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Weekly Consumption of Fruits and Vegetables Among Undergraduate Students

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Abstract

Background - Intake of fruits and vegetables is important in the overall health and wellness of individuals. Diseases such as coronary heart disease, diabetes and some cancers can be associated with a healthy lifestyle including a diet rich in fruits and vegetables.¹ Fruits and vegetables are high in micronutrients and antioxidants that are beneficial to our health.^{2,3}

Objective - The purpose of this study is to understand the choices students make regarding food after leaving their family homes. To see when left on their own and the influence of their new college lifestyle has affected their diets. This study will help to evaluate the need for nutrition education on campus.

Design - The design was a survey questionnaire given to students prior to the start of their class. The research was collected at the beginning of the month of September, 2021.

Participants/Setting - Research was conducted at Ouachita Baptist University.

Statistical Analysis - Excel® was used to organize the data.

Results - There were a total of 19 males and 31 females (n=50). The results from this study have confirmed what these studies have states, which is that very few participants consumed even 3 servings of their fruits (1%) and vegetables (5%) per meal.

Conclusion - The data showed that the majority of undergraduate students do not meet the daily recommended intake of fruits and vegetables.

Objective

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Introduction

As college students leave their family homes, they experience many challenges and lifestyle changes. They begin to make their own decisions influenced by other factors outside of their family units. These factors can include finances, peers, and convenience. College students are busy and want to be with their friends constantly. Meaning they are not grocery shopping or spending significant time preparing and cooking their food.

Do the new influences and lifestyles of living outside of the family home affect the intake of fruits and vegetables of the college student? Intake of fruits and vegetables is important in the overall health and wellness of individuals.

Previous studies have noted that fruit and vegetable consumption can impact the prevalence of chronic diseases.¹⁻⁴ Diseases such as coronary heart disease, diabetes and some cancers can be associated with a healthy lifestyle including a diet rich in fruits and vegetables.¹ Fruits and vegetables are high in micronutrients and antioxidants that are beneficial to our health.^{2,3} In one study it was reported that only about 5% of college students eat the daily recommended value of 5 servings of fruit and vegetables a day.⁴ That is less than half of the population of students. Another study said that “Fewer than 18% of American adults meet the daily recommendations for fruit and vegetable servings.”² This shows that even after college there is a gap in the diet of the American adult, but it is especially low in college students and that could be due to the changes in lifestyle. Understanding the amount of fruits and vegetables that are consumed by the average college student can help to evaluate the choices made in the new transition of this stage of life.

Methodology

This research was sent to the Ouachita Baptist University Institutional Review Board in September 2021, in which approval was granted. The questionnaire asked questions regarding fruit and vegetable intake among undergraduate students on a weekly basis.

The first five questions of the questionnaire collected demographic information, such as age, gender, race, academic school and student classification (i.e. freshman, sophomore, junior, senior). The following questions collected data on whether participants consumed fruits and/or vegetables at every meal and the quantity consumed.

Participants were aged 18-22+ years and were randomly selected students on Ouachita Baptist University's campus. Emails were sent to professors around campus to see if they would allow their students to participate in the experiment during class time, and those who agreed participated in the study.

The questionnaire was either given to the professor in person, or set in their box outside of their office. The professor then handed out a paper copy of the survey to the students that wanted to participate. Participants were given the informed consent form in person, to sign and date, and once completed, they were given the questionnaire. The participants had 15 minutes to fill out the informed consent form and complete the questionnaire.

The statistical analysis was conducted using Excel®. The data collected from the survey questionnaires were compiled into an Excel® worksheet to examine the findings of the study and create various diagrams to present the data graphically.

Table 1. Survey Questionnaire

Weekly Consumption of Fruits and Vegetables Among Undergraduate Students
Please circle one answer per question.

1) Age
a) 18
b) 19
c) 20
d) 21
e) >22

2) Gender
a) Male
b) Female

3) Classification
a) Freshman
b) Sophomore
c) Junior
d) Senior

4) Race
a) African American
b) Caucasian
c) Hispanic
d) Asian
e) Other

5) Academic School
a) School of Interdisciplinary Studies
b) Frank D. Hickingbotham School of Business
c) Charles and Elizabeth Pugh School of Christian Studies
d) Michael D. Huckabee School of Education
e) School of Fine Arts
f) School of Humanities
g) W.H. Sutton School of Natural Sciences
h) W.J. Satter School of Social Sciences

6) Do you eat fruit or vegetable at breakfast?
a) Yes
b) No

7) Do you eat fruit at breakfast?
a) Yes
b) No

8) How many servings of fruit do you eat at breakfast? (Serving Sizes include: 1/4 cup juice, 1 medium size fruit, 1/2 cup dried fruit or 1/2 cup fresh, frozen, or canned fruit)
a) 0
b) 1
c) 2
d) 3

9) Do you eat vegetables at breakfast?
a) Yes
b) No

10) How many servings of vegetables do you eat at breakfast? (Serving Sizes include: 1 cup raw leafy vegetables, 1/2 cup fresh, frozen, or canned vegetables, or 1/2 cup vegetable juice)
a) 0
b) 1
c) 2
d) 3

11) Do you eat fruit or vegetable at lunch?
a) Yes
b) No

12) How many servings of fruit do you eat at lunch? (Serving Sizes include: 1/4 cup juice, 1 medium size fruit, 1/2 cup dried fruit or 1/2 cup fresh, frozen, or canned fruit)
a) 0
b) 1
c) 2
d) 3

13) How many servings of vegetables do you eat at lunch? (Serving Sizes include: 1 cup raw leafy vegetables, 1/2 cup fresh, frozen, or canned vegetables, or 1/2 cup vegetable juice)
a) 0
b) 1
c) 2
d) 3

14) Do you eat fruit or vegetable at dinner?
a) Yes
b) No

15) How many servings of fruit do you eat at dinner? (Serving Sizes include: 1/4 cup juice, 1 medium size fruit, 1/2 cup dried fruit or 1/2 cup fresh, frozen, or canned fruit)
a) 0
b) 1
c) 2
d) 3

16) How many servings of vegetables do you eat at dinner? (Serving Sizes include: 1 cup raw leafy vegetables, 1/2 cup fresh, frozen, or canned vegetables, or 1/2 cup vegetable juice)
a) 0
b) 1
c) 2
d) 3

17) About how many times a week do you have vegetables as a snack?
a) 0
b) 1-2
c) 3-4
d) 5-7
e) 8-10

18) About how many times a week do you have fruits as a snack?
a) 0
b) 1-2
c) 3-4
d) 5-7
e) 8-10

19) Is your daily fruit consumption the same throughout the week?
a) Yes
b) No

20) Is your daily vegetable consumption the same throughout the week?
a) Yes
b) No

Results

There were a total of 19 males and 31 females (n=50). Of the 50 participants, 8 (16%) were 18, 13 (26%) were 19, 12 (24%) were 20, 10 (20%) were 21, and 7 (14%) were 22 years old or older. 40 (80%) of the participants were Caucasian, 3 (6%) were Hispanic, 3 (6%) were African American, 2 (4%) were Asian, and 2 (4%) identified as Other. 7 (14%) of the participants were freshmen, 14(28%) were sophomores, 13 (26%) were juniors, and 16 (32%) were seniors. Of the participants, 37 (74%) belonged to the J.D. Patterson School of Natural Sciences, 5 (10%) to the W.H. Sutton School of Social Sciences, 5 (10%) to the Michael D. Huckabee School of Education, 3 (6%) to the Frank D. Hickingbotham School of Business, 2 (4%) to the School of Humanities, and 1 (2%) to the School of Fine Arts. 3 (6%) of the participants were double majors.

Table 1. Survey Questionnaire

Demographics n=50						
Gender	Male 19 (38%)	Female 31 (62%)				
Age	18 8 (16%)	19 13 (26%)	20 12 (24%)	21 10 (20%)	<22 7 (14%)	
Race	Caucasian 40 (80%)	Hispanic 3 (6%)	African American 3 (6%)	Asian 2 (4%)	Other 2 (4%)	
Classification	Freshman 7 (14%)	Sophomore 14 (28%)	Junior 13 (26%)	Senior 16 (32%)		
Academic School	J.D. Patterson School of Natural Sciences 37 (74%)	W.H. Sutton School of Social Sciences 5 (10%)	Michael D. Huckabee School of Education 5 (10%)	Frank D. Hickingbotham School of Business 3 (6%)	School of Humanities 2 (4%)	School of Fine Arts 1 (2%)

The results of this study showed that 29 participants consumed fruits at breakfast, while only 3 participants consumed vegetables at breakfast. 34 participants consumed fruits at lunch, while 44 participants consumed vegetables at dinner. 45 (90%) consumed fruits as a snack everyday, while 5 (10%) did not. Vegetables were consumed as a daily snack by 33 (66%) of participants consumed 1 serving of fruit per meal, and 35% of participants consumed 1 serving of vegetables per meal. Two servings of fruit were consumed in only 11% of participants, while 22% consumed two servings of vegetables per meal. Very few participants consumed 3 servings of fruits (1%) or vegetables (5%) per meal.

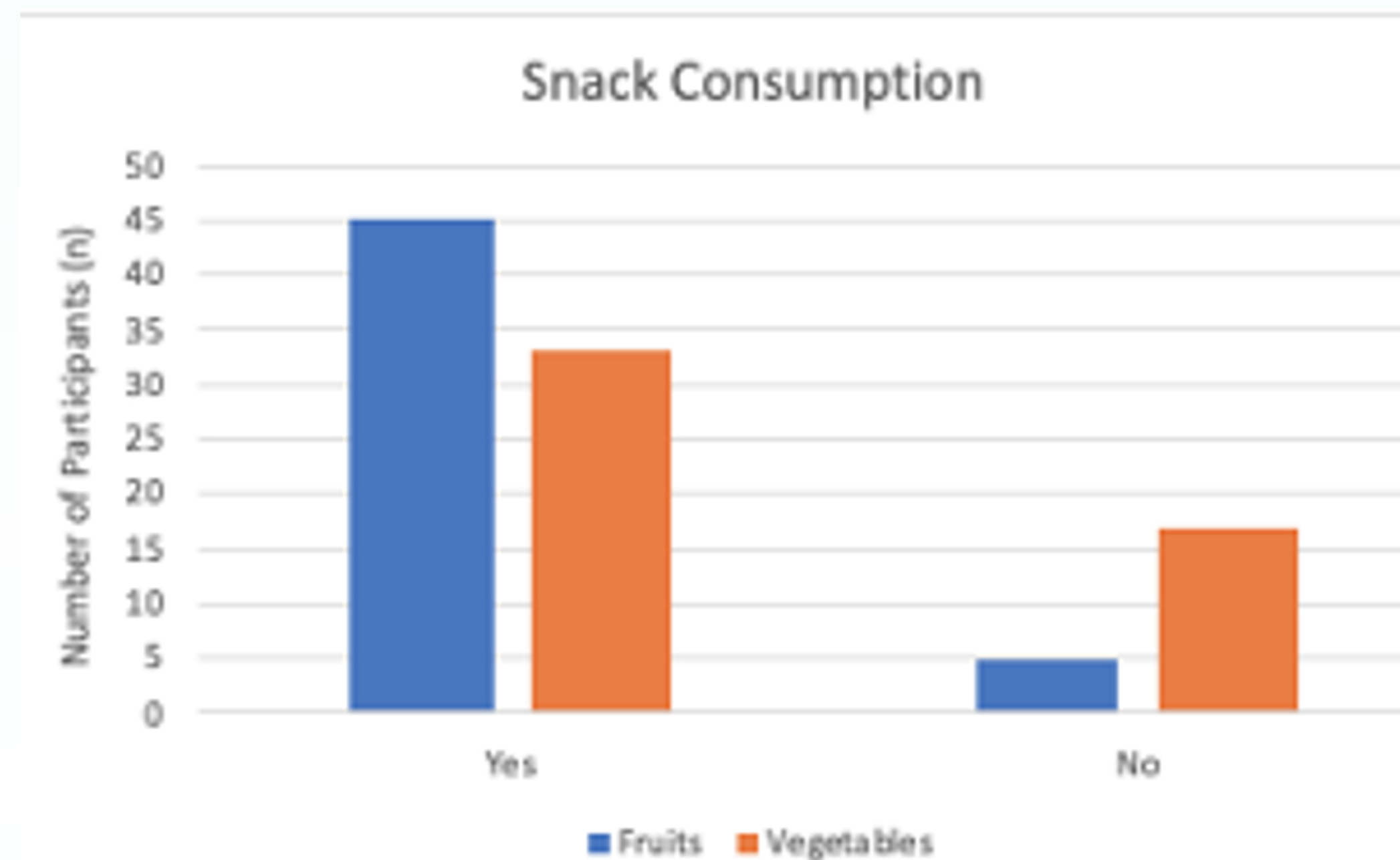


Figure 1. Number of students that consumed and did not consume fruits and vegetables as a snack

Results cont.

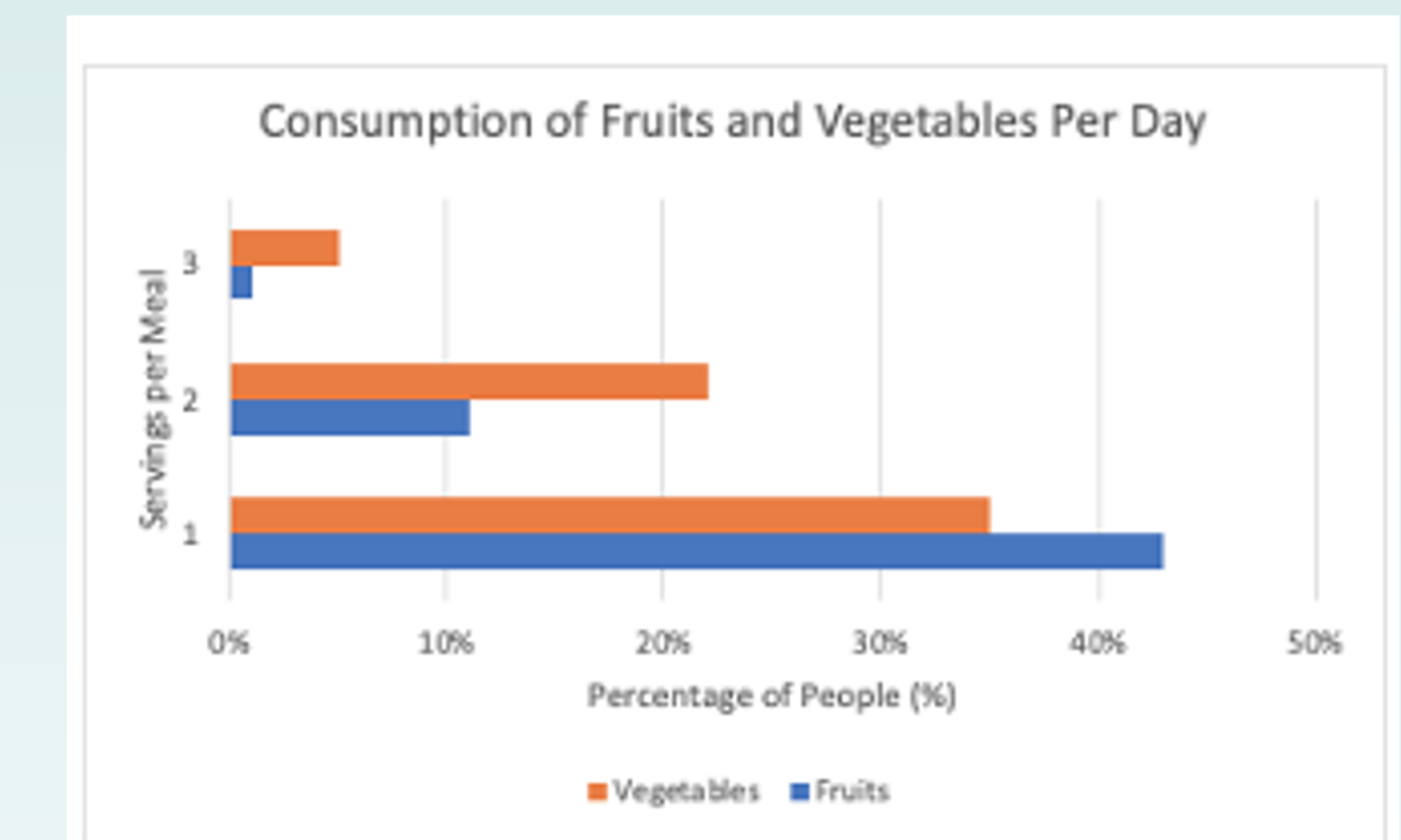


Figure 2. Amount of servings of fruits and vegetables consumed at each meal.

Conclusion

The data showed that the majority of undergraduate students do not meet the daily recommended intake of fruits and vegetables. The classes in which the questionnaires were given were nutrition classes, therefore, it can be deduced that these students have a basic understanding of how important fruit and vegetable consumption is, yet they still failed to meet the recommended intake. Further research is needed in order to determine why undergraduate students are not meeting the daily recommended intake of fruits and vegetables. The hope is to close the gap between the knowledge and actual consumption of fruits and vegetables so that chronic disease associated with “unhealthy” eating habits may be avoided. In undergraduate students, this is difficult due to the transition of moving out and making their own decisions on top of a busy schedule.

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