



Fast-Food Consumption of American vs. Canadian College Students

Kassidi L Cullen¹, Shelley L Holden^{1*}, Eunmin (Min) Hwang², Craig Parkes¹, Aline E. Botsis¹ and Ellen L. Glickman³

¹Department of Health, Kinesiology and Sport, USA

²Department of Hospitality and Tourism, USA

³Kent State University, USA

*Corresponding Author: Shelley L Holden, Department of Health, Kinesiology and Sport, USA.

DOI: 10.31080/ASNH.2023.07.1223

Received: March 13, 2023

Published: March 29, 2023

© All rights are reserved by Shelley L Holden., et al.

Abstract

Fast-food consumption has enabled the spread of global obesity and its detrimental effects. College students are impacted by increased fast-food consumption as they establish formative eating habits in a life stage characterized by increased independence. This study aimed to determine the difference in fast-food consumption between American and Canadian college students, the effect of fast-food consumption on body mass index (BMI) and the effect of living arrangements on fast-food consumption. A survey derived from the Michigan Behavioral Risk Factor Survey and prior research studies was distributed to 153 students at four-year, Division I universities in the United States and Canada. Study results indicated that American college students have significantly higher fast-food consumption frequency compared to those from Canada. Differences between fast-food consumption and BMI along with differences between living arrangements and fast-food consumption were insignificant. The impact of nutrition course participation on fast-food consumption was also insignificant. However, when examining previous nutritional education sources, most American and Canadian respondents reported the internet as their greatest source for nutrition education. When examining reasons for fast-food consumption, taste or enjoyment was the main reason indicated by American respondents while convenience or fast service was the main reason indicated by Canadian respondents.

Keywords: Obesity; Fast Food Consumption; College Students; Body Mass Index

Introduction

The rise in obesity on a national and global scale has reared its head in this age of poor nutrition and sedentary lifestyles. Obesity is defined by the World Health Organization (WHO) as a disease in which one retains an abnormal excess of fat and faces associated impairments [1]. According to the Centers for Disease Control and Prevention (CDC), obesity is an underlying factor in four of the ten current leading causes of death in the United States: cardiovascular disease, stroke, diabetes, and some cancers [2]. Obese people are more inclined to face lower quality of life, mental health struggles, and other negative physiological consequences [2]. In 2008, these physiological consequences created an estimated \$147 billion in medical expenses for obese individuals in the United States [2]. Obesity has manifested in loss of well-being, loss of money, and loss of life and therefore must be addressed.

Characteristics of fast-food

While physical activity is an important factor in overall health and obesity prevention, diet must also be analyzed. Food away from home, such as fast-food, is typically less nutrient-dense and more calorically dense, often having higher fat and sodium levels [3]. Specifically, fast-food is defined by the National Institute of Health (NIH) as quick, convenient, and cheap alternatives to self-prepared meals, tending to be high in saturated fats, sugar, salt, and calories [4]. The Dietary Guidelines for Americans (DGA) caution against excessive saturated fat and sodium intake [5]. Increased fast-food consumption is associated with decreased fruit and vegetable intake, poor diet, and increased body mass index (BMI) [6-9]. There is also a direct relationship between fast-food consumption and calorie and fat consumption [10].

Although some fast-food chains have added healthier options to their menu, the majority of what is offered does not promote healthy eating. The National Health and Nutrition Examination Survey (2011-14) reported fats in fast-food as 39.1% of total daily calories- 4.1% higher than the Food and Nutrition Board of the National Academics of Sciences [11] suggests as a maximum. Saturated fats in fast-food made up 13% of total daily calories- 3% higher than is suggested [11]. Diets that contain large amounts of fats are directly related to obesity [12]. Additionally, the Healthy Eating Index (HEI) recommends consuming 1,100 milligrams or less of sodium per every 1,000 calories [5]. Fast-food contained an average of 1,833 milligrams per 1,000 calories [13]. Further, diets high in salt are directly related to hypertension- an underlying factor in cardiovascular disease and stroke, as well [13].

Population analysis

Many of the health threats mentioned previously are perpetuated by the globalization of fast-food [14]. It is important to identify global differences in fast-food consumption to locate regions at risk for metabolic syndrome- a grouping of comorbid impairments that increase your risk of diabetes, stroke, and cardiovascular disease [15]. Regional analysis also identifies populations with positive eating habits to emulate.

The United States and Canada are two countries often paired together when comparing regions worldwide. However, these countries display differences when obesity and fast-food consumption are analyzed. The prevalence of obesity in the United States is higher than in Canada [16]. Obesity variations are also observed among different regions of the United States. According to the CDC the Midwest and the South have the highest obesity prevalence in the nation [2]. Similarly, fast-food consumption in Canada accounts for an average of 6.3% of daily calories, while fast-food consumption in the United States accounts for an average of 11.3% of daily calories [7,10]. Greater fast-food consumption and associated obesity prevalence puts Americans at risk of metabolic syndrome and heart disease.

College students and weight gain

To avoid the risks associated with poor diet, healthy eating habits should be formed early. Adolescent nutrition is often controlled by care takers with predetermined eating behaviors. Many of these predetermined eating behaviors are formed during young adulthood. Therefore, providing young adults with nutritional information is imperative as they adopt the responsibility of managing their health. There is less of a reliance on parents or guardians to dictate the type of food eaten and how often they eat it. This shift from dependency to autonomy in young adulthood is best observed in college students.

Although not everyone pursues postsecondary education, college students make up large populations in both the United States and Canada. There are approximately 19.4 million American college students and 1.4 million Canadian college students [17,18]. Many of these students are young adults learning their craft while simultaneously learning how to care for themselves. Although not everyone leaves home, there is a general increase in responsibility associated with attending college. Many find themselves in charge of their wellbeing and are now required to make their own decisions pertaining to diet and exercise.

College students may observe notable weight changes upon adopting the responsibility of their diet. Students may fall victim to the "freshman fifteen"- a phenomenon where one gains around fifteen pounds at the beginning of their college career [19]. While 15 pounds might be an overestimation, researchers have found that substantial weight gain, summing to 3-4 pounds, often occurs in the first year of college alone. This degree of weight gain is greater than typical weight gain at this age. This could result from changing dietary habits, activity level, stress management, and other physiological and emotional changes that occur upon entering college [19].

Alternatively, students may not observe drastic changes in their appearance, giving them a false sense of immunity to any adverse effects of the lifestyle they may choose. Some young adults maintain a balanced diet and an active lifestyle. This often results in weight maintenance or improvement. Other young adults also experience little to no weight fluctuation, yet they suffer from poor nutrition and sedentary lifestyles. This lack of weight gain can result from heightened energy metabolism associated with youth. Oxidative capacity and age are inversely related [20]. Therefore, some young adults can have a calorically dense diet without substantial weight gain in their beginning years of college. Unfortunately, this enables students to continue in their poor nutrition habits.

College students and fast-food

As Canadians and Americans incorporate fast-food into their diet, many college students in these countries face the nutritional dilemma associated with a reliance on fast-food, as well. Regular fast-food consumption is considered two or more times per week [6]. On an average day in 2013-2016, almost half of the young adult population aged 20-39 ate fast-food according to the National Health and Nutrition Examination Survey [3]. In a Canadian study, researchers found that young adults had the highest fast-food consumption, and the CDC reported that young adults ages 18-29 had the greatest obesity increase in recent years [7]. Generally, fast-food consumption is observed to decrease with age, so it is imperative to analyze and educate young adult college students [6,8].

There is also a disparity between perceived health and actual health associated with fast-food. Researchers conducted a nutrition survey with undergraduates and found that a large portion of students who consumed fast-food three or more times a day- substantially more than regular consumption- believed they had excellent health [9]. Many did not read nutrition labels and lacked nutrition education pertaining to sugars. Additionally, almost half of overweight students and almost a quarter of obese students believed they were a healthy weight. These misconceptions allow students to continue in poor health.

College students may find that their living arrangements influence their eating habits as many moves away from home. Common living arrangements for college students apart from remaining at home include dormitories, fraternity or sorority houses, on-campus apartments, and off-campus housing. Although not always statistically significant, some researchers have found positive trends between living off-campus and poor nutrition [22,23]. Poor nutrition encompasses increased fast-food consumption and decreased vegetable and whole-grain consumption [23]. Other researchers argue that living at home specifically promotes better nutrition through increased fruit, vegetable, and meat intake [24]. Living on campus was concluded to have the lowest fast-food consumption prevalence [23]. Factors such as meal plan purchases and grocery store utilization may influence these findings. Optimal living arrangements should decrease fast-food consumption and increase fruit and vegetable consumption.

While the effects of fast-food consumption have been analyzed, it is equally important to analyze additional causes of fast-food consumption. Convenience is a main factor driving fast-food consumption among college students [22]. In a study comparing college students in the United States and Spain, American students tended to value convenience more [25]. Contrary to American college students' views, Spanish students did not approve of the expansion of fast-food in their country. This was reflected by a higher percentage of Spanish college students reporting they never consume fast-food on a regular basis [25]. Views on fast-food relative to different populations impact fast-food consumption. Analyzing causes of fast-food consumption unique to populations helps predict the magnitude of fast-food consumption effects in that region.

Analyzing fast-food trends in different countries helps researchers better identify and understand populations at risk of obesity, heart disease, and metabolic syndrome. By examining the diets of college students in different regions, leaders are better able to educate a younger generation facing a large amount of change and stress. The need for nutrition education during early adulthood is imperative in all countries. By understanding the reasons for consuming fast-food and the outcomes of increased consumption, we

are more equipped to combat global obesity. Therefore, the purpose of this study was to determine the difference in fast-food consumption between American and Canadian college students, the effect of fast-food consumption on body mass index (BMI), and the effect of living arrangements on fast-food consumption.

Materials and Methods

Participants

Research was conducted across multiple four-year, Division I universities in the United States and Canada. There were 153 participants in the study with ages ranging from 18 to 45 (M = 22). Of the 153 participants, 117 participants were female, 35 participants were male, and one participant did not identify their gender. All participants were informed of their right not to participate and of the confidentiality of their participation. For further demographic information, refer to table 1.

Variable	n	%
Gender	117	76.97
Female		
Male	35	23.03
Age		
18-24	125	85.62
25-45	21	14.38
Country		
United States	121	79.08
Canada	32	20.92
BMI		
Underweight	10	6.67
Normal weight	79	52.67
Overweight/obese	61	40.66
Year in college		
Lower classmen	64	42.11
Upper classmen	88	57.89
Nutrition course participation		
Yes	89	58.17
No	64	41.83
Living arrangements		
Apartment/house off-campus	91	59.47
At home	24	15.69
On campus (dormitory, on-campus apartment, sorority/fraternity)	38	24.84

Table 1: Demographic Characteristics of the Sample.

Note: N = 153.

Instrumentation

The survey created in Qualtrics was derived from the Michigan Behavioral Risk Factor Survey (2011), and demographic questions based on prior research studies were incorporated. The Michigan Behavioral Risk Factor Survey (2011) consists of 12 questions relating to nutrition, physical activity, and fast-food consumption. These questions and others were derived from the Michigan Behavioral Risk Factor Survey (2005) conducted over the phone [6]. The remaining 32 questions based on prior research studies' survey questions related to race, age, gender, living arrangements, income, employment, university location, academics, athletics, activity level, eating habits, and nutrition education [7,9,22]. BMI was calculated based on participants' height and weight responses.

Data collection

The Canadian Research Council distributed the survey on February 28, 2022, via the Research Canada Newsletter. Beginning on March 7, 2022, the survey was distributed to students at four-year, Division I universities in the United States and Canada. These include but are not limited to the University of South Alabama, Auburn University, the University of Alabama, the University of Alabama at Birmingham, Samford University, the University of Texas at Austin, McMaster University, Redeemer University, Acadia Divinity College, and the University of Waterloo. Further distribution was requested by sending the survey to health sciences faculty at Western University, the University of Windsor, the University of Toronto, McMaster University, Simon Fraser University, the University of Calgary, the University of Winnipeg, Pennsylvania State University, Colorado State University, the University of Colorado at Boulder, Texas A and M University, the University of Florida, Louisiana State University, the University of Arizona, Arkansas State University, and the University of California Los Angeles. Due to limited responses from Canadian college students, additional survey distribution was requested by sending the survey to health sciences faculty at Brock University, York University, Dalhousie University, University of Manitoba, University of Regina, and University of Victoria. Data collection was extended until August 4, 2022.

Statistical analysis procedures

The collected data was analyzed by Statistical Packages for the Social Sciences (SPSS)- version 28 program. All surveys (N = 153) apart from two were entered and analyzed. The two that were excluded either contained one answer or no answers to the 44 questions presented. Chi-square tests were conducted to examine any differences between American and Canadian college student groups in gender, fast-food consumption frequency, BMI, athletic participation, year in college, living arrangements, and nutrition education. A cross tabulation test was done for country type on nutritional education sources and reasons for fast-food consumption.

Results and Discussion

Of the 153 participants, American college students accounted for 79.1% (n = 121) and Canadian college students accounted for the other 20.9% (n = 32). American and Canadian participants with a BMI of less than 18.5 who were considered underweight according to the NIH (1998) accounted for 6.7% (n = 10) of those that reported their height and weight. Participants with a BMI of or between 18.5 and 24.9 who were considered normal weight accounted for 52.7% (n = 79). Participants with a BMI of 25.0 or higher who were considered overweight or obese accounted for 40.7% (n = 61). Most participants (66.7%) did not participate in on-campus or off-campus athletics (n = 102). Upper classmen accounted for 57.9% (n = 88) of participants while the remaining 42.1% (n = 64) were under classmen. Most participants (59.5%) reported living in an apartment or house off-campus (n = 91). Students living at home accounted for 15.7% (n = 24) of participants while the remaining 24.8% (n = 38) of participants lived on campus in a dorm, apartment, or fraternity/sorority house. Most students (58.2%) have also participated in a nutrition course during college (n = 89).

To determine any differences between the American and Canadian student groups, chi-square tests were conducted on the following variables: gender, fast-food consumption frequency, BMI, athletic participation, year in college, living arrangements, and nutrition education. The original four levels describing fast-food consumption frequency were collapsed into two as there was only one Canadian respondent per level for levels two, three, and four. Anderson, *et al.* (2011) defines regular fast-food consumption as two or more times per week [6]. Therefore, the two levels for fast-food consumption frequency were collapsed where level one was less than two times per week and level two was two or more times per week. Among all the examined variables, there was only a significant difference found in fast-food consumption frequency between the two groups based on the significance level ($\alpha = 0.05$). The detailed study results are displayed in table 2. The frequency of fast-food consumption per week was significantly different between the American and Canadian student groups ($\chi^2 = 24.089$, $p < 0.001$). This was due to the substantial number of respondents in the Canadian student group eating fast-food less than two times per week. This implies that American students consumed fast-food significantly more than Canadian students.

A cross tabulation test was also done on major selected sources of nutrition education and major reasons for fast-food consumption on fast-food consumption frequency. Similar to an insignificant relationship was found for such variables between the two student groups, there was a statistically insignificant linear relationship found in nutrition education ($r = -.040$, $p = .625$) and fast-food consumption reasons ($r = .040$, $p = .622$) on fast-food consumption frequency. There was also no association found between country type

Variable	N (Percentage %) Total (N = 153)	N (Percentage %) American (N = 121)	N (Percentage %) Canadian (N = 32)	χ^2 value
Gender				2.945
Female	117 (76.97%)	96 (80.00%)	21 (65.63%)	
Male	35 (23.03%)	24 (20.00%)	11 (34.37%)	
BMI				0.680
Underweight	10 (6.67%)	7 (5.84%)	3 (10.00%)	
Normal weight	79 (52.67%)	64 (53.33%)	15 (50.00%)	
Overweight or obese	61 (40.66%)	49 (40.83%)	12 (40.00%)	
Athletic participation				3.850
None	102 (66.67%)	85 (70.25%)	17 (53.13%)	
Off-campus	41 (26.80%)	28 (23.14%)	13 (40.63%)	
On-campus	9 (5.88%)	7 (5.79%)	2 (6.24%)	
Both	1 (0.65%)	1 (0.82%)	-	
Year in College				0.045
Lower classmen	64 (42.11%)	50 (41.67%)	14 (43.75%)	
Upper classmen	88 (57.89%)	70 (58.33%)	18 (56.25%)	
Living arrangements				2.655
Off campus	91 (59.48%)	74 (61.16%)	17 (53.13%)	
At home	24 (15.69%)	16 (13.22%)	8 (25.00%)	
On campus	38 (24.84%)	31 (25.62%)	7 (21.87%)	
Nutrition course participation				0.423
Yes	89 (58.17%)	72 (59.50%)	17 (53.13%)	
No	64 (41.83%)	49 (40.50%)	15 (46.87%)	
Fast-food consumption frequency				24.09*
Less than twice per week	80 (52.29%)	51 (42.15%)	29 (90.63%)	
Two or more times per week	73 (47.71%)	70 (57.85%)	3 (9.37%)	

Table 2: Chi Square Tests of Gender, BMI, Athletic Participation, Year in College, Living Arrangements, Nutrition Course Participation, and Fast-Food Consumption Frequency.

Note: N=153; p < .001*

and total education ($\chi^2 = 7.733$, $p = 0.357 > 0.05$) and total reason ($\chi^2 = 5.707$, $p = 0.336 > 0.05$). However, there are some notable findings. When examining previous nutritional education sources, most American and Canadian respondents reported the internet as their greatest source for nutrition education followed by athletic coaches and nutritionists (Table 3).

Additionally, American students considered taste or enjoyment as the most important reason for consuming fast-food while Canadian students considered convenience or fast service as the most important reason for consuming fast-food. However, both Ameri-

can and Canadian students considered the convenient location of fast-food restaurants as the least influential factor impacting fast-food consumption (Table 4).

Independent t-tests and one-way ANOVA were conducted to find any significant differences in fast-food consumption frequency based on athletic participation, year in college, living arrangement, and nutrition education for the overall sample. All proposed variables were not significantly different for the outcome concern, fast-food consumption frequency. For instance, athletic participation presented an insignificant difference in the mean fast-food

Variable	American		Canadian		Total	
	n (%)	Rank	n (%)	Rank	n (%)	Rank
Athletic coach	30 (33.33%)	2	13 (43.30%)	2	43 (35.83%)	2
Physician	22 (24.44%)	3	4 (13.33%)	7	26 (21.67%)	4
Personal trainer	10 (11.11%)	6	8 (26.67%)	5	18 (15.00%)	6
Athletic trainer	15 (16.67%)	4	10 (33.33%)	4	25 (20.83%)	5
Nutritionist	30 (33.33%)	2	12 (40.00%)	3	42 (35.00%)	3
Internet	76 (84.44%)	1	22 (73.33%)	1	98 (81.67%)	1
Television	13 (14.44%)	5	5 (16.67%)	6	18 (15.00%)	6
Class	2 (2.22%)	7	3 (10.00%)	8	5 (4.17%)	7
Family and friends	-	-	1 (3.33%)	9	1 (0.83%)	8

Table 3: Previous Nutritional Education Sources.

Note: N = 153

Variable	American		Canadian		Total	
	n (%)	Rank	n (%)	Rank	n (%)	Rank
Taste/enjoyment	77 (67.00%)	1	9 (30.00%)	2	86 (59.31%)	1
Value/cost	34 (29.57%)	3	6 (20.00%)	3	40 (27.59%)	3
Convenience/fast service	37 (32.17%)	2	19 (63.33%)	1	56 (38.62%)	2
The person you are with wants to go	5 (4.35%)	4	6 (20.00%)	3	11 (7.59%)	4
Convenient location of fast-food restaurants	4 (3.48%)	5	3 (10.00%)	4	7 (4.83%)	5

Table 4: Reasons for Fast-Food Consumption.

Note: N = 153.

consumption ($t_{151} = -.064, p = .949$). Similarly, the fast-food consumption frequency does not differ whether the total students are in lower- or upper-class standing ($t_{150} = -.896, p = .371$). There was no statistically significant difference in the mean of fast-food consumption frequency between groups of living arrangements as determined by one-way ANOVA ($F(2,150) = 1.165, p = .315$). There was no significant difference found in mean fast food consumption frequency based on nutrition education ($t_{151} = -.151, p = .880$). The students who completed a nutrition course (1.48) presented a similar FFC frequency when compared to those who did not complete it (1.47).

Conclusion

Results of the current study are consistent with the findings of Black and Billette and Fryar and Ervin that American college students consumed more fast food than Canadian college students [7,10]. Bryant and Dundes also found that Spanish college students consumed less fast food compared to American college students which is similar to the current findings [25]. Future research could examine fast food computation of American college students

as compared to other countries, not just Spain and Canada. More research in this area would help to determine if American college students consume more fast food than college students across the world, thus putting them at a great risk of the negative health effects associated with the consumption of calorie dense processed foods.

Moreover, Canadian college students indicated convenience was their main reason for consuming fast food which is consistent with the findings of Heidel, *et al.* [22]. However, results of the current study determined that taste was the main factor driving American students to consume fast food. Therefore, future research on this topic should further examine the main reason for fast food consumption among college students. Results of the current are interesting and support the need for nutrition education during early adulthood. By understanding the reasons for consuming fast-food and the outcomes of increased consumption, we may be more equipped to slow the rise in global obesity.

Conflict of Interest

The authors declare no conflict of interest.

Bibliography

1. World Health Organization. "Obesity". Department of Nutrition and Food Safety (2017).
2. Centers for Disease Control and Prevention. "Adult obesity causes and consequences" (2021).
3. Economic Research Service. "America's eating habits: Food away from home" (Economic Information Bulletin No. 196). U.S. Department of Agriculture (2018).
4. National Institute of Health. "Classification of overweight and obesity by BMI, waist circumference, and associated disease risks". U.S. Department of Health and Human Services (1998).
5. U.S. Department of Agriculture and U.S. Department of Health and Human Services. (2020). Dietary Guidelines for Americans, 2020-2025 (9th edition).
6. Anderson B., *et al.* "Fast-food consumption and obesity among Michigan adults". *Preventing Chronic Disease* 8.4 (2011): 1-11.
7. Black JL and Billette JM. "Fast food intake in Canada: Differences among Canadians with diverse demographic, socio-economic and lifestyle characteristics". *Canadian Journal of Public Health* 106.2 (2015): 52-58.
8. Fryar CD., *et al.* "Fast food consumption among adults in the United States, 2013-2016". *National Center for Health Statistics* 322 (2018): 1-7.
9. McLean-Meyinsse PE., *et al.* "Self-reported consumption of fast-food meals by university students". *Food Distribution Research Society* 46.1 (2015): 23-29.
10. Fryar CD and Ervin RB. "Caloric intake from fast food among adults: United States, 2007-2010". *National Center for Health Statistics* 114 (2013): 1-7.
11. Food and Nutrition Board. "Dietary reference intakes for energy, carbohydrates, fiber, fat, fatty acids, cholesterol, protein, and amino acids". *Institute of Medicine of the National Academies* (2005).
12. Golay A and Bobbioni E. "The role of dietary fat in obesity". *International Journal of Obesity and Related Metabolic Disorders* 3 (1997): 2-11.
13. Centers for Disease Control and Prevention. "Adult Obesity Prevalence Maps" (2021).
14. Pan A., *et al.* "Exporting diabetes to Asia: The impact of western-style fast food". *National Institutes of Health* 126.2 (2013): 163-165.
15. Mayo Clinic. Metabolic syndrome (2021).
16. Shields M., *et al.* "Adult obesity prevalence in Canada and the United States". *National Center for Health Statistics* 56 (2011): 1-7.
17. National Center for Education Statistics. "Back-to-school statistics". U.S. Department of Education, Institute of Education Sciences (2020).
18. Universities Canada. Facts and stats (2019).
19. Holm-Denoma JM and Joiner TE. "The "freshman fifteen" (the "freshman five" actually): Predictors and possible explanations". *Health Psychology* 27.1 (2008): 3-9.
20. Solomon TPJ., *et al.* "Effects of aging on basal fat oxidation in obese humans". *Metabolism* 57.8 (2008).
21. McLean-Meyinsse PE., *et al.* "Self-reported consumption of fast-food meals by university students". *Food Distribution Research Society* 46.1 (2015): 23-29.
22. Heidal KB., *et al.* "Cost and calorie analysis of fast-food consumption in college students". *Food and Nutrition Sciences* 3 (2012): 942-946.
23. Laska MN., *et al.* "Dietary patterns and home food availability during emerging adulthood: Do they differ by living situation?" *Public Health Nutrition* 13.2 (2009): 222-228. [https://www.cambridge.org/core/services/aop-cambridge-](https://www.cambridge.org/core/services/aop-cambridge)
24. Ansari EW., *et al.* "Relationships between food consumption and living arrangements among university students in four European countries- a cross-sectional study". *Nutrition Journal* 11.28 (2012): 1-7.
25. Bryant R and Dundes L. "Fast food perceptions: A pilot study of college students in Spain and the United States". *Appetite* 51 (2008): 327-330.