A STUDY ON PREVALENCE OF OBESITY IN PRIMARY SCHOOL CHILDREN IN BASRA CITY

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Abstract

Introduction

Various health crises are emerging day by day among the people but a major public health issue has been becoming obesity or overweight among under 12 years old children since the last few years.

Aim: To estimate the prevalence of overweight and obesity among primary school children in Basra city, aged from 6 to 12 years, To identify any variation as per age and gender.

Methodology

Students have done a research study on a particular city, which is Basra in 2017 for measuring the prevalence of obesity among the primary schooling students. 34 primary schools have been selected and 1020 students are chosen by the researchers from these schools. Among these chosen children, 496 were females and the number of 524 was males. According to their study design, they collected data about gender, age, height, class, body weight of these children. WHO presents a formula to calculate the body mass from this information and researchers took that formula for successful implementation. From the equations researchers come to the point that it divided the data into three categories, which were underweight, belongs to the first category, normal weight in the second category and the last one was overweight or obese category. Researchers are strongly focused on the data about the height and weight of the children to measure the body mass index. They chose the SPSS, version 16 for analyzing statistical data.

Results

In study it is found by the researchers that 53.2% children belonged to the normal category, 11.2% children were in the underweight category and 35.2% children
were in the obese or overweight category. In the standard 1 obesity percentage was 15.32%, in the class 3 it was 34.81% and in class six it was 49.86%. Obesity percentage among the males was 38.7% and among the females was 31.87%. This information clearly present that males became more obese than females. In the result, negative obesity had been found 13.37% and only 6.76% were normal in the study.

**Conclusions:** From our study we concluded that the prevalence of overweight and obesity in primary school children in Basra city was 35.2 %, general males are more obese than females, students in the sixth class are more obese in compare to other classes and obese children are more prone to fail than none obese. In compare to other study in Basra city done at 2005 we found that there is increase in the trend of obesity as the years advance.

**Introduction**

Since the last few years it is seen in the research study that obesity has become a major health crisis among under 12 years old children even in developed countries. Overweight impacts on the psychological and physical health of the children, which finally effects on their cardiovascular system in the future and they also have to face diseases like hypertension, blood sugar, and cancer. Through eating processed food, playing games on the computer, negligence of outdoor games, watching television, obesity increases among the children. This kind of lifestyle is responsible for increasing obesity among the little students. They do not engage in any physical activity, which affects their health. From a research study, the rate of obesity and overweight among children in the US was 11% and 22% respectively and 16.4% and 32.4% were seen in Carolina. The other study shows data about the percentage of obesity and overweight is 40% in Spain and 25.6% in Italy.
Reason behind obesity is not cleared to the researcher but when high calorie food has eaten and energy expenditure is low, it make obese. Different causes are present for this major disease, so it cannot be solved through finding out one single reason.

Genetic factors can be responsible for increasing obesity among the little children. Whether obesity is found in their parents, children may be affected by the same health issues. Finally, it can be said that several reasons like changing environment and lifestyle and cultural preferences are responsible for the outbreak of obesity in the world.

Impact of this disease is very crucial, as it cannot be cured easily. It affects the psychological health and when children reach a certain age they become depressed easily with different little issues. It also affects physical health, which leads to cardiovascular disease, diabetes, and hypertension. Hyperlipidemia leads to future cancer, so it is a very crucial factor for the growing children.

Obesity or overweight is a medical condition where excess body fat is responsible, it affects psychologically, and physically which needs to be checked by the expert opinion. As it leads to life risk in the near future, it should not be neglected by the people. Children are not aware of these future effects, so it is our responsibility to make them understand what should be adopted to change this health issue.

BMI (Body mass index) is use to measure how much a person obese. Here weight, which is measured in kilograms, needs to be divided by the height in meters of the person to find the measurement of BMI. If body BMI exceeds 30kg/m2, it is taken as obesity.

Various diseases are developed for becoming obese that are cardiac diseases, osteoarthritis, and different types of cancers, diabetes, and sleep apnea.

It is found that people become obese because they are leading irregular lifestyle, having high calorie processed food and drinks, lacking of proper sleep, and
neglecting physical activities. It finally leads them to put on weight and in a few days, they become overweight. It is also found in the study that those people, who do not eat much, also become obese for slow metabolism.

Childhood obesity becomes a primary concern to the public health observer as obesity affects negatively on the health of a child. As this obesity outbreak is seen among the children and its unfavorable effects have to be faced by the little children, it concerns public health.

**Classification**

**Body mass index (BMI)** is considered for recognizing obesity in a child from two years old to more than that age. It is measured through dividing the weight in kilograms by the height in meters. BMI is variable with gender and age. Overweight is defined if BMI is crossed the percentage of 85 and obesity is defined when BMI percentage crossed 95. This range has been fixed by the Centers for Diseases Control and Prevention.

**Statistics**

Around 43 million, children are found in the world that is undergoing childhood obesity. Three major North American countries, which are Canada, Mexico, and the United States, are not only facing childhood obesity, but also increasing the rate of this prevalence of the diseases. In the present, obesity rates are not increasing in the US but the percentage of obesity is still high. Research considered in 2010 shows that 18% children of six to eleven years old are obese and 32.4% children at the age of six to eleven are overweight.

**Health Effects of Childhood Obesity**

1-**Immediate health effects:**

Risk of obesity is found in the young generation as they are suffering from high blood pressure and high cholesterol level. It affects their psychological health and
they become depressed easily. Cardiovascular diseases are found in the 70% youth, which is affected by obesity.

2-Long-term health effects:
Obesity finally leads to various kinds of cancer such as colon, kidney, gallbladder, endometrial, and breast as well.

Methodology
In this study, Basra city’s 34 primary school children were engaged. This situation is permitted by the Basra education authority.
The primary school children in Basra city engaged in a descriptive cross-sectional study. The time limit of this educational section was 6 months, which started from 1st October 2016 until 1 April 2017.
An incidental optional school was drawn from a list of these 34 primary schools, which was taken from the Basra education office. Among the selected institutions, researchers used a three-stage study, where students were randomly chosen. The study included 34 primary schools and 1020 students for their research. In these selected students, there were 524 male students and 496 female students.
The agreement of the Basra education authority has been taken

The Studied Variables
Age: 6-12 years from primary schools
Gender: Females and Males
Weight: In Kg
Height: In Meters
Body Mass Index (BMI): As per WHO chart
In this study, the BNI divided into three groups (1, 2, 3)
Group 1 showcase the underweight students
Group 2 showcase the normal weight students
Group 3 showcase the overweight students
The yearly final report of children was based on fail or pass
The class: Students selected were from standards one, three, and six from primary school

The Tools
The researcher included some designed forms for their study purpose. These designed forms presented the nursing college teachers who take their advice and opinions as an expert. Along with this, it involved variables, which were connected with the information about this study.
The researcher of this study was asked to measure the weight and height of every chosen child in the research. This measurement did with the help of height and weight scale. The body mass index has been taken by the matching of height and weight with every type of age from the WHO chart.

Statistical Analysis
The SPSS known as the Statistical Package for Social Science, category 16 was utilized for the motive of the statistical analysis data. The statistical calculation referred to the frequencies, Pearson correlation, percentage and standard deviations.

Result

Distribution of the studied population (students) in relation to variables
In this study, the table represented that an overall number of 1020 primary school children’s were involved here. The student’s age was between 6 to 15 year old, the weight of the students was between 14 to 106 kilograms, the height of children’s was between 1.06 to 1.74 meters, and BMI of the students was 8.79 to 40.39.

Table 4.1.1 Distribution of the studied population (students) in relation to variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Students number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.1.1 Distribution of the studied population (students) in relation to variables

<table>
<thead>
<tr>
<th>Std. Deviation</th>
<th>Mean</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Students number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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4.1.2. Frequency distribution of the studied students according to age

According to the student’s age, the table represented the frequency distribution of this sample. The age sample of the students was 31.7% students in 6 years old, 30.4% students in 8 years old, and 28.7% students in 11 years old. The researcher referred to this sample that 91% children studied with at the age of 6, 8 and 11 and 9% students at different ages who failed.

Table 4.1.2. Frequency distribution of the studied students according to age

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>323</td>
<td>31.7</td>
</tr>
<tr>
<td>7</td>
<td>16</td>
<td>1.6</td>
</tr>
<tr>
<td>8</td>
<td>310</td>
<td>30.4</td>
</tr>
<tr>
<td>9</td>
<td>27</td>
<td>2.6</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>.4</td>
</tr>
</tbody>
</table>
The tables represented that 51.4% were females and 48.6% were males of the studies students. The table represented the underweight student’s percentage where females were 12.78% and males were 9.47%. The table also represented the normal weight children percentage where males were 51.81% and females were 55.34%. Along with this, the overweight student’s percentage was 31.87% females and 38.7% males.

**Table 4.1.3. Frequency distribution of students according to gender and BMI categories**

<table>
<thead>
<tr>
<th>BMI category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Under weight</td>
</tr>
<tr>
<td>11</td>
<td>293</td>
</tr>
<tr>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>1020</td>
</tr>
</tbody>
</table>
Distribution of students according to BMI categories and student's class

The table represented the percentage of the students who were underweight, overweight and the normal weight. The overweight students were 35.2%, the normal weight students were 53.6%, and the underweight students were 11.2%. The researcher represented in this table regards overweight 62.28% of students in the class 1, 34.81% in class three and 49.86% students in class six. Similarly, as regards normal weight 39.12% in class one, 32.34% in class 3 and 28.33% in class six. Similarly, as regards underweight 62.28% in class one, 32.45% in class 3 and 5.26% in class six. It was proved that overweight was more in class six and underweight was more in class one.

Table 4.1.4: Distribution of students according to BMI categories and student’s class

<table>
<thead>
<tr>
<th>BMI categories</th>
<th>First class</th>
<th>Third class</th>
<th>Sixth class</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>9.47%</td>
<td>257</td>
<td>19</td>
<td>496</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>12.78%</td>
<td>290</td>
<td>16</td>
<td>524</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>547</td>
<td>35</td>
<td>102</td>
<td>100%</td>
</tr>
</tbody>
</table>
The association between age of students and BMI

The table represented student age and BMI, which also determines that obesity increases with the growth in age.

**Table 4.1.5. The association between age of students and BMI**

<table>
<thead>
<tr>
<th>Age</th>
<th>BMI</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.556**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>1020</td>
<td>1020</td>
</tr>
</tbody>
</table>

The relation of the BMI category with the final result of the students whether passed the class or failed in the class

The table represented the student yearly result and the student weight.
Table 4.1.6. The relation of the BMI category with the final result of the students whether passed the class or failed in the class

<table>
<thead>
<tr>
<th>Category</th>
<th>Final Result</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.138** Significant</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>1020</td>
<td>1020</td>
</tr>
</tbody>
</table>

Discussion
The study of Prevalence of obesity in primary school students of Basra City showed that the students were underweight by 11.2 percent, 53.6 percent were weighing normal weight and 35.2 percent were overweight and suffering from obesity. However, the study done by Samira in the Basra city primary school in 2005 showed 19.6 percent students were suffering from obesity. It concludes the fact that an increasing percentage of primary students are suffering from obesity.
Another study in urban areas of Northern Islamic Republic of Iran in 2006, selecting the age group of 7 to 12 years primary school students, showed that the prevalence of obesity and overweight was lower in girls by 5.8 percent while with boys by 12.3 percent with overall percentage of 18.1 percent. Therefore, it shows a clear view of increasing prevalence of obesity among boys compared to girls.

A study in Union territory of Puducherry, India showed the students of the primary school were suffering from obesity and were overweight with 6.53 percent. The highest prevalence was found in the Mahe region in India, which was 13.35 percent. Both results are lower compared to our study. It has been observed that the Indian study displayed prevalence of obesity and overweight among females in private schools and urban areas more than boys in the same regions did. However, reverse outcomes have been observed in our study.

The research on frequency of obesity and overweight in Port Said city primary school showed a close rate of obesity and overweight among the students, that is, 31.2 percent. The study in this city also depicts that the tendency of obesity increases with age. The prevalence of obesity reaches the highest peak among the 10-12 years age group, which is approximately 50 percent according to the study.

**Conclusion**

- As per the study it is concluded that the prevalence of overweight and obesity in primary school students of Basra City was 35.2 percent.
- The tendency is high in males as compared to females.
- The students of sixth grade are suffering from obesity more than the other grades.
- Obesity might be another reason to fail among the students compared to others.
- The prevalence of obesity has inclined as compared to the study in 2005.

**Recommendation**
To decline the growth of overweight and obesity in primary school students, it is needed to include multi-faceted approaches through the contribution of families, schools, communities, industry, and the government. It must be managed with equal efforts as national antismoking solutions.

To alleviate opportunities for students of primary schools to participate in physical activities and follow healthy diet

To execute plans for suggesting nutritional standards for all beverages and food within school premises

To increase the level of vigorous physical activity among primary schools students for at least 30 minutes every day. Further, physical education classes of 30-60 minutes should be added.

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References


