



Survey Report on the Relationship Between Snacks Consumption and Obesity Among Senior School Students in County Towns

Xueyan Yan, Chen Gao, Jiaxin Fu*

The Second Middle School of Liquan County, Xianyang, Shaanxi, China.

How to cite this paper: Xueyan Yan, Chen Gao, Jiaxin Fu. (2024) Survey Report on the Relationship Between Snacks Consumption and Obesity Among Senior School Students in County Towns. *Journal of Humanities, Arts and Social Science*, 8(4), 851-855. DOI: 10.26855/jhass.2024.04.006

Received: March 18, 2024

Accepted: April 15, 2024

Published: May 14, 2024

***Corresponding author:** Jiaxin Fu, The Second Middle School of Liquan County, Xianyang, Shaanxi, China.

Abstract

Objective: To understand and investigate the relationship between the snacks consumption of middle school students and physical health and weight obesity. **Methods:** Questionnaires were used to investigate whether students “understand the relationship between snacks consumption and their weight and health”. **Results:** Among the respondents, 70% consumed snacks, while only 30% did not consume snacks, so the snacks consumers far exceed 40% of those who do not consume snacks. The physical weight of senior school students consuming snacks was higher than that of those who did not eat snacks. **Conclusion:** Snacks consumption is certainly correlated with physical weight, and some additives in snacks can also cause obesity. As a result, active and effective measures should be taken to help senior school students quit their bad habit of eating snacks and maintain good health.

Keywords

Senior School Student, Eating Snacks, Obesity, Impact, Investigation and Analysis

1. Introduction

Snacks are popular due to multiple varieties and unique tastes, among which puffed food and carbonated drinks are the most popular. Relevant statistics show that the sales volume of sugary drinks has been increasing year by year, and the consumption rates of sugary milk drinks and beverages for children and adolescents are above 30% and 25%, respectively (Cheng Qiaoyun et al., 2021). The consumption rate of sugary drinks for children and adolescents is higher than that of adults, to which sufficient attention should be paid. French fries, potato chips, etc. all contain a large number of additives, and their mechanism of action is to cause some components in the puffing agent to generate bubbles in the food, so as to result in expansion. Puffed food has gradually become one of people’s favorites because of its delicious and crisp taste, convenient carrying and consumption, and diverse flavors. However, it impresses people that it is high in fat, salt, sugar, calories, and monosodium glutamate. In some foods, a lot of food additives are added to upgrade their taste, which is precisely the reason why puffed food is unhealthy (Zhang Ningxin et al., 2022). Hence, a long-term consumption of snacks will cause an increase in the physical weight of students to result in obesity, which will thus cause various obesity-related problems. In this paper, the situation of the consumption of snacks by senior school students in this county was surveyed to analyze its relationship with obesity and propose solutions.

2. Survey Method

2.1 Information on surveyed subjects

A total of 128 students of Grade One and Grade Two in the senior high school in this county were selected as the

subjects in this survey, with an average age of 16-17 years old. 100 questionnaires were randomly distributed, including 54 female students and 46 male students, and 100 valid questionnaires were collected, with a 100% response rate. Among them, 28 female students were overweight, 22 were normal in weight and 4 were underweight; 14 male students were overweight, 24 were normal in weight and 8 were underweight.

2.2 Survey results of snacks consumption by senior school students

2.2.1 Survey and analysis results of senior school students eating and not eating snacks

Fig. 1 shows that 70 out of 100 senior school students consumed snacks, accounting for 70%, and 30 did not consume snacks, accounting for only 30%.

Snacks Consumption Situation of Senior School Students



Figure 1. The proportion of Snacks Consumers in Senior School Students in County Towns.

2.2.2 Investigation and analysis of the relevant situation of senior school students consuming snacks

Table 1 shows that 70% of surveyed senior school students consume snacks more frequently and 30% consume snacks less frequently; 64.29% of them consume a wide variety of snacks, while 35.71% consume fewer varieties; 45.71% of them know about additives, and 54.29% know less about additives. Generally, 80% of them consume snacks in emotionally unstable situations. This indicates that more and more people are in favor of consuming snacks nowadays, and most of them do not have a certain understanding of food additives.

Table 1. Investigation and analysis of the relevant situation of senior school students consuming snacks (n=70)

	Frequency		Variety		Understanding (Additive)		Emotion	
	More	Less	More	Less	More	Less	Stable	Unstable
Consumer	49	21	45	25	32	38	14	56
Proportion	70.0 %	30.0 %	64.29 %	35.71 %	45.71 %	54.29 %	20.0 %	80.0 %

2.2.3 Analysis of survey results on the relationship between snack consumption and weight obesity

Table 2 and Fig. 2 show that 60.0% of senior school students who ate snacks were overweight, 20.0% were underweight and only 20.0% were normal in weight. However, 20.0% of senior school students who did not eat snacks were overweight, 30.0% were underweight and 50.0% were normal in weight. This shows that their weight gain is essentially correlated with the additives in snacks. Additives in snacks can lead to obesity, which will result in feelings of inferiority due to dissatisfaction with their appearance, negative emotions, and self-denial, and even lead to loss of interest in learning. All of these are not conducive to healthy development.

Table 2. Analysis of survey results on the relationship between snack consumption and weight obesity

Snacks Consumption	Weight		
	Fat	Thin	Normal
Consume (n=70)	42 (60.0 %)	14 (20.0 %)	14 (20.0 %)
Not consume (n=30)	6 (20.0 %)	9 (30.0 %)	15 (50.0 %)

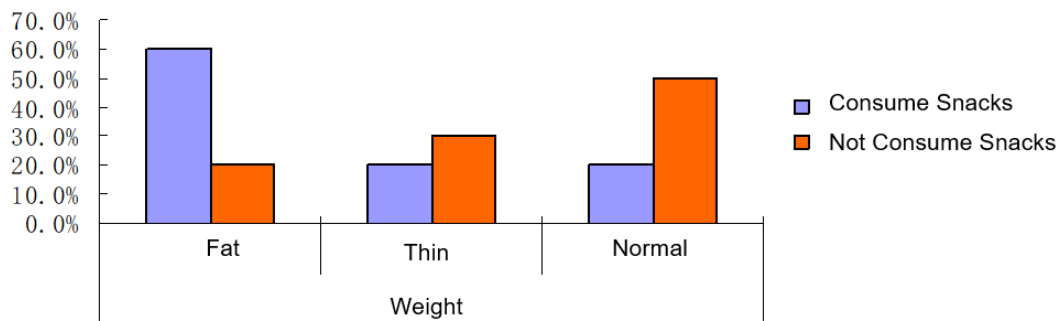


Figure 2. Relationship between snack consumption and Obesity.

2.2.4 Survey result for snacks consumption by children with parents around or not

Table 3 shows that the frequency of children's eating snacks lies in the management of parents. When children stay with their parents, parents can do better supervision. Some parents can't take care of their children all the time for the reason of work, so these children are more dependent on snacks due to their poor self-awareness. Among the 100 surveyed senior school students, 33 students were from rural areas and 67 students were from urban areas. Among the 70 senior school students who ate snacks, the ratio of rural senior school students ($n = 25$) to urban senior school students ($n = 45$) was 5: 9. Compared with urban areas, there are fewer canteens in rural areas, so there are more people who eat snacks in urban areas. However, fewer parents stay with senior school students in rural areas than those in urban areas, which causes the relative proportion of snack consumers in rural areas higher, accounting for 75.76%.

Table 3. Survey Result for Snacks Consumption by Children with Parents Around or Not

	Rural Area (n = 33)	Urban Area (n = 67)	Total
Consume	25 (75.76)	45 (67.17)	70 (100.0)
Not consume	8 (24.24)	22 (32.83)	30 (100.0)

3. Discussion and Analysis

3.1 Understand additives and unhealthy ingredients contained in snacks

The survey results reveal that the snacks often consumed by ordinary senior school students in counties include potato chips, instant noodles, spicy strips, carbonated drinks, and so on. Among them, potato chips contain (Zhou Shihao et al., 2023): high-calorie fats, a large number of high-sodium salts, artificial pigment, preservatives, and monosodium glutamate (so, it is recommended to eat them in moderation). Instant noodles: First of all, it lacks nutrition, a lot of vitamin B is destroyed, there are many additives, the salt content exceeds the standard, and the tableware is harmful, which will accelerate the aging of the human body (it has also its advantages, such as, it is more convenient and can provide the body's needs faster, but be careful not to eat it for a long time). Spicy strips: They belong to junk food, and first of all, they contain very unhygienic fats, pigments, and food additives. Carbonated beverages: their main additives are carbon dioxide, citric acid, sodium citrate, sodium benzoate, and acesulfame K, with high sugar content and a lot of pigments, so this is one of the reasons why carbonated drinks cause obesity (Li Chenyang et al., 2021).

3.2 Effects of main ingredients in snacks on weight obesity

Potassium sorbate: it is an elite preservative and its metabolites are mainly carbon dioxide and water, with low toxicity, but excessive consumption will have an impact on physical health, and it is often used in carbonated drinks. Aspartame: it is a sweetener, and its sweetness is 200 times that of sucrose. It belongs to non-carbohydrate and an artificially synthesized product (people suffering from phenylketonuria can't eat it). Acesulfame K and potassium acetylsulfonamide: both are sweeteners, and their sweetness is 200-250 times and 30 - 40 times that of sucrose. Sodium cyclamate: it is also a sweetener, and its sweetness is 30-40 times that of sucrose. It is artificially synthesized, and its safety is controversial (Su Yanping et al., 2018).

3.3 Analysis of the relationship between snacks consumption and obesity in senior school students

Consumption of snacks can lead to obesity in senior school students, mainly because snacks contain hydrogenated oil and many trans fatty acids, which will harm the human body and lead to obesity. Studies have shown that a close relationship exists between snack consumption and obesity. Snacks and drinks or beverages common in the daily life of senior school students, such as candy, biscuits, and drinks, often contain a lot of sugar, although they taste sweet. When these sugary foods are consumed by people, sugar will quickly enter the blood to stimulate insulin secretion, and promote glucose to be converted into fat for storage (Zhu Min et al., 2023). If a lot of high-sugar foods are consumed by human body over a long period of time, it will lead to excessive secretion of insulin, which will further aggravate the accumulation of fats, so thus as to cause obesity. The results of this survey show that 70 of the 100 surveyed senior school students ate snacks, accounting for 70%, and 30 of them didn't eat snacks, accounting for only 30%. This indicates that this ratio is relatively high. The reason is that it is not only due to the lack of self-restraint of students, but also correlated with the wide variety of snacks in schools and nearby shops, and the failure to meet the safety and health standards. The survey shows that 70% of surveyed senior school students in county towns consume snacks more frequently and 30% consume snacks less frequently. This reveals that the frequency of eating snacks is relatively high, which may be associated with the normal dietary structure, or insufficient dietary portions in school, leading to students having to add more meals. 64.29% of them consume a wide variety of snacks, while 35.71% consume fewer varieties. A wide variety is mainly to attract students to eat various unhealthy but beautifully packaged snacks, for the purpose of increasing their desire to purchase the snacks through sensory perception. 45.71% of them know about additives, and 54.29% know less about additives. Generally, 80% of them consume snacks in emotionally unstable situations. This indicates that more and more people are in favor of consuming snacks nowadays, and most of them do not have a certain understanding of food additives. Moreover, a survey of senior school students who ate and did not eat snacks found that 60.0% of senior school students who ate snacks were overweight, 20.0% were underweight and only 20.0% were normal in weight. However, 20.0% of senior school students who did not eat snacks were overweight, 30.0% were underweight and 50.0% were normal in weight. This shows that long-term consumption of snacks will unconsciously increase the body weight of students, and weight gain will more easily lead to hunger, so as to form a vicious circle.

3.4 Solution strategy

Since obesity is correlated with diet and will affect health problems, we can control it reasonably from diet, and regular physical exercise is beneficial to health. Moreover, the schools should also strengthen the physical exercise of students, and try their best to increase class hours of physical education classes, so that obese students who like to eat snacks can actively step out of their legs, engage in physical training, and reduce their weight. Furthermore, schools and parents should actively publicize the hazards of long-term consumption of snacks to the students, promote that most of the ingredients contained in snacks are unhealthy and unsafe, and publicize the risk of weight obesity caused by eating snacks. Schools and parents should enable students to see and listen to the publicity content in the form of specific practical cases, pictures, and short videos.

4. Conclusion

The analysis of survey results on 100 senior school students in the county town found that 70% of them have consumed snacks, and some of them have consumed many times and varieties of snacks. Moreover, the snacks consumers of senior school students in rural areas are relatively greater than those in urban areas, and the weight of snack consumers is higher than those who didn't consume snacks. Most snacks contain more additives. Excessive additives will cause obesity, which will thus lead to great psychological and emotional fluctuations, so as to affect learning. Hence, schools should strengthen the organization, publicity, and management of the hazards of eating snacks, and teenagers must strengthen their awareness of physical health, and eat less additives, and try to eat safe and healthy food.

References

Cheng Qiaoyun, Zheng Wenfeng, Wu Hong, et al. Effect of school health promotion intervention on overweight and obesity of middle school students. *Chin J Sch Health.*, 2021, 42(03): 381-384.

- Li Chenyang, Xiao Zhe, Sun Qi, et al. Analysis on dietary related factors of overweight and obese pupils in Shenyang. *Chin J Sch Health.*, 2021, 42(06):906-909.
- Su Yanping, Wang Peng, Jiang Nan, et al. Study on relationship between snacks consumption and family-related factors of primary and secondary school students, Tongzhou district, Beijing city, 2018. *Prev Med Trib.*, 2021; 27(09):674-679.
- Zhang Ningxin, Ding Yajie, Liu Yang, et al. Effects of early-life factors and diet-related behaviors on overweight and obesity in primary school students. *J Chin Med Univ.*, 2022, 51(09):788-793.
- Zhou Shihao, Ao Mengfan, Liang Xian, et al. Prevalence survey and risk factors of overweight/obesity in 424 primary and secondary school students in Guangdong Province. *J Guangdong Med Colg.*, 2023, 41(02):196-199.
- Zhu Min, Yu Min, He Haiyan, et al. Analysis of the correlation between dietary status and obesity management in 1257 children aged 5-6 in Wuhu City. *Anhui J Prev Med.*, 2023, 29(03):263-266.