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Original Article

Awareness of Obesity and its Risks among Qassim University Students: A Cross-sectional Study

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Abstract

Obesity is a preventable and treatable health issue. This study aimed to know the level of awareness of obesity and its risks among Qassim University students to see how many students pay attention to the dangers of obesity. The duration of this cross-sectional study is 8-10 weeks, and the subjects were the students at Qassim University. An online questionnaire was deployed for 4 weeks using Google Forms. The link to the questionnaire was distributed through social media like WhatsApp, Telegram, and Twitter. At the end of 4 weeks, data collected were tabulated and analyzed. In this study, 508 students were selected out of which 203 were from 18 to 20 ages and 176 from 21 to 24 ages and 65 from 25 to 28 and 60 others responded. Of the study subjects selected, 325 females and 179 males, the levels of the students 144 level 1 and 70 level 10 and 58 level 2 and 49 level 8, and 42 level 3. The study showed that many respondents were aware of the complex nature of the risks of obesity and the possible methods of treatment. The use of modern methods such as effective university education and media programs in promoting community health and health education increases awareness of the risks of obesity and ways to avoid it could be beneficial to promote awareness about obesity and its prevention among youngsters.

Keywords: Awareness, Dangers, Obesity, Potential, Risks, Solution.

Introduction

Obesity is a health problem linked to a lesser life span and health-related value of lifecycle (Almohsen, 2017). The World Health Organization (WHO) defines obesity as an excessive increase of fat in the human body, which results in a health risk (WHO, 2022). Overweightness is a public health problem that negatively affects both the duration and value of life span (Kumar, 2017; Lee, 2018). Nearly two billion adults around the world are overweight; more than half a billion are obese, and nearly 3 million people die annually because of obesity as assessed by the World Health Organization (2014). Weight and overweightness are linked to more deaths than malnutrition (WHO,2008). Obesity requires cooperation from all community members. It is a result of an imbalance between calories consumed and calories lost. Women are more likely to have obesity than men. Obesity is the main cause of various chronic diseases such as heart disease, liver disease, diabetes, and several types of tumors, etc. According to an estimate, nearly 3 billion adults will suffer from obesity in 2025, whereas eating a healthy diet, walking, and physical activity can help prevent obesity (Ertas-Ozturk, 2019). Numerous international organizations have declared obesity an epidemic that poses a growing threat to children and adolescents worldwide, especially in developed countries (Morgan *et al*., 2020, Hart, 2021).

Some lifestyle habits such as eating habits, physical activity, and stress are formed because of staying in many environments and spending a long time in them, especially the period that students spend in university. Studies show that a large percentage of obesity cases develop among late adolescents and represent a significant risk to their health due to the permanent persistence of obesity (Racette *et al*., 2005; Sert *et al*., 2016). Obesity may be influenced by several social and cultural factors, lifestyles and stressors that characterize university students as a subpopulation (Al-Rethaiaa *et al*., 2011; Mokdad *et al*., 2014). Undergraduates' physical health is greatly affected by academic stress, peer relationships, and lifestyle choices, as well as the changeover from youth to maturity (Stallman, 2010). Obesity has sturdy connection with several risk factors plus hormones, marital status, low income, smoking and increased screen time, and high consumption of diet through the asset of the relation. The World Anti-Obesity Day is celebrated on October 11 every year with that goal to promote solutions to the obesity crisis, awareness, and improvement of obesity treatment, and prevention policies.

The World Health Organization has stated that overweightness is "an abnormal or excessive accumulation of fat that is dangerous to health.". Obesity is measured by body mass index which is pointer to quantify the height of body fat and therefore the classification of weighty or overweightness through calculating the proportion of an individual's weight in kilograms to the square of his height in meters (kg/m^2). A high proportion may be sign of a high percentage of body fat. Body mass (BMI) and condition (WHO, 2009).

Moreover, obesity is associated with many common problems and diseases, including cardiovascular disease, endocrine system, lung disease, sleep apnea, arthritis, digestive system, gallbladder illness, and specific kinds of tumor. Although severity of overweightness and its effect on healthiness is known, occurrence is increasing. Increasing overweightness degree illustrates the enormous economic load on government resources besides persons. Therefore, understanding occurrence of obesity, besides level of community consciousness of its risks is the main stage for developing useful intervention methods to reduce this health problem. The obesity rate in the KSA is 28.7%, and the weighty rate is 30.7% in the stage cluster 15 years and over for men and women. One of the steps in preventing obesity is knowing obesity and its harmful consequences (Cuevas-Sierra *et al*., 2019). This study aims to: Find out how students are aware of obesity and identify the link between awareness level, healthy lifestyle, eating habits and risk factors for metabolic syndrome.

Method

This research is cross-sectional, and study duration was about 8-10 weeks. The study subject were students at Qassim university. The information was composed by means of pretested organized survey, and height and weight were measured to determine BMI. BMI was designed using the method weight (kg)/height^2 (m2). BMI less than 18.9 kg/m^2 was measured underweight, fewer than 25 kg/m^2 was measured normal, 25–29.9 kg/m^2 was considered weighty, and 30 kg/m^2 or overhead was considered overweight. An Online questionnaire was developed after literature review and

was pretested and validated by pilot survey of 50 people. It comprised questions on general information of research subjects, questions to measure the perception of risk factors for obesity, questions on complications associated with obesity, and questions regarding whether the study subjects were aware of various methods of estimation of obesity. An online questionnaire was deployed for a period of 4 weeks using google forms. The link of the questionnaire was distributed through social media like WhatsApp, telegram, and twitter. At the end of 4 weeks data collected were tabulated and analyzed. Percentage and proportions were used in the study. Statistical analysis was done using specialized software like SPSS. All findings were summarized by statistical methods such as frequency, percentage, etc.

Ethical Clearance

Written informed consent was taken from the study subject before the start of the data collection. Ethical clearance was obtained from institutional ethics before the start of the study.

Findings

Table 1

Sociodemographic Characteristics of Qassim University Students.

Characteristics	Categories	Frequency, %
Age	Less than 20	203 (40.3%)
	21-25	176 (34.9%)
	25-28	65 (12.9%)
	others	60 (11.9%)
Gender	Male	179 (64.5%)
	Female	325(35.5%)
Level of study	1-4	273 (54.4%)
	5-7	104 (20.6%)
	8-10	127 (25.2%)

In this study, 504 students were selected out of which 203 were from 18 to 20 ages and 176 from 21 to 24 ages. 65 from 25 to 28, and 60 others responded. Of the study subjects selected, 325 were females and 179 were males. The students' academic levels were divided into three categories. The first category included levels from first to fourth and it included 273 participants representing 54.4% of the total. The second category included levels from fifth to seventh and represented 20.6% of the total. The third category, which included levels from eighth to tenth, represented 25.2% of the total.

Table 2

Part of Students' Knowledge of Obesity) n=504)

Variables	responses (n=504)			
	Yes		NO	
	n	%	n	%
Hearing about obesity	498	98.8	6	1.5
hearing about Body mass index (BMI)	214	42.5	290	57.5
Knowledge about the BMI range for obesity	206	40.9	298	59.1
Transition of obesity genetically	327	64.9	177	35.1
Do you think you are obese?	143	28.4	361	71.6
Exercise activity	252	50	252	50
Eating though watching TV or working on the computer or something?	343	68.1	161	31.0
favorable fast food	309	61.3	195	38.7
Participation in the gams	378	75	126	25

Table 2 shows that 498 of the students have awareness of the obesity, six students showed unawareness. 290 have not heard of BMI and 214 knew about BMI. 298 did not knew about the BMI range for obesity and 206 were aware of the range for obesity. 327 of them said that obesity is transmitted genetically and 177 of them said that obesity is not transmitted genetically. 361 said we do not think that we are fat and 143 they said we are fat. 252 do exercise and 252 don't do the exercise. 348 said yes, we are the ones who eat while watching TV or working on computers or something. 161 have said, we do not eat while watching TV or working on computers or something. 309 people prefer fast food, 195 avoid it. 378 people participate in the gym whereas 126 of the respondents have no gym habits.

Table 3

Responses of the Study Subjects that were Appropriate with Respect to Awareness on Health Problems Associated with Obesity

Variables	University Students' Responses (n=504)					
	Agree		Disagree		Neutral	
	No	%	No	%	No	%
People who are overweight are more likely to have diabetes or high blood pressure?	402	81.7	16	3.2	76	15.1
Does our existence in easy and convenient times contribute to the increase in obesity?	378	75	41	8.1	85	16.9
. Weight loss drugs help in losing weight?	66	13.1	262	52	176	34.9
People who are obese are more likely to have erectile dysfunction?	182	36.1	73	14.5	249	49.4
Excess body fat increases the risk of prostate cancer in men?	222	44	50	9.9	232	46
Obesity increases the rates of kidney stones?	213	42.3	97	19.2	194	38.5
Obesity increases the rates and chances of breast cancer?	165	32.7	131	26	208	41.3
Obesity increases the risk of miscarriage and premature labor?	244	48.4	97	19.2	163	32.3
Obesity on the fertility of a woman and the horse due to pregnancy due to fat?	293	58.1	70	13.9	141	28
One of the worst effects of obesity in women is the condition known as preeclampsia?	197	39.1	97	19.2	210	41.7
Obesity affects a woman's fertility and the chances of pregnancy because the accumulation of fat, especially in the abdominal area, causes ovulation problems?	290	57.5	67	13.3	147	29.2
Overweight women are at risk of urinary tract infections during pregnancy?	238	47.2	61	12.1	205	40.7
Cesarean delivery rates are higher than normal for obese?	266	52.8	69	13.7	169	33.5

Table 3 shows that 412 of respondent said that people who are overweight; they more likely to have diabetes or high blood pressure; 76 of them are neutral; 16 of them disagree. Likewise, 378 responders have said that our existence in easy and convenient times contribute to the increase in obesity. 41 people said did not agreed with this statement while 262 also did not showed agreement with a statement that weight loss by drugs help in losing weight, 176 remained neutral similarly, 66 respondents agreed that weight loss through drugs help in losing weight. Erectile dysfunction is an issue that often complained of by people who are overweight 182 people agree that Erectile dysfunction is a problem that often complained of by people who are overweight, as for this statement is concerned, 73 disagreed, 232 were neutral. 222 agreed that excess body fat rises the hazard of prostate tumor in men likewise 50 disagreed. 213 respondents agreed that obesity increases rates of kidney stones, 194 neutral whereas, 97 people disagree that obesity increases the rates of kidney stones, 208 were neutral regarding it relationship with breast cancer; 165 considered it as one of the causes of cancer, while 131 disagreed. 244 respondents were of the view that obesity rises the danger of miscarriage and early work, 163 were neutral, and 97 disagreed. 293 respondents were

agreed that obesity affects a woman's fertility because of fat, 141 were neutral, and 70 did not showed disagreement with this statement. 210 respondents were neutral for the statement that one of the worst effects of obesity in women is the condition known as preeclampsia, 197 agreed, and 97 disagreed. 290 of the respondents agreed that obesity affects a woman's fertility and the chances of pregnancy because the accumulation of fat, especially in the abdominal area, causes ovulation problems, 147 were neutral, and 67 disagreed. 238 people were found in agreement with the statement that overweight women are possible to be pretentious via a urinary tract infection during pregnancy, 205 were neutral and 61 respondents did not agree with it. 266 were of the view that cesarean delivery rates are higher than normal for obese people, 69 remained neutral while 69 had a different view.

Discussions and Conclusion

The researchers have conducted studies in different parts of the world, and especially in Turkey, it became clear that obesity is increasingly prevalent among all different age groups. If we draw attention to the causes, research in specific groups will have distinctive results, and the living environment and societal methods combined have similar features. Similar groups who live together for long periods of time away from their families, such as university students, are an excellent research group to study the dietary habits and prevalence of overweight among young people to assess the level of obesity and the perception of university undergraduates of day-to-day learning in relation to approximately the features of the instruction they accept. This study found that most of the study participants have a good understanding of obesity i.e., 98.8%. This may be a result of the increased awareness of weight gain through various health education, media, yet, unfortunately, more than 50% of them have no idea about BMI as a measurement of body weight. It also became clear from the study that most respondents do not recognize the BMI variety for overweightness. 327 students believe that obesity has a direct relationship to the genetic factor, as it is transmitted through heredity.

Giving to the existing research results, 71.6% of participant were not obese and 28.4% were obese. A fairly large percentage of students were not overweight. The results of this study are aligned with studies conducted in Saudi Arabia, Iraq, and Brazil (Althumiri *et al*., 2021; Cattafesta *et al*., 2022; Engpid & Peltzer, 2015). Many researchers in Saudi Arabia have shown that there is a disparity in the occurrence of obesity and overweight. The study conducted amongst the undergraduates in the College of Medicine, Jazan University, presented a high occurrence of overweight and obesity. Similarly, research conducted by Joma amongst undergraduates in the Gulf Cooperation Council countries is alarmingly high; other research conducted by Alsulami among adults in Saudi Arabia showed that weight and overweightness remained predominant in thirty-two percent and twenty-three percent of participants, which explained that the population was not obese (Sameer *et al*., 2024; Joma *et al*., 2024; Alsulami *et al*., 2023). The true prevalence of obesity in Saudi Arabia may be greater than what is currently shown in the completed research. The low average age of the target study population may be the most likely reason. Few studies have shown that obesity and overweight increase with age (24-26). Low estrogen levels are associated with obesity and may be the cause of male infertility (Amjad *et al*., 2019).

Our study showed that most of the participants were aware of the negative effects of obesity, in addition to joint pain and the possibility of diabetes, and some other chronic diseases. In contrast, previous research has shown the relationship between obesity and chronic diseases and some blood diseases (Yamada *et al*., 2023; Powell-Wiley *et al*., 2021). One of the most important risks of obesity is also genetic factors, which, in addition to environmental conditions, can contribute to the growth of obesity cases (Tirthani *et al*., 2024; Albuquerque *et al*., 2017). Contradictorily, research conducted by Mythily showed that although undergraduates understood healthy lifestyle behaviors, however, their understanding of obesity was weak, and their knowledge was also insufficient (Mythily *et al*., 2018). Awareness was better among our study participants when compared to the study by Anju Ade and others, where they found 37.4% of high school students had awareness regarding NCD risk factors and their prevention; similarly, awareness was not satisfactory in the study by Divakaran and others conducted on school students (Anju *et al*., 2016; Divakaran *et al*., 2018). This can be explained by the fact that college students are older and would have gained better knowledge when compared to other studies. Also, higher awareness about obesity risk was found among boys and students in a study conducted by Rizvi among students of South India (Rizvi *et al*., 2019).

Almost half of the study population (40%) believe that their eating habits may be the reason for their future obesity, due to unhealthy eating habits. Children's eating habits also lack essential nutrients for healthy growth due to their high energy intake. In most cases, the decisive factors for obesity are related to poor eating habits, such as eating processed and high-calorie foods at multiple times between main meals, in addition to following the behavior of eating outside the home away from the family. These habits usually develop in early childhood and develop significantly therein. A study conducted by Bakarman showed that more than half of the health care physicians participating in the research believe that obesity can be caused by foods rich in sugars and fats (Bakarman *et al*., 2024). The study conducted on students concluded that more than two-thirds of them adopt a diet that contains sugars as a basic element in nutrition. In addition, the research demonstrated that nutritional balance requires following nutritional methods that include estimated amounts of carbohydrates (Bashir *et al*., 2019). Other studies confirm that obesity can be caused by stress by causing the acquisition of bad eating habits, abandoning exercise, and taking drugs (Kumar *et al*., 2022). The study found that the participants frequently eat fast food, as it became clear that more than half of the participants eat fast food twice a week, while more than a third of them (36%) eat it more than twice a week. Most of these meals contain high calories and low amounts of minerals and vitamins. This indicates that the foods eaten are unhealthy, which ultimately leads to weight gain. Most meals outside the home contain a high percentage of sugars and fats, which are directly related to obesity.

Limitations

The study was conducted among undergraduate student at Qassim University, which limits the scope and extent of the study. Further, another limitation of this study is that it has used only descriptive analysis of the data. In the future, researchers will be required to repeat the same kind of studies in different universities with multiple samples and increased sample size. Likewise, future researchers can use inferential analysis to statically check the relationship, cause, and effect relationship among the creations, and predict variables.

Recommendation

The study recommends enhancing the knowledge about the dangers of obesity, improving the lifestyle by eating well and exercising, and increasing education about the dangers of obesity and its long-term consequences.

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Declaration of Interest

The authors declare that there is no clash of interest.

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