

Factors Associated with Junk Food Consumption Affecting Saudi University Female Students

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Abstract

Introduction: Understanding Saudi Female university students' perception on junk food consumption and its relationship with obesity and chronic disease is important and unknown among this age group at three different Saudi Universities particularly when the transition of people's dietary habits is fact all over the world. This cross-sectional study was allowed to examine the factors that affect university students female junk food choice which may has a link to the high obesity rate among this age group.

Method: Saudi female Students from three different university (n = 140, age between 18 - 25 years old) enrolled in this study in 2019. All data (general and demographic data) were collected using an easy and short online survey. Four main questions related to university female students junk food consumption and factors affecting them were collected. Data was analyzed via descriptive statistics and simple linear regression using SPSS.

Result: Approximately 42.1% students reported eating one to two junk food at the weekend. 78.1% students believed there is a relationship between obesity and junk food whereas 92.8% of students believed that there is a relationship between junk food and chronic disease. Students who eat more junk food have higher BMI compared to those who eat a smaller number of junk food daily/weekly. There was no significant relationship between students' junk food intake and how many days they exercise weekly. There was a no significant relationship between students' BMI and the number of exercises they do daily/weekly. The students reported that excellent taste for junk food (49.2%), easily found at their relative's parties and gathering (34.2%), students do not have the awareness about the negative impact of junk food on their health (28.5%), quick lifestyle encourages their choice of junk food (25%), low cost of junk food meal (10.7%), one of their eating habits since they are young (5.7%), junk food is the easiest way to get a meal in a short time (2.8%), were all the most crucial factors impacting students junk food choices.

Conclusion: Saudi university female students demonstrated high prevalence of junk food consumption. Further education needs to be implemented for this age group to avoid this trend of obesity to rise and to improve the quality of Saudi society eating behaviors.

Keywords: University Female Students, Junk Food, Factors, Obesity

Introduction

Junk food is defined as mass-produced food primarily meant for commercial purposes and with a specialization on the speed of service and delivery hence undermining other relevant factors involved in culinary science [1]. Junk food is high in fat, salt and sugar which contribute to obesity such as burgers, pizza and fried chicken [2]. Its target customers are busy travelers, students, wage workers, and other clients who lack time to sit in restaurants and hotels to take complete meals [3]. For the need of junk delivery, these foods are either fried, frozen, or baked, and their ingredients contain high levels of fat and calories, mainly due to the cooking styles [1]. Increased consumption of these foods with less physical exercise poses a significant risk of accelerated obesity.

The relationship between junk food and university students is seriously inevitable. Most of these students are busy with assignments, classes, and discussions and rarely get time to sit in a hotel and eat healthy meals [4]. Moreover, due to the age factor, most of them prefer these foods over cooked foods because it won't cost them time to cook, it won't stress them to follow recipes to prepare healthy meals, and the costs are relatively cheaper. The study also shows that the lifestyle of university students is a contributing factor to the consumption of these junk foods [5].

They will take snacks while using their laptops, smartphones, or tablets. Others will prefer having plate of fries while driving back home or maybe traveling. While having discussions, they will be taking some drinks and snacks, and sometimes during stress, some will choose to eat out. Female students have other related habits like cravings which direct them to these junk foods, while others will give these foods around them while watching movies or watching TV. As it is the nature of junk food, it is possible to consume a lot of such ultimately without knowing or other subconsciously, which poses a significant risk of being victimized with all the threats of high consumption of junk foods.

With these lifestyles and eating habits, university students are at a high risk of obesity due to junk food consumption. Moreover, most of these students rarely engage in physical exercise [6]. More than half of university students don't engage in these exercises. Moreover, due to little nutrition education, junk food consumption is often without any control so that a student can take these foods daily. Undoubtedly, such will result in obesity sooner or later, validating a unique relationship between junk food, obesity, and university students.

Factors Affecting People Eating Junk Food

Different factors affect the consumption of junk food over more healthy meals. Of such factor is time limitation [7]. Most people eat junk food because they cannot afford the time to take a healthy lunch or dinner. Such is highly associated with workers with limited lunch breaks, travelers looking up to take the next flight, or people with hectic schedules [8]. Another factor is convenience. It is more convenient to eat junk food than complete healthy meals [9]. Most of these foods are ready for consumption, and even if not, the time it takes to prepare them is a fraction of the time needed to prepare a meal [10].

For this reason, therefore, people opt to purchase them. Cost is also a factor contributing to choosing junk food. The meals are sold at relatively lower prices than the menus sold in hotels [11]. For this reason, most university students are caught in the loop of a never-ending lifestyle of eating junk food to cut down on costs. Junk foods also have an incredibly excellent taste. They have additives high in sugar and fat, so junk food is so delicious.

Additionally, it has been scientifically proven that cravings are boosted when one takes high sugar and fat foods. Therefore, the more one consumes these types of food, the more they crave more [12]. The alluring smell also increases people's sense of taste when they eat it, causing the experience to be more enjoyable. More factors affecting junk food people can be grouped under social, economic, and psychological grouping. Social factors have to do with relations between a person and others. Some of these factors include influence from peers, whereby one's network of friends influences them into taking these junk foods [13]. Another social factor includes

the environment whereby one's environment lures them into these eating habits. It is very likely that if one stays in a place where people eat a lot of junk food, the high chances are that they will start taking them. Such is very common with university students and family members [14]. Economic factors have to do with one's financial status, like earning. The level of one's earning may influence them into this caliber of eating habit. Due to low cost, some people prefer junk food to reduce costs. The type of job that one does also is an economic factor determining the taking of junk food or not. Some workers do not have long lunch breaks, which forces them to opt for junk food based on delivery speed and convenience [15]. For this reason, wage workers are on the verge of a high junk food intake compared to any other worker.

Obesity Statistics Related to Junk Food

Due to the large number of calories in junk foods, there has been a significant increase in the prevalence of obesity, posing health risks such as heart disease among children and teenagers [16]. The intake is high because these foods are affordable and readily available. They have each person's specifications such as flavor, prestigious packaging, and easy to carry in their backpacks or handbags [17]. Approximately 30% of children and a more significant percentage of college students take junk foods daily. Similar rates depict the number of children and teenagers who are obese [18].

Junk foods have a poor nutrient composition because they have high sugar concentration and low fiber content [19]. Therefore, this contributes to increased chances of obesity which may cause other dangerous diseases such as, type 2 diabetes, hypertension, and cardiovascular system failures [20]. According to various research studies, obesity is more prevalent among young females [21]. However, obesity is fueled by the frequent intake of junk foods. Studies have shown that food consumption eaten away from home has also risen alarmingly over the past four decades [22]. It is ultimately known that eating out may lead to excess calorie intake and increase the risk of obesity because of large portion sizes and increased energy density of foods [23]. Therefore, the relationship between eating away and calorie intake is a fueling factor for most cases of obesity, especially among children and youths. Based on research, a very high percentage of non-obese young generations take junk foods at most three times a week [24]. Seventy-two percent of the population that takes junk foods at least four times a week has been characterized by obesity. Of this population, more than sixty percent have been mapped out to be girls [25]. With these statistics, it is ultimately clear that the increased cases of obesity and overweight, especially among university students, are directly related to the high consumption of junk food.

In conclusion, it is critical to watch out for our eating habits since they significantly impact our health. Exposure to cases of obesity puts an individual at more significant risks of some chronic disease like heart attack, stroke, blood pressure, diabetes, and so much more [26]. As junk food is very convenient based on time factors and cost, we should remember that overconsumption is likewise very dangerous to our health. **The aim of this study is to** investigate Saudi university students eating behaviors towards junk food and its relationship with obesity and to examine the factors that affect their food choice.

Methods

Study Population

Students from three Universities in Saudi Arabia participated in this study Umm Al- Qura University, King Abdul-Aziz University, and Princess Nora University (n = 140, aged 18 - 34). The majority of the participants were from Umm Al-Qura University. This study was conducted only in three Saudi universities because no research has been done on these universities related to junk food and its relationship with obesity.

Online Survey and Data Collection

The questionnaire was short and easy to answer. Seven main Questions related to junk food and obesity were collected.

A copy of the questionnaire online link in the Arabic language is found as follows: <https://www.surveymonkey.com/r/S2XDZHP>

All data were collected using a short online survey via Online-Survey Monkey to build and distribute the survey in 2019. After six weeks from the first day of distributing the online survey, all data were collected. Before calculating the percentage, the data was cleaned to ensure the accuracy of the result. The study survey link was emailed to participants in the three universities from the researcher to students directly through WhatsApp university students' group in each university, the study survey was designed based on previous literature, followed by a few changes to meet the study society differences.

These questions are as follows:

- Is there any relationship between junk food and obesity?
- Is there any relationship between junk food and chronic disease?
- How many times do you exercise weekly?
- How many times do you have junk food?
- What are the factors that affect students' choice of junk food?
- What is your current weight and height?

Validity and Reliability of the Questionnaire

The validity of the questionnaire was tested before the distribution of the study survey by sending the study research questions for proofreading to ensure it is clear and grammatically free from mistakes to avoid any ambiguity. The amended version was then sent to a nutrition and food science specialist for a final assessment before distributing the questionnaire. The reliability of the questionnaire was tested to ensure consistency, stability, and accuracy in the questionnaire by pilot study with a small group of students $n = 28$ who were asked to complete the questionnaire, and adjustments were made to the questionnaire where necessary for clarification. Cronbach's alpha was also employed to assess the internal consistency. A value of $\alpha > 0.6$ indicates the questionnaire's internal reliability. In this study, Cronbach's alpha was 0.83, indicating that the online junk food and obesity survey instrument was internally reliable and consistent.

Data Analysis and Ethical Consideration

IBM SPSS Statistics (Version 23) was used in all of the online survey questions to calculate percentages. Simple liners regression was used to examine the relationship between junk food, students' BMI, and the number of exercises. The college dean approved the study by Umm Al-Qura University, Al Leith Branch: home science education departments before distributing the online questionnaire. No further departmental ethics approval was required due to the noninvasive nature of this study.

Results

Study Population

140 Female students from three Saudi universities, Umm Al-Qura University - Al Leith Branch, King Abdul-Aziz University, and Princess Noura University, participated in this study. The female students were asked about questions related to their perception of eating Junk food and its relation to obesity. They were also asked other questions related to their perception of the effects of junk food on their health.

The majority of them are between 18-25 years old. Participant's monthly income category is described by Saudi currency - SAR. The monthly family income for those students varied among all of them as follows: (less than SR3,000 (29%), between 3,000- 6,000 (15%), 6,000-9,000 (18%), more than 10,000, and less than 20,000(7%), more than 20, This study revealed that significant Saudi students consumed junk food 000 (1%), depends on the student's university monthly income (30%).

Students' Perception of the Factors that Affect their Choice of Junk Food

In the research, 140 participants (University Students) were asked about factors affecting their Junk food choices. The results obtained from the research were explained as follows. First, approximately 49.2% (n=69) of university students indicated that their excellent taste for junk food is the most crucial factor impacting their choices. Secondly, 34.2% (n=48) of students thought that junk food is easily found at their relative's parties and gathering. Thirdly, 28.5% (n=40) of students do not have the awareness about the negative impact of junk food on their health. Fourthly, students believe that a quick lifestyle encourages their choice of junk food by 25% (n=35). Fifthly, the low price of junk food was one of the factors that most affected students' choice of junk food by 10.7% (n=15). About 9.2% (n=13) of students believed that all factors could affect their junk food choice. A few students, 5.7% (n=8), believe that eating junk food has been one of their eating habits since they are young. Lastly, around 2.8% (n=4) of students believe that cooking is not their favorite hobby, and they hate cooking, so they found that junk food is the easiest way to get a meal in a short time.

Four main questions were asked to students to reflect on their view on junk food and its relationship to obesity and chronic disease.

Q3. 3a: Students were asked how much junk food they eat daily/weekly?

The results were as follows:

Approximately 42.1% (n=59) students reported eating one to two junk food at the weekend, 22.8% (n=32) ate junk food twice a day, 19.2% (n=27) ate junk food once a day, 7.8% (n=11) ate junk food more than three junk foods daily, 6.4% (n=9) ate a varied number of junk foods daily, weekly and monthly.

Q3. 3b: Students were asked whether there is a relationship between eating junk food and obesity?

78.1% (n=122) students believed there is a relationship between obesity and junk food, and 10% (n=14) students responded by saying they had no idea if there is a relationship. Only 2.8% (n=4) students responded by a total no.

Q3. 3c: Students were asked whether there is a relationship between junk food and chronic disease?

The research established that approximately 92.8% (n=130) of students responded yes to a relationship between junk food and chronic disease. In contrast, only 7.1% (n=10) of students believed that there was no relationship between them.

Q3.3d - Students were asked about how many they do exercise in a week? Students were asked about how many they do exercise in

a week, approximately 26.4% (n=37) exercise twice weekly, 25% (n=35) said they do not do any exercise, 19.2% (n=27) said they exercise during the weekend, and they do not specify how many days one or two, 16.4% (n=23) they exercise three days a week and finally, 11.4% (n=16) exercise daily.

The relationship between students' BMI and how much junk food they eat daily or at the weekend, how much exercise they do weekly??

In 132 participants (data of 8 students were excluded from the total number of students to avoid bias), there was a significant positive relationship between number of eating occasions of junk food and their BMI ($F_{(1, 130)} = 7.891$, $p = 0.005$, $R^2 = 0.058$), which means that those students who eat more junk food have higher BMI compared to those who eat a smaller number of junk food daily or weekly, Figure 1. There was no significant relationship between students' number of eating occasions of junk food and how many days they exercise weekly ($F_{(1, 130)} = 0.002$, $p = 0.963$, $R^2 = 0.004$). However, there was no significant relationship between students' BMI and the number of exercises they do daily/weekly ($F_{(1, 130)} = 0.501$, $p = 0.480$, $R^2 = 0.000$).

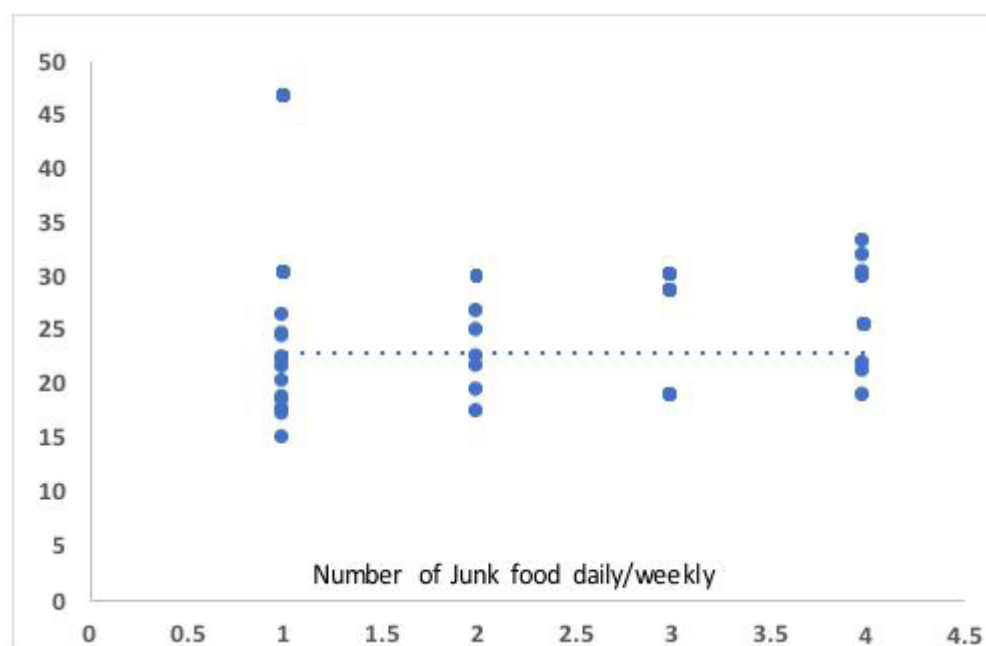


Figure 1: Scatterplot of the relationship between university students BMI and the number of junk food they have daily/ weekly, simple linear regression

Discussion

According to the collected data and findings, this study revealed that significant Saudi students consumed junk food. The findings on the reasons behind the consumption of junk food are in line with the findings of the previous studies. According to Bohara et al. (2021) [27], the leading reasons for consumption of junk food are its good taste, quickness to purchase, and often less expensive. The fact that the student can easily purchase the food when ready for consumption has contributed to high consumption, students are assumed to be relatively busy [27]. Al-Otaibi and Basuny (2015) also express the relationship between students' failure to cook with the tendency to eat junk food. Students that do not regard cooking as one of their favorite activities are most likely to purchase junk food [28].

The results show that a sizeable population of the students (42.1%) eat junk food during the weekends. This is mostly contributed by the weekend occasions. There is a huge connection between eating junk food and obesity. According to Vercaemmen et al. (2019) [29], most foods sold in the junk-food industry contain high amounts of calories. Due to this, the foods have a huge contribution to the development of obesity among consumers [29]. Amazingly, most university students in Saudi Arabia are aware of this relationship, they still consume junk food. The results also show that 78.1% of the students are aware of the relationship between obesity and junk food. This creates that the perceived need to consume junk is highly rated than the negative impact caused by junk on their health. 10% of the students responded that they were not aware whether junk food could lead to obesity. These results are in line with the findings of Mohammadbeigi et al. (2019) [30], most students are not aware that their junk food consumption could result in obesity.

The available research confirms the existence of a relationship between junk food consumption and chronic health conditions. Peyman et al. (2016) inform that junk food consumption can lead to type 2 diabetes, cardiovascular disease, liver disease, obesity, and different forms of cancer [31]. Similarly, Mohiuddin (2020) refers to junk foods as a major public health issue due to their high-calorie content [32]. Most of the study participants who consumed junk food were aware of the potential of developing a chronic condition due to their dietary behavior. Despite the poor dietary behavior among the students, only a few are involved in exercise routines. For instance, 25% of the participants are sedentary and do not engage in any planned physical activities [33]. recommend 150 minutes of exercise per week. Such a level of physical activity is considered adequate to manage body processes and improve immunity.

There is a significant relationship between participants' BMI score, junk food consumption, and exercise routine. Since the junk foods contain high-calorie content, it is expected that the participants who consume high amounts of junk food would exhibit high BMI scores [34]. The study confirms that junk food consumption is a health risk factor. The BMI score is also expected to be relatively near-normal or normal among participants that were actively involved in physical activities [35,36]. The study confirmed that the significance of exercise is not anchored on the number of days that they exercise but on the number of exercises and quality of the exercises. According to Mohammadbeigi et al. 2018 [4], consumption of junk foods is associated with high BMI, which increases the risk of obesity and other chronic conditions. The results communicate that although junk food consumption is contributed by different factors among students, its effects can still be managed. The introduction of an awareness program and training of students can assist in alleviating its effects. The students need to be guided on the best exercise routine as well for better outcomes.

Conclusion

It is clear that most students eat junk, it is relatively cheap and readily available for consumption. Most of the events that are held on weekends serve junk food, hence students attending them are most likely to eat junk food. It has also been determined that students eating junk food have a high BMI score. This shows that junk foods are associated with negative health effects among students [27]. It is therefore important to implement a solution to prevent these negative impacts among students. Implementation of a dietary and exercise program can be strategic to reducing the BMI and restoring positive health among affected students [37]. The responsibility to train the students on the importance of physical activity and dietary behavior rests on the shoulders of health professionals.

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