Study Of Relation Between Autism And Overweight In Center Of Care Of Childern With Special Need In Ain Shams University

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Abstract

Background: Obesity is a major public health problem and the prevalence of obesity is increasing in all countries. Obesity in children has become a significant health concern, and the prevalence of childhood obesity has tripled over the last twenty years. Data from the National Health & Nutrition Examination Survey (NHANES) indicate that nearly a third of children in the general population are overweight or obese. Autism is associated with abnormal eating habits and sedentary life lead to obesity.

Objective: To determine the frequency of overweight among autistic children, and to study relation to diet, medication, sleep, habitand physical activity.

Methodology: A cross-sectional study included 30 autistic children from the center of care of children with special need, Ain Shams University. All children were subjected to a clinical interview derived from AIN SHAMS Sheet , measuring weight , height, BMI, CARRS and IQ. All ASD children were subjected to the following: Personal data, Birth History, Dietetic History, Family History, Current and Past Medical Information History, Physical activity & sleep, Eating Behaviour Questionnaire, Anthropometric measurements.

Results: BMI showed that 10 cases of autistic children were overweight with high BMI percentile (P =0.43), they were mild autism. 80.0% of ASD children had normal appetite, (20%) of the children had increased appetite. Consumption of one unit of fruits represented 53.3%, 2 unit 6.7%. Consumption of vegetable one unit represented 63.3%, two unit 6.7%,16.7%) was using otomox and (83.3%) were not subjected to drugs. 33.3% was using risperidone and (66.7%) were not subjected.

Conclusion: Autistic children tend to be overweight and obese because of bad eating habit, medication sedentary life.

Keywords: Obesity, autism ,epidemiology , Body Mass Index, Children
Introduction:

Obesity in children has become a significant health concern, and the prevalence of childhood obesity has tripled over the last twenty years. Data from the National Health & Nutrition Examination Survey (NHANES) indicate that nearly a third of children ages (2-19 years) in the general population are overweight or obese.\(^1\)

Evidence from clinic-based studies and nationally representative surveys suggests that children with autism spectrum disorders (ASD) have a prevalence of obesity at least as high as that seen in typically developing children. While significant efforts are underway to understand and treat obesity in the general pediatric population, relatively little work has focused on children with ASD. In general, children who are obese are likely to remain so as adults, and excess weight substantially increases risk for chronic diseases such as diabetes, cardiovascular disease, and certain cancers.\(^2\)

Given the increasing prevalence of ASD, the prevention of secondary conditions associated with obesity in children in this population is a pressing public health issue, with implications for independent living and quality of life.\(^3\)

Objective:

The purpose of this study is to find the frequency of overweight in ASD children and the risk factors that may experience.

Methodology:

Study Design: Cross section study.

The study is a cross sectional case study aiming to study relation between overweight and autism in children.

Subjects:

The study was conducted in center of care of children with special need in Ain shams university representing the over a period starting from March, 2018 to end of August, 2018.

The autistic children were selected on the basis of the following criteria:

Inclusion Criteria:

Patients diagnosed according to DSM VI as having autism

Age range from 5 years - 18 years.

Both sexes
Methods:

All ASD children were subjected to the following:

Personal data: Name, date of birth and age, sex, residency place, order of birth, number and of brothers and sisters. Socioeconomic status is assessed through: parents’ educational level, parents’ job, housing characteristic.

Birth History: including previous miscarriages or stillbirths, health Problems during pregnancy, labor circumstances, and child’s Condition at and after birth General examination.

Dietetic History: including feeding problems and the last day dietary recall Local.

Family History: of medical diseases, epilepsy, developmental problems as ADHD, Language and Speech problems, Intellectual disability and psychiatric problems.

Current and Past Medical Information History:

Physical activity & sleep

Eating Behaviour Questionnaire

CARS and IQ obtained from the patient file

Complete Medical Examination

Anthropometric measurements: Anthropometric measurements are done then plotted against the corresponding WHO Z Score and percentiles growth charts (Height measurement (Ht), Weight measurement (Wt) and Body Mass Index (BMI). The software consisted of three modules: anthropometric calculator, individual assessment, and nutritional survey. Only the anthropometric calculator module was used to calculate the corresponding percentile and Z score for children.

Limitations of the study:

Some caregivers were uncooperative.

Much time was needed for evaluation of one child.

Ethical Consideration:

Approval of the medical ethics committee of the national research center and the ethical committee of the institute for post graduate child hood studies was obtained. A full explanation of the study will be provided to the patients a written consent was taken from the patient or guardians.
Statistical analysis:
The collected data was revised, coded, tabulated and introduced to a PC using Statistical Package for Social Science (SPSS) for windows 5.

Results:
Table (1): Descriptive Statistics (n=30)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age /month</td>
<td>53</td>
<td>170</td>
<td>92.4</td>
<td>31.8</td>
</tr>
<tr>
<td>Weight /kg</td>
<td>18</td>
<td>71</td>
<td>29.1</td>
<td>11.4</td>
</tr>
<tr>
<td>Length /cm</td>
<td>100</td>
<td>156</td>
<td>126.7</td>
<td>11.98</td>
</tr>
<tr>
<td>BMI</td>
<td>11.4</td>
<td>29.2</td>
<td>17.4</td>
<td>4.3</td>
</tr>
<tr>
<td>BMI percentile</td>
<td>1</td>
<td>99</td>
<td>60.1</td>
<td>35.8</td>
</tr>
<tr>
<td>IQ</td>
<td>30</td>
<td>90</td>
<td>57.2</td>
<td>15.5</td>
</tr>
<tr>
<td>CARS</td>
<td>30</td>
<td>61</td>
<td>34.4</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Table (2): Crosstabs BMI percentile & CARS scores

<table>
<thead>
<tr>
<th></th>
<th>Normal BMI</th>
<th>Overweight</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>31</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>35</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>38</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>40</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>43</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>61</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>

X2 = 5.9, P = 0.43

Table (3): Crosstabs BMI percentile & CARS severity

<table>
<thead>
<tr>
<th></th>
<th>Normal BMI</th>
<th>Overweight</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild (30-42)</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Severe (45-60)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>

X2 = 1.5, P = 0.23
Fig. (1) showing the patient whom not perform exercise (23.3%), (76.7%) whom perform exercise.

Fig. (2) 80% of children experience normal appetite.
Fig. (3) Watching TV. (33.3%) (66.7%) were whom not watching TV.

Discussion:

Obesity has been reported to be more prevalent among individuals with mental retardation (MR) compared with the children without mental disability 6.

In the current study body mass index (BMI) show 10 cases of obese autistic children with high BMI with p=0.43 10 cases all 10 cases have mild autism.

Higher, middle and lower socioeconomic class children was (56.8%), (27.3%) and (3.1%), respectively 7,8. These figures, being higher than those reported among Nigerian and South African children, living in similar conditions, may refer to an emerging problem of overweight and obesity especially among children of the higher and middle class families 9,10.

In the current study body mass index (BMI) in autistic, (4.5%) of the children were underweight, (41.0%) had normal body weight, (26.2%) of the children were overweight
and (28.3%) were obese. The prevalence of obesity in females was (30.0%) and (27.4%) in males.

Also, in a study made in Scotland on nine schools (206 children, 150 boys and 56 girls) for ambulatory children and adolescent with mild and moderate intellectual disability, the prevalence of obesity was (36%) 11,12,13.

In this study (80.0%) of the children had normal appetite, (20%) of the children had increased appetite. Consumption of one unit of fruits about(53.3%), 2 unit about (6.7). Consumption of vegetable one unit about(63.3%) two unit (6.7%).

In their study on 85,272 children ages 3-17 from the 2003-2004 National Survey of Children's Health (NSCH) classified Children and adolescents as obese according to CDC guidelines for body mass index (BMI) for age and sex. They found the prevalence of obesity in children with autism was 30.4% compared to 23.6% of children without autism 14, 15, 16.

Conclusion:

Autistic children tend to be overweight and obese because of bad eating habit, medication sedentary life.

References:


دراسة العلاقة بين الذاتوية وزيادة الوزن في مركز ذوى الاحتياجات الخاصة جامعة عين شمس

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الخلفية: من المعروف أن السمنة هي مشكلة صحية عامة كبيرة وأن انتشار البدانة يتزايد في جميع البلدان المرتبطة بالتوحد مع عادات الأكل غير العادية والعقل المستقرة تؤدي إلى السمنة، والتي تستلزم تناول كميات كبيرة من الكربوهيدرات الغذائية والغذاء السكرية.
الهدف: تحديد وتيرة السمنة بين الأطفال المصابين بالتوحد، ودراسة العلاقة مع النظام الغذائي، والأدوية، والنوم، والعادات، والنشاط البدني.

المنهجية: كانت العينة عشوائية للأطفال المتشددين (Autistic children) وقد تم اختيار الحالات في أحد المواقع (مركز رعاية الأطفال ذوي الاحتياجات الخاصة جامعة عين شمس). تم إجراء 30 حالة من خلال 4 أشهر تم إخضاع جميع المرضى لمقابلة سريرية مستمدة وسؤالهم عن قياس الوزن، الطول، مؤشر كتلة الجسم، والعادات الغذائية للطفل ومشاهدته للتناول أثناء الأكل. وقد كان واحدًا من أخوه المصاب بالتوحد، أما أبا وأم وأشقاقه فهي عادة طبيعية، ولم يمارس رياضة أي لا.

النتائج: حوالي 30% من حالات التوحد تعاني من زيادة الوزن و20% يعانون من اضطراب الشهية.

الخلاصة: الأطفال المتلاعدين يميلون إلى زيادة الوزن والبدانة بسبب عادة الأكل السليمة، وعدم ممارسة رياضة.

الكلمات الافتتاحية: الأطفال - مؤشر كتلة الجسم - زيادة الوزن - طيف التوحد