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A Survey Study to Determine the Prevalence of Obesity Among Primary School Students in Baqubah District

Amjad Adham Ahmed [1], Ali Shakir Al-Ezee [2], Abdulrahman Subhe Ali [3]
[1,2] Lecture PhD, in biology, Department of Biology, College of Education for Pure Science, Diyala University, Diyala, Iraq.
[3] Biology, Department of Biology, College of Education for Pure Science, Diyala University, Diyala, Iraq

Email: amjad.adham@uodiyala.edu.iq [1], ali.shakir@uodiyala.edu.iq [2], abdalrahmansubhi88@gmail.com [3]

Abstract. The current study aimed to know the prevalence of overweight and obesity rates among primary school children in Baquba district. The total number of samples was (105) samples (59 males and 46 females). The samples were obtained from children in primary schools from a special form prepared by the researcher that included (Sex, age, height, weight, mass, residence). The results show that the number of overweight males is higher than the number of overweight females, as the number of males was 35 males, representing 59.32%, while the number of females was 24 females, representing 40.67%. The number of obese males is higher than the number of obese females, as the number of males was 32 males, representing 69.56%, while the number of females was 14 females, representing 30.43%. The results showed that the highest rate of overweight was among males living in the city, where the number of those infected was 23 males, and that the highest rate of obesity was among males living in the city, where the number of those infected was 21. We note that the lowest rate of infection was among females suffering from obesity living in the village, where the number of those infected was 4 females, representing 8.69%.

Highlights:

1. Higher overweight and obesity rates in males than females.
2. Urban males have the highest overweight and obesity prevalence.
3. Rural females have the lowest obesity rate (8.69%).

Keywords: obesity , Overweight , primary schools

Introduction

Obesity is a widespread health problem in developed countries resulting from high-energy nutrition that exceeds the body's needs, and from several other causes, including those related to the individual's surrounding conditions, genetic factors, and some pathological conditions such as low secretion of thyroid hormones. However, the individual's surrounding conditions have the greatest role in the rapid increase in the spread of obesity. Obesity has become common in a short time in developing countries

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after their economic situation improved, such as in Eastern Europe and the Middle East [1].

Obesity is physiologically a low-grade inflammatory state in the body because it leads to the production of adipokines from adipose tissue, which include Plasminogen activator inhibitor (PAI-1) Leptin, and reduces the level of the anti-inflammatory hormone adiponection, which in turn leads to many pathological conditions [7].

Childhood obesity is associated with many diseases and deaths in adulthood, including type 2 diabetes, high blood pressure, high blood cholesterol, cardiovascular disease, heart attack, and arthritis, so it must be treated and the concerns that threaten the health of society must be averted [12].

Childhood obesity is one of the most significant health risks of the twentieth and twenty-first centuries, as it has spread widely among children over the past three decades. It is a phenomenon described as many diseases due to multiple factors that cause it [2]. According to statistics from the World Health Organization. [13]. more than 42 million children in the world under the age of five are classified as obese, and more than 200 million children appear to be obese. The number of deaths due to complications of obesity is estimated at 2.8 million people annually in the world.

In Europe, from 1980 to the present years, the prevalence of obesity among children has increased to reach 20%, and a third of the percentage suffers from obesity. The World Health Organization indicated that the percentage of obese children in Europe aged 5-9 years reached 21.3% of males and 23.3% of females [4]. In Iraq, in Basra Governorate, in 2011, the percentage of obese children was 13.6%, and those who were overweight were 10.5%. The prevalence of overweight and obesity was almost equal among males and females [9]. In Kirkuk, in 2013, the percentage of those who were obese was 22.3% [5].

The Study aim to:

The aim of the study is to determine the prevalence of overweight and obesity among primary school children in Baqubah District.

Materials and Methods

The current study was conducted on primary school students from the first to the sixth grade, aged 7-12 years, within Baqubah District. The study included a number of

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mixed schools males and females. The total number of study samples was 105 samples 59 males and 46 females. The samples were obtained from children in primary schools from a special form prepared by the researchers, including (gender, age, height, weight, mass, residence). Then a scale was used to measure weight and a length measuring tape. After that, the body mass was calculated using the equation: BMI=(weight(kg))/((height(m)))

Then obesity was classified into overweight and obesity depending on the body mass index according to [14].

Results and Discussion

The effect of age and gender on obesity

Table (1) shows the effect of the relationship between age, gender and the incidence of overweight, as it was shown that the highest incidence of overweight was in males within the age group (8 years). We find that the gender of the patient has an effect on the incidence rate, as the number of infected was (10) males out of the total, with the incidence rate being 16.94%. At the second level, it was within the age group (12 years), as the number of infected males was (9) males out of the total, with the incidence rate being 15.25%. We note that the lowest incidence rate was in females within the age group (12 years), with the incidence rate being 3.38%

Table No. (1) shows the effect of the relationship between age and gender and the incidence of obesity, as it was shown that the highest incidence of obesity was in males within the age group (11 years). We find that the gender of the patient has an effect on the incidence rate, as the number of infected people was (9) males out of the total number, with an incidence rate of 19.56%. We note that the lowest incidence rate was within the age group (8 years), with an incidence rate of 2.17%

also noted from Table No. (1) that the number of overweight males is higher than the number of overweight females, as the number of males was (35) males, representing 59.32%, while the number of females was (24) females, representing 40.67%.

also noted from the table that the number of obese males is higher than the number of overweight females, as the number of males was (32) males, representing 69.56%, while the number of females was (14) females, representing 30.43%.

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Table No. (1) shows the effect of age and gender factors on overweight and obesity.

Sex / Age	Obesity				Overweight			
	Female		Male		Female		Male	
	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
7	3	6.52%	7	15.21%	5	8.47 %	6	10.16 %
8	1	2.17%	3	6.52%	6	10.16%	10	16.94%
9	3	6.52%	7	6.52%	5	8.47 %	6	10.16 %
11	2	4.34%	9	19.56%	6	10.16%	4	6.77%
12	5	10.86%	6	13.04%	2	3.38 %	9	15.25%
The Total	14	30.43%	32	69.56%	24	40.67%	35	59.32%

The effect of housing on disease incidence:

Table No. (2) shows the effect of the relationship between housing, gender, and the incidence of overweight, as it was shown that the highest incidence of overweight was among males living in the city, as the number of those infected was (23) males out of the total, with the incidence rate being 38.98%.

Table No. (2) also shows the effect of the relationship between housing, gender and the incidence of obesity, as it was shown that the highest incidence of obesity was among males living in the city, where the number of those infected was (21) males out of the total, with an incidence rate of 45.65%. We note that the lowest incidence rate was among females suffering from obesity who live in the village, where the number of those infected was (4) females, with a rate of 8.69%.

also noted from Table No. (2) that the number of overweight males is higher than the number of overweight females, as the number of males was (35) males, representing 59.32%, while the number of females was (24) females, representing 40.67%. It is also noted from the table that the number of obese males is higher than the number of overweight females, as the number of males was (32) males, representing 69.56%, while the number of females was (14) females, representing 30.43%.

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Table No. (2) shows the effect of housing on overweight and obesity.

Sex / Housing	Obesity				Overweight			
	Female		Male		Female		Male	
	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
City	10	%21.73	21	%45.65	12	%20.33	23	%38.98
Village	4	%8.69	11	%23.91	12	%20.33	12	%20.33
The Total	14	%30.43	32	%69.56	24	40.67%	35	%59.32

Discussion:

Obesity means the presence of accumulated fat in the body. Studies have found that there is a link between central obesity in children and diabetes and cardiovascular diseases. Therefore, many countries conduct health examinations for school children to prevent body obesity and central obesity [6].

The current study showed that, with regard to the gender factor, males are more susceptible to infection than females. The reason, according to the researchers, is not due to anatomical or functional aspects in the increased incidence of obesity. It is noted from the results of the study that a large number of factors interfere with obesity, and perhaps some of them are the cause of infection. This is consistent with the study [10].

indicated [8] that obesity may result from non-pathological causes as a result of incorrect behavioral factors in lifestyle such as unhealthy nutrition and the type of food consumed, low physical activity rate or from stress and anxiety, electronic entertainment and television, and the effect of lack of sleep and staying up late, which are factors leading to it.

indicated [11] that females have a narrower waist than males with more central obesity in males compared to females, and the accumulation of fat in the center of the body is often caused by negatively influencing factors such as low physical activity and unhealthy nutrition, in addition to hormonal and genetic factors. The genetic factor of overweight and obesity from both parents affects children's overweight and obesity. Therefore, overweight and obesity in both parents is inherited at a greater rate to children than in the case of one parent, as genes are transmitted from parents to children. While indicated [3] that 80% of children suffer from obesity if at least one of the parents suffers from obesity.

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The results of the study showed that the rate of obesity among children living in the city is higher than among children living in the village. Researchers believe that the reason behind this is that unhealthy behavioral habits in the city lead to obesity directly or indirectly.

The results of the current study are consistent with the results of the study of [9] which indicated that urbanization contributed to a rapid increase in the prevalence of obesity among city children compared to village children. There have been major changes in lifestyle, as individuals have become more interested in eating fast food and canned foods that contain preservatives that can cause many diseases, and consuming sweetened drinks daily, and the availability of means of transportation such as cars and bicycles instead of walking to schools, with the importance of the genetic factor.

Conclusions

Obesity may occur more often as a result of unhealthy factors that depend on wrong behavioral habits practiced by the individual, and it may occur less often as a result of pathological and genetic factors. Therefore, the individual can control the percentage of obesity in the body by changing the wrong behavioral habits that he practices with healthy habits.

The obesity rate in the city is higher than in the village as a result of following wrong behavioral habits in daily life in the city, including entertainment and unhealthy nutrition.

Recommendations

We recommend continuing to conduct statistical and non-statistical research on obesity due to its widespread prevalence and seriousness among children in order to gain a better understanding of it and reach effective solutions to reduce and treat it.

We recommend conducting statistical research on the impact of other causative factors such as (genetic factors, psychological state, physiological factors including hormones and other factors that we did not discuss).

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