Studies on dietary, disease and behavior pattern of the Autistic children of various socio-economic groups.

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ABSTRACT: In this study we have focused mainly different diet, diet modification and observed the effect of behavior pattern of autistic children. This study was a non randomized purposive trial. Evaluation of the result of gluten free and lactose free diet for the treatment of autistic children and observation of the percentage of their behavioral improvement. In addition, Determination of abnormal peptide bonds in the urine sample of selective children to observe their intolerance to lactose and gluten. Here also apply modification of autism diet an alternative food items such as rice powder, leumes, nuts, fermented food and closely monitor their behavior pattern. An improved understanding of dietary intervention for autism and the relation of modified diet to reduce the complications of autism. Dietary modification should be chosen according to the subtype of autism.

I. INTRODUCTION

Autism is a neurodevelopment disorder affecting the communicative and social interactive skills with or without restricted and repetitive behavior patterns. In many cases, children with autism are unable to emotionally bond with their parents or other family members. Autism may be associated with mental retardation, seizures, large head circumference and neuropsychiatric conditions like anxiety. Symptoms of autism typically appear before a child is 3 years old and last throughout life. These risk factors can not cause autism distinctly, these factors associated with one another also with environmental and genetic factors. Some of the different types of autism spectrum disorders including autistic disorder with social interactions, communication, and imaginative play in children younger than 3 years. These children don't have a problem with language. Childhood disintegrative disorder in which children develop normally for at least two years and then lose some or most of their communication and social skills. Attention Deficit Hyperactivity Disorder (ADHD) which is characterized by low level of eye contact, unmindful and have less concentration about surroundings. Autism does not depend on ethnicity, race or socioeconomic condition.

The most important diet change for autism is gluten and lactose free diet. One major issue in the autism and diet connection is gluten. Recent studies show that children who suffer from autism may not be able to properly digest gluten. The theory is that people who suffer from autism cannot properly digest gluten and casein, which is found in foods containing animal fats, such as milk, cheese, butter, yogurt and ice cream and gluten is found in wheat, barley, rye etc. When these foods are not properly digested, they can form peptides, which simulate the effect of an opiate. This causes a reaction in the person suffering from this condition. A recent intervention study showed that gluten and lactose free diet reduces autism symptoms about 69%.Sugar and stimulants like cococa,c offee, tea increases hyperactivity. Several studies has shown that restricted diet of sugar,sugar items and stimulants have decreased ADHD. This type of intervention in Bangladesh has not been yet studied. But a study in united states this dietary intervention reduced autism disorders about 65%.

II. METHODOLOGICAL APPROACH:

1. Study population: This study was conducted among 48 children with asperager's syndrome disorder of 2-8 years old in different selected schools in Dhaka city.
2. Study period: The study was started from February 3rd 2013 and continued to July 20th 2013.During this period a standard and relevant questionnaire was developed, data entry, data management, data analysis and final presentation of the study were also developed.

3. Study area: This non randomized study information from children with autism disorder was conducted in purposively selected schools of Dhaka city   having high concentration of the target population. The study areas include some renowned special student school such as SHAHIC of Mohakhali, CNAC of BSMMU and Proyash school in Dhaka cantonment

4. Sampling and sampling size : Before the main investigation ,a quick and specified field visit to the selected study schools gave an idea about the avilavility of autistic children and their health status, causes of disease etc.

5. Study design: It was a non randomized purposive study. The subjects were selected according to study purpose and objectives.

6. Development of tool : A semi-structure questionnaire was prepared and developed to collect data through face-to-face interview with the subjects' mother as the respondent. The questionnaire was pretested in the study area and revised on the basis of feedback received from field testing.

7. Data verification: The anthropometric data were collected based on standard methods. Body weights were taken through a weight machine. The scale was calibrated to zero reading before each weighting session. Height was taken with a modified tape. Each child's height was taken barefooted.And the MUAC was taken with a MUAC scale in mm

III. RESULT AND DISCUSSION:

From the age distribution study we can say that around 40% of the children were between 48-59 months and 33% children were between 60-71 months in the selected special schools. Most of the autistic children coming to these special schools at above 4 years old. So special care for special children will start around four years this is one of the shortcomings for childrens. Next we focus on frequency distribution on the type of vaccine dose given to the children that around 48% of the child were given pentavalent dose of vaccine. And it was also observed that about 19% were given trivalent dose and 29% were given tetravalent dose. Sex variation among the target group we can observed. In our study 48 autistic children 36 are boy's and 12 are girls. The ratio is 3:1of boys and girls. So according our data 75% children are boys who suffer from autism where as 25% are girls who are suffering from Autism. Father's age at the time of delivery of the child. Parents age also have some correlation with their babies mental ability. Next we have observed diet and its effectivity.

Table 01: Frequency distribution of the special diet and their effectiveness

Diet	helpful	Moderately helped	Possibly helped	No effect	Worse effect	Not used	total
gluten free	2	1	4	2	0	6	15
casein free	4	3	5	0		3	15
candida diet	0	0	0	0	0	0	15
Removed egg	0	3	3	6	2	4	15
Removed chocolate	4	3	5	0	0	3	15
Removed sugar	2	4	4	1	0	4	15
Removed fast foods	3	2	4	2	0	4	15
Removed dairy	2	5	3	0	0	5	15
9.Gluten and casein free	0	2	3	3	0	7	15

we get huge information regarding the special diet maintenance and their effectiveness according to mothers view in reducing autism. From the above table we can say that only 15 children follow special diet to reduce autism behavior. Casein free diet, removed chocolate diet and removed sugar diet are more popular than other diets. According to the mothers they get benefits mainly from casein, chocolate fast foods free diet. Yeast free diet was not used.

Table 02 : Percent Food frequency distribution of the Children by their food intake pattern

Food items	Daily	3-4 days in a week	1-2 days in a week	Once in a week	Rarely	Total
Meat products	39.6	45.8	14.6	0.0	0.0	100
Fish items	20.8	47.9	31.2	0.0	0.0	100
Egg	31.2	29.2	29.4	10.2	0.0	100
Milk and Milk products	50.0	37.5	12.5	0.0	0.0	100
Fruits	20.8	36.0	33.33	9.2	0.0	100
Vegetables	18.8	55.0	18.8	11.0	0.0	100
Pulses	48.0	37.5	14.5	0.0	0.0	100
Fast foods and processed foods	0.0	37.5	35.4	12.5	14.6	100
Chips and Chocolates	10.6	28.4	36.2	8.8	16.0	100
Rice	79.0	21.0	0.0	0.0	0.0	100
Wheat products	11.5	56.9	18.5	13.1	0.0	100

From the table we get the food intake pattern of the studied sample. Here we see that meat intake is around 40% daily in the studied population. Whereas fruits and vegetable intake is 21 %and 19% daily respectively. On the other hand we observe that fast food intake is 37.5% and chips –chocolate in take is 28.4% intake in 3-4 days per week.we also see that they take wheat products (guten containing) around 57% in 3-4 days per week

Table 03 : Percent distribution of mental retardation or illness among blood relatives of the autistic children

Relationship	Schizophrenia	Depression	Others	No
Parents	0.0	0.0	0.0	0.0
Siblings	0.0	0.0	0.0	0.0
Grandparents	16.7	12.5	0.0	70.8
Uncles	10.4	12.5	0.0	77.1
Aunts	2.1	22.9	0.0	75.0

The above table shows the relation of autism and mental illness or retardation among blood relatives. Here, we see that 16.7% have Schizophrenia and 12.5% have depression in grandparents and 22.9% ants have depression of the autistic children.In the biochemical assessment tabulation. we have monitored that blood protein level was tested by 41 sample and the level was high among 30 children. Blood lactose was tested for 31 sample and it was high than normal among 20 children.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.675[a]	5	.003
Likelihood Ratio	18.643	5	.002
Linear-by-Linear Association	11.315	1	.001
N of Valid Cases	48		

From the above tables we can say that birth complications are related with birth weight of the studied group

caesin free * grading of score Crosstabulation

Count

		grading of score				Total
		negligible	mild autism	moderate autism	severe autism	
caesin free	definitely helped	0	0	0	1	1
	moderate helped	1	1	3	0	5
	possibly helped	0	4	3	1	8
	no definite help	1	3	1	0	5
	no use	0	19	8	2	29
Total		2	27	15	4	48

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.059[a]	12	.027
Likelihood Ratio	16.590	12	.166
Linear-by-Linear Association	.819	1	.365
N of Valid Cases	48		

So from the Chi-squre test we can conclude that there is an association between casein removed diet with reducing the autism severity.

IV. DISCUSSION

This trial was done to identify the dietary, behavior pattern, morbidity profile, biochemical profile, Nutritional status of the autistic children and the disease pattern and nutritional knowledge of their mother in the selected schools of Dhaka city through a multi faced survey using a purposive sample of the target population. The information is expected to reduce the knowledge gap regarding these special and disabled children towards the comprehensive and need based approach for them for their sustainable survival. Result reveal that the autistic children need special dietary intervention, special schooling, speech therapy, occupational therapy for their survival in the society.

V. CONCLUSION

Statistics show that one in every hundred individuals in the world suffer from an autism spectrum disorder. And in Bangladesh 1% children of mentally disabled are suffering from autism. According to the estimation of Ministry of Social

Welfare, only a few hundred ASDs have diagnosed among 1.4 million. An issue that is hidden inside the closet' is perhaps the best way one could describe the fate of people suffering from autism in Bangladesh. The most unfortunate part of course, is the lack of research that has been done regarding the field in Bangladesh. Researchers in Bangladesh often term Autism more of a human rights problem rather than a medical problem. The reason behind that is the social conundrum that many have to face due to the neurological disorder. To achieve the Millennium Development Goals, it is necessary to identify Autism in the early age of children and to assure the proper care for better life and for better education. This will ensure their social-emotional and holistic development; otherwise, they may become the burden of family and society as well. The dearth of knowledge is one of the major setbacks, which needs to be worked upon by the concerned officials. This study was conducted to find out the causal factors of autism and to find out the interrelationship with nutritional status and also dietary pattern with autism severity. in some context this study was able to find out correlation of nutritional status and food habit with autism severity more research is needed on this topic in the prospect of Bangladesh. Doctors, psychologists, nutritionists, speech and behavioral therapist have a lot to do in this sector. It is our core responsibility to work for this global and vulnerable issue.

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