

Prevalence of morbid obesity among the white English people compared with that in the Jordanians

Abstract

Overweight and obesity is a worldwide problem, its prevalence is significant among all ages. Globally, the obesity has nearly tripled since 1975. In England, adult's survey aged 16 and over showed that, 61.4% of people were either overweight or obese. The present high prevalence of obesity in the UK is mainly attributed to the widely used takeaway food. This project was designed to study the prevalence of morbid obesity among white English people, and compare it with that in the Jordanian population, where the race, culture and food habits are different. Morbid obese and normal bodyweight male and female of white English and Jordanian people were selected randomly. They were divided into four groups. One group was children aged -12 years. Second group was teen agers, 13 - 19 years old. Third group was young adults aged 20-45 years. Forth group was people aged 46 years and over. Prevalence rate of morbid obesity in each group was counted as a percentage of the morbid obese individuals related to the normal body weight people.

In the white English people, the morbid obesity prevalence rate is nearly identical in both sexes within similar age groups. There is as well, a similar linear progressive rise in the prevalence rate from childhood up to the elderly age in both sexes. In the Jordanians, The prevalence rates are nearly similar in both sexes among children, teen agers and young adults groups. The prevalence is relatively low in children and teen agers; it rises sharply in the young adults and older people. Old ladies have higher prevalence rate than that in the men.

Overweight children and adolescents associated with parental obesity were noticed among the white British and Jordanian people.

This study showed that, the morbid obesity prevalence is higher in the white English people than in the Jordanians in both sexes within all age groups. These findings coincide with the previously reported data on the prevalence of obesity in the UK and Jordan.

The study emphasised the importance of watching body weight at all ages to avoid the obesity associated diseases.

Keywords: obesity, prevalence of morbid obesity, chronic diseases, obesity among the white English people, obesity among the Jordanian people

Introduction

Overweight and obesity are defined as an abnormal or excessive fat accumulation (about 20% of normal human body weight and over) that may impair health.

Overweight and obesity is a worldwide problem; its prevalence is significant in children, adolescents, and adults.¹ According to the world health organization, the obesity has nearly tripled since 1975. In 2016, there were more than 1.9 billion overweight adults (18 years and older), and out of these, more than 650 million were obese.²

Obesity is usually associated with the risk of getting many disease such hypertension, high serum cholesterol; coronary heart disease; stroke; type 2 diabetes; gallstones; sleep apnea; arthritis; and some cancers.³ Body mass index (BMI) scale is used as an indicator for the overweight and obesity. The person passes in various stages of obesity when his BMI is 30 and over. Obesity can be classified into three classes as follows.⁴

Class 1, low-risk obesity; the BMI is 30.0 to 34.9.

Class 2, moderate-risk obesity; the BMI is 35.0 to 39.9.

Class 3, high-risk, morbid obesity, the BMI is 40.0 and over.

Obesity is also assessed by the waist size

Women with a waist size greater than 35 inches (89 centimetres) and men with a waist size greater than 40 inches (102 centimetres) are classified under morbid obesity. Such people usually have apple-shaped bodies where the waist is bigger than the hips.⁴ Obesity related problems at different BMIs vary according to the ethnic background. Some people from Pacific Islands have more muscle while Asians are smaller and have less muscle.⁵

The essential cause of overweight and obesity is an energy imbalance between the consumed and expended calories; obesity is also driven by genetics.⁵

It is astonishing, how the majority of a slim and fit white English people have changed to an overweight and obese people within the last few decades; the present high prevalence of obesity in the UK is mainly attributed to the widely used takeaway food.⁶

This study was planned to investigate the prevalence of morbid obesity among white English people, and compare it with that in the Jordanians, where the race, culture and food habits are different.

Participants and methods

This study was conducted in Sheffield city, South Yorkshire, UK, and Amman city, Jordan; in 2018 during summer time. It was performed on the white English and Jordanian people. The surveyed individuals in this study were ranging between 3 years old children and elderly people. Normal body weight and those with morbid obesity were the only selected and counted individuals among people wandering in roads and shops. People were categorized into four groups according to their age as follows:

- Children, 3 to 12 years old
- Teenagers, 13 to 19 years old
- Young adults, 20 to 45 years old
- Middle aged and elderly people (46 years old and over).

Within each age group, males and females were counted separately. With the naked eye, spotting individuals carrying huge body masses relating to their length was not a big deal. For the reason of impossible application of BMI scale among wandering people, and the large surveyed number over two different countries; the age and weight of morbid obese people had been estimated by two individuals of the research team at a time. The team members were well trained on spot diagnosis of the age and type of obesity with their naked eyes. Helping the process of estimation is the wearing of light summer clothes.

Morbid obesity was identified through the following criteria. Morbidly obese people have a very large body mass related to their length, with a sagging body and rounded chubby face; they have a slipped belly and great waist size (waist is bigger than the hips).² Suspicious ages and weights were omitted.

Collectively, a total of one thousand normal and morbidly obese males, and one thousand females were counted within each age group. Percentage of the morbid obesity among either sex within each age group was then calculated.

Results

Prevalence of morbid obesity among the white English males

Children have the lowest prevalence rate of morbid obesity; it is at (4.4%). Teenagers have morbid obesity prevalence rate at (17.4%). Young adults show prevalence of morbid obesity rate at (45.8%). These figures fall far behind those in the 46 years and over, in which the morbid obesity rate is at (64%) (Figure 1).

Prevalence of morbid obesity among the white English females

Children have the lowest rate of morbid obesity prevalence; it is at (5.1%). Teenagers have higher morbid obesity prevalence rate, which is at (21.8%). Young adults show higher prevalence rate of morbid obesity; it is at (49.6%). The 46 years and older women show far higher morbid obesity rate than other groups, it is at (61%), (Figure 2).

Comparison of morbid obesity prevalence rates among all age groups of the white English males to that among the white English females

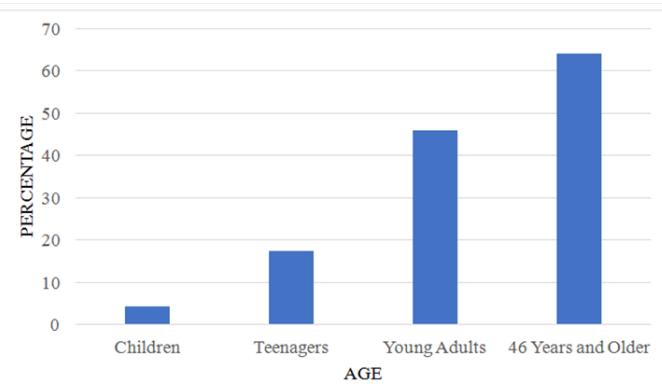


Figure 1 Prevalence of morbid obesity in the white English males.

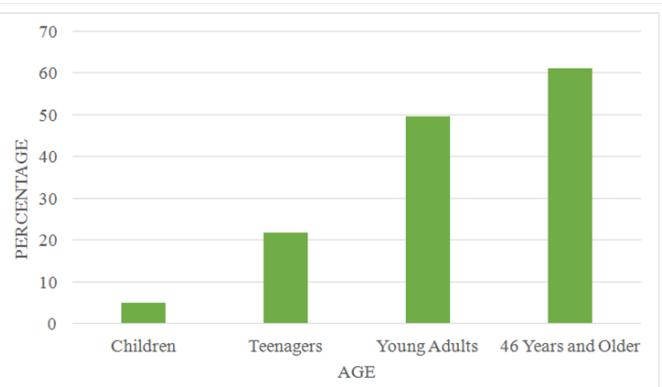


Figure 2 Prevalence of morbid obesity in the white English females.

As seen in Figure 3; the morbid obesity prevalence rate is nearly identical in both male and female similar age groups. There is a similar progressive rise in the prevalence rate from childhood up to the elderly age in both sexes. Old age group shows extremely high prevalence rate, it is nearly as 12 times that in children.

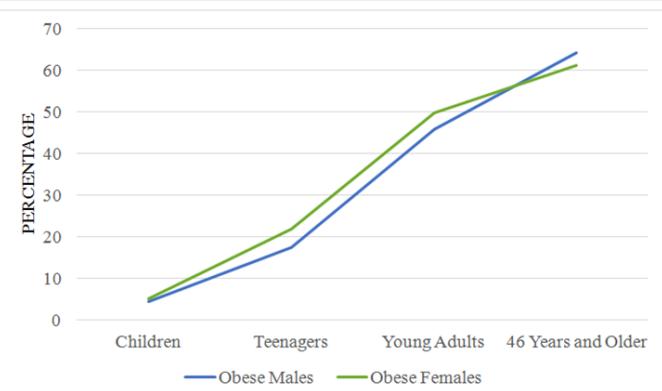
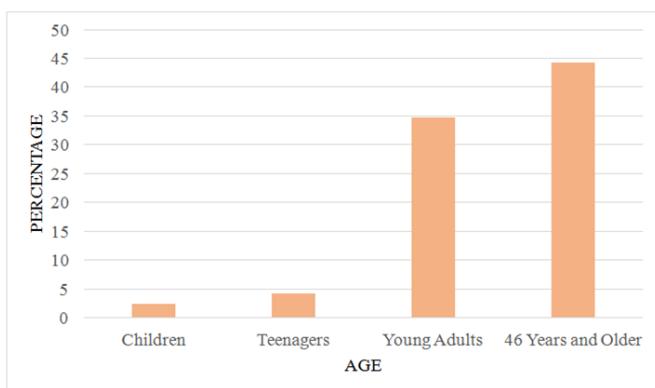


Figure 3 Prevalence of morbid obesity in the white English males and females.

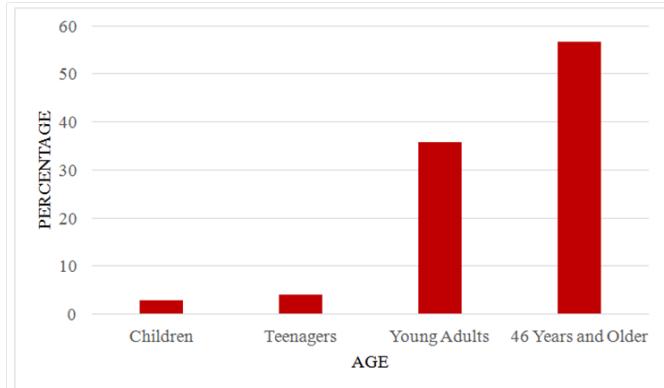
Prevalence of morbid obesity among the Jordanian males

The prevalence rate is 2.5% in children, and is 4.2% among the teenagers. There is a sharp rise in the prevalence rate in young adults, it is 34.8%. The prevalence rate among the 46 years old and over is higher than that in all other age groups; it is 44.2% (Figure 4).

**Figure 4** Prevalence of morbid obesity in the Jordanian males.

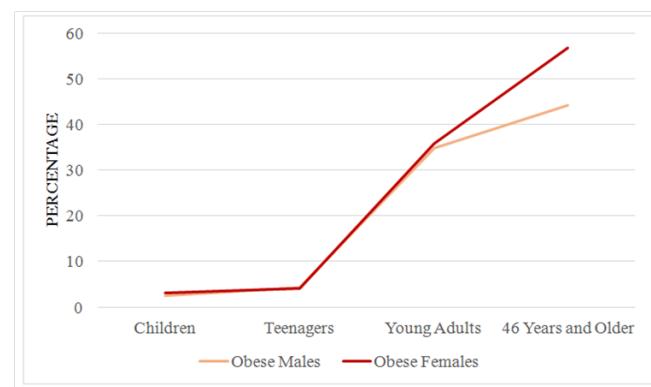
Morbid obesity prevalence among the Jordanian females

Children have prevalence rate at 3%. The prevalence rate is slightly higher in teen agers, it is at 4.1%. In young adults, the rate is sharply increased, it is at 35.8%. In 46 years old and over ladies, the rate is too high; it is at 56.7% (Figure 5).

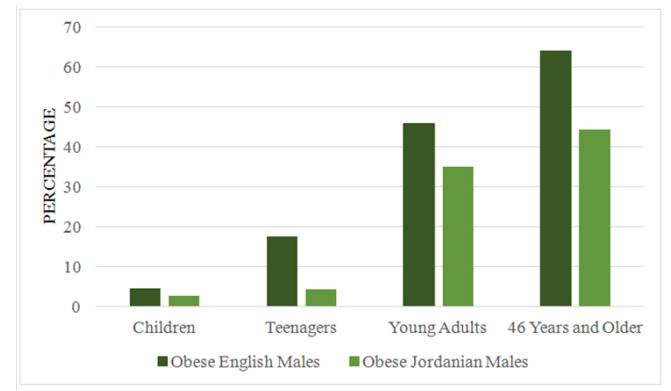
**Figure 5** Prevalence of morbid obesity in the Jordanian females.

Comparison of the morbid obesity prevalence rates among the Jordanian males to that in Jordanian females

The prevalence rates are nearly similar in both sexes among children, teen agers and young adults groups. The prevalence is relatively low in children and teen agers; it rises sharply among the young adults and in the elderly people. Old ladies have higher prevalence rate (56.7%) than that in the men (44.2%), (Figure 6).

**Figure 6** Prevalence of morbid obesity in the Jordanian males and females.

Prevalence of morbid obesity among the white English males compared with that in the Jordanian males (Figure 7).

**Figure 7** Prevalence of morbid obesity in the white English and Jordanian Males.

Prevalence among children: white English is 4.4%, Jordanian is 2.5%

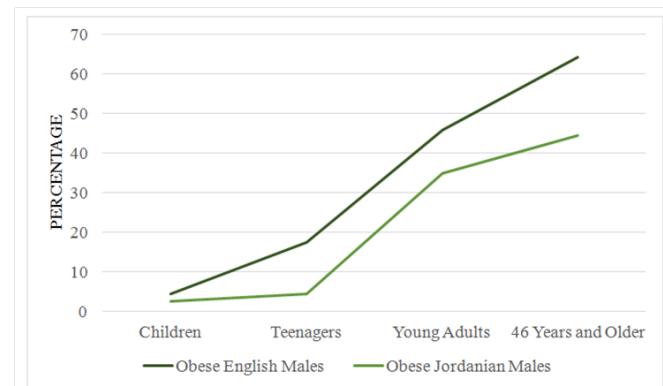
Prevalence among teen agers: white English is 17.4%, Jordanian is 4.2%

Prevalence among young adults: white English is 45.8%, Jordanian is 34.8%

Prevalence among elderly people: white English is 64%, Jordanian is 44.2%

Prevalence figures show that, the morbid obesity is higher among the white English children than in the Jordanians. In the teen agers, the prevalence is four times higher in the white English teen agers than in the Jordanians. The prevalence among the young white English adults is 11% higher than that in the Jordanians. Prevalence among the white English elderly people is 19.8% higher than that in the Jordanians.

Linear graph shows that the white English people develop morbid obesity right away from childhood, and the prevalence increases progressively with age. In comparison with the Jordanians, the latter shows minimal prevalence rates among children and teen agers; the prevalence rises up among the young adults and elderly people, but still, the rates are lower than those among the white English people (Figure 8).

**Figure 8** Prevalence of morbid obesity in the white English and Jordanian Males.

Prevalence of morbid obesity among the white English females compared to that in the Jordanian ladies.

Prevalence rate among children: In the white English is 5.1%. In the Jordanian is 3%.

Prevalence among teen agers: In the white English is 21.8%. In the Jordanian is 4.1%.

Prevalence among young adults: In the white English is 49.6%. In the Jordanian is 35.8%.

Prevalence among elderly people: In the white English is 61%. In the Jordanian is 56.7%.

From these figures it seems that the prevalence is nearly equal in children. The prevalence is five times higher in the English teenagers than in the Jordanians. The prevalence is 13.8% higher in the English young adults than in the Jordanians. In the elderly English ladies, the prevalence is 4.1% higher than that in the Jordanians (Figure 9).

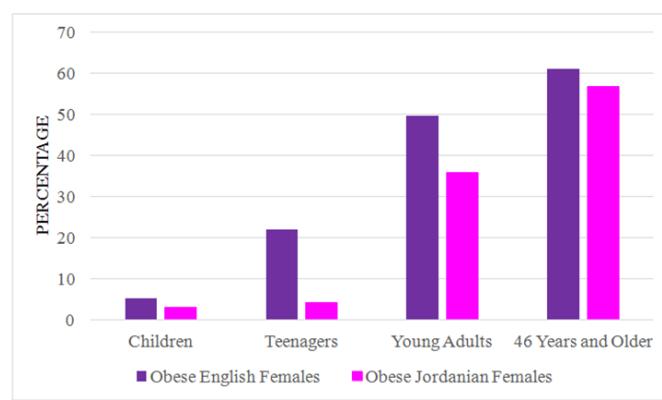


Figure 9 Prevalence of morbid obesity in the white English and Jordanian Females.

Linear graph shows that the prevalence of morbid obesity in the white English females rises up progressively; it is in a positive linear association right away from childhood up to old ages. In the Jordanians, the prevalence rises up progressively in a positive linear association only after the teen age onwards (Figure 10).

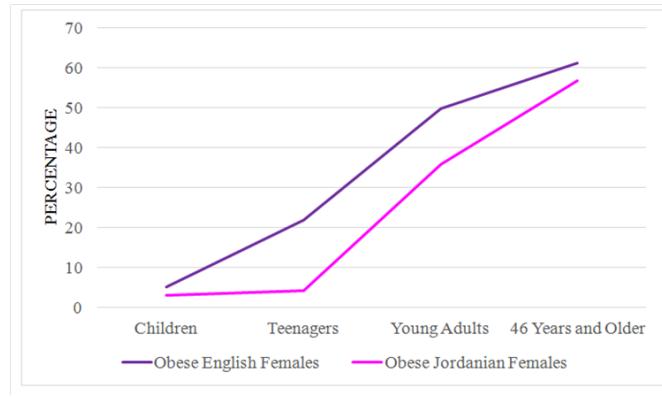


Figure 10 Prevalence of morbid obesity in the white English and Jordanian Females.

It is noticed that a morbid obese couple are usually accompanied by a morbid obese children and adolescents.

Body fat distribution in obese females is mainly in the shoulders, upper arms, buttock, belly and thighs.

Fat in obese males is uniformly distributed along their bodies. Morbidly obese males have a slipped large belly.

Discussion

Obesity is a growing worldwide problem; in 2000, there were about 300 million obese adults worldwide, that number has continued to increase since then.⁷ In 2016, there were about 41 million overweight or obese children under the age of 5, and over 340 million overweight or obese children and adolescents aged 5-19.² England survey done in 2016 on adults aged 16 and over revealed that 61.4% of people were either overweight or obese.⁸ Obesity is a risk factor for many chronic conditions including hypertension, hypercholesterolemia, heart disease, stroke, diabetes, certain cancers and arthritis. There is as well, a particular concern about a potential increase in type 2 diabetes mellitus related to the increase in overweight among children.⁹

In this study, the prevalence of morbid obesity among the white English males and females were nearly identical within similar age groups. A low prevalence rate was noticed during childhood; it rose steeply and progressively among the teen agers, young adults and elderly people. The prevalence rate was at the highest level among the 46 years and over age. These findings are not surprising; it coincides with a report stated that, the UK is now the fattest nation in Western Europe; it is the sixth worst for obesity across the globe. The Organisation for Economic Co-operation Development (OECD) showed that the obesity and overweight levels in the UK have risen by 92 per cent in just over two decades; it is the steepest rise among countries with an obesity problem.¹⁰

In the Jordanian males and females, the prevalence rates of morbid obesity were identical in similar age groups among children, teen agers and young adults. While among the 46 years and over, the prevalence was higher in women than men.

A low prevalence rate of morbid obesity was seen among children; the prevalence rate remained low among the teen agers as well. The prevalence then rose steeply and progressively among young adults and in the 46 years and over age. These findings are supported by a previous study issued by the WHO which showed that, the prevalence of obesity was high among Jordanian women aged 15-49 years.¹¹ Another study done on 25 years old and over northern Jordanians showed that the prevalence of obesity was higher in the women than men. It was 28.1% for men and 53.1% for women.¹²

Swinburn et al.¹³ stated that (In low-income countries, obesity mostly affects middle-aged adults (especially women); whereas in high-income countries it affects both sexes and all ages. These findings go with our survey on the white English people which showed that the prevalence of morbid obesity were high among all age groups. Vv. in Jordan (low-income country), the prevalence was low among children and teen agers; it greatly increased in young adults and elderly people (Figure 8 & 10).

Variation in obesity prevalence can be attributed for many factors. Race/ethnicity is a crucial reason in obesity; in fact, fatness is a disease driven by genetics.⁵ The differences in obesity prevalence between the white English and the Jordanians can be explained on that fact.

Imbalance between energy intake and energy expenditure is another substantial factor for obesity and overweight.² A worldwide increases in obesity seems to be driven by changes in the global food system; it is mainly through, more production of processed, affordable, and effectively marketed food than ever before.¹³ In the English community, eating large amounts of processed or fast food that is high in fat and sugar, eating junky foods and sweets, snacking, drinking too many sugary drinks and drinking too much alcohol is

avital reason for obesity and overweight.¹⁴ Vs. in Jordan, the majority of population eat homemade food; people usually consume two or three meals a day. Fruits, vegetables, bread, rice, lamb, olives, olive oil, thyme, yoghurt, tahini, garlic, onions, pickles, sage and mint form the major ingredients of their food.¹⁵ Meat, being expensive, is not an essential part of the food especially in the middle class and poor families. It is argued that the Jordanian food is healthier than the English diet; which is a good reason that explains the lower Jordanian prevalence of morbid obesity.

Environmental, cultural, economic, and social factors are also implicated in the obesity prevalence.^{16,17} Jordan is one of the Middle East countries, characterised by its mountain land and moderate climate. Most of the old generation are illiterate farmers living simple life. A wide range of people are of middle income earners. The Jordanian social links are strong. The transport facilities are not that efficient as in Europe. Most of the people walk a lot.

Old Jordanian ladies practice limited motility; they spend most of their time at homes involved in domestic work. Families in general are not keen about the standard of nutrition; they are usually satisfied with any available food. This minimises the overfeeding possibility among children and teen agers.

The above standard of Jordanian's life is behind the low prevalence of morbid obesity among children and teen agers. It also explains the lower morbid obesity prevalence among all Jordanian's age groups compared with that in the white English age groups. The higher prevalence of morbid obesity among old Jordanian ladies compared with males is attributed to their limited motility.

Overweight children and adolescents associated with parental obesity are noticed among the white British and Jordanian people. That observation was previously recorded in the Scottish population¹⁸ and Iranians.¹⁹ The association was attributed to the shared family environment; the attitudes and behaviours of adults are likely to influence their children's weight.

Conclusion

This study showed that the morbid obesity was prevalent among children and teen agers; the prevalence greatly rose among young adults and elderly people. Since this type of obesity is associated with wide range of dangerous diseases; a wide public education is required for using healthy and balanced diet, practicing physical activities, and changing people's habits and lifestyles. Essential controls of the health and social care systems are required.

In the USA, a brilliant recommendation was made by the House of Commons Select Committee on obesity; they suggested that the body mass index (BMI) of every school child should be measured each year and the result sent home to the parents.²⁰ That is a good idea which should be practiced globally.

Finally, careful supervision should be applied on industries to produce healthier food. Further precise survey on the morbid obesity prevalence is required through the use of the body mass index (BMI) scale.

Acknowledgments

The authors are grateful to Al Balqa Applied University, Al Salt, Jordan; for the support and encouragement.

Conflicts of interest

The authors declare there is no conflicts of interest.

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