(1), 98-113.
- Twachtman-Reilly, J, Amaral, SC & Zebrowski, PC,(2008). Addressing eating Disorders in Children on the Autism Spectrum in School-Based Settings: Physiological and Behavioral Issues. *Language, Speech, and Hearing Services in Schools*. 39, 261-272.
- Volker, VM & Maz, PCM. (2010) . Recent studies of eating problems in children with autism. *Journal of Applied Behavior Analysis*, 43, 155-59.
- Williams, Keith, Seiverling & Laura, M.A. (2011). Eating Problem in Children with Autism Spectrums Disorders. *Journal of Developmental and Physical Disabilities*, 25(1), 27–37. doi: 10.1097/TIN.0b013e3181d10958