

Use of Restaurant and Fast-Food Chains (RFF) and Its Association with Overweight and Obesity (OW/OB) among College Students.

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Introduction

In the United States, obesity affects more than 20% of young adults, between the ages of 18-24 years.^{1,2} Among adolescent and young adults, unhealthy weight gain may be linked to the increased availability of junk food and frequency of restaurant food consumption.³ According to the National Health and Nutrition Examination Survey (NHANES), fast-food and restaurant consumption is the higher among young adults (18-24 years) than any other age group.^{4,5} The frequency of restaurant and fast-food chains is associated with increased risk of overweight/obesity among college students in other countries⁶, however, data are limited among US college students.

Objective

To examine the frequency of restaurant and fast-food chains and its relationship to overweight/obesity status among college students.

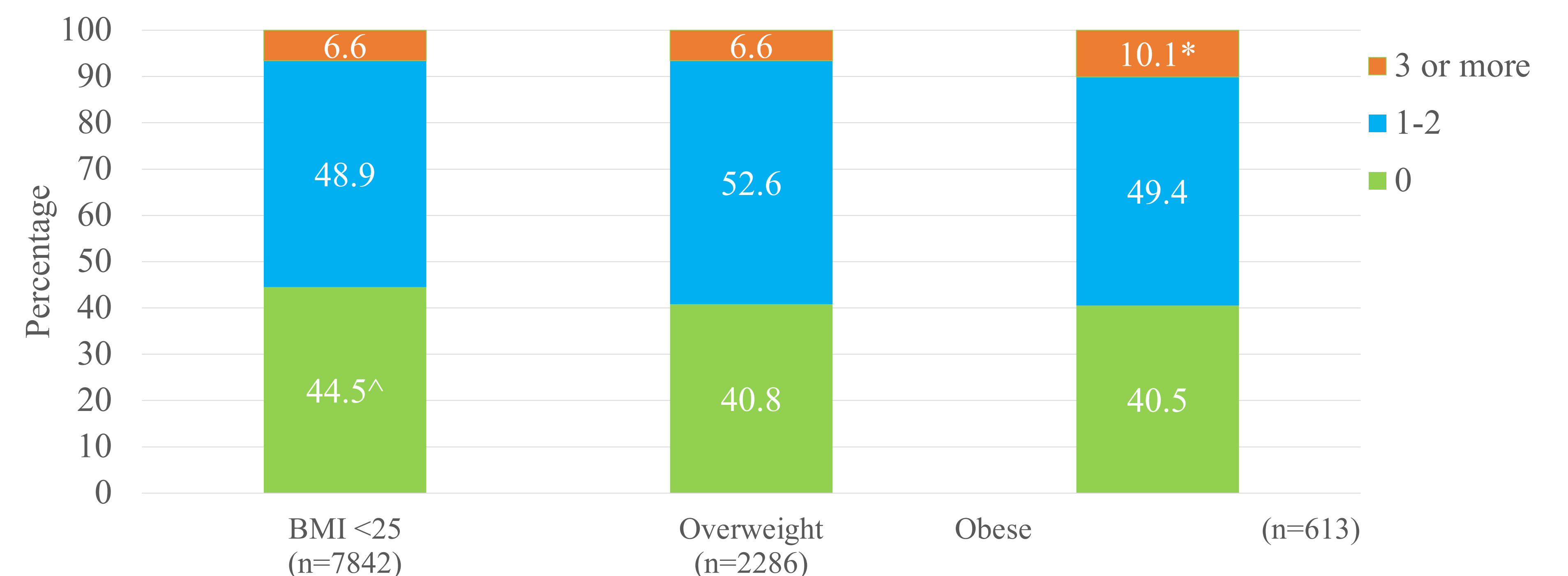
Methods

- **Study Design and Setting:** Data were collected from an on-going, cross-sectional study between 2005-2022 at the University of New Hampshire.
- **Participants:** Young adults were recruited from an introductory nutrition course between 2005-2020; all participants provided informed consent to participate, and results from the questionnaire was self-reported.(UNH IRB #5524)
- **Data Collection:** Frequent use of restaurant and fast-food chain was determined by the question, "On average, how many times a week do you eat at a restaurant or fast-food chain?"
 - Self-reported responses to their weekly frequency of restaurant use and fast-food chain were categorized (None, 1-2, or 3). Body Mass Index (BMI) was calculated using participants' measured height and weight (kg/m²).
- **Measurable Outcome:** Frequent consumers were defined as ≥ 3 x/week, infrequent consumers: 1-2x/week, and non-consumers: 0x/week. BMI was categorized into three BMI groups: <25.0 =healthy weight, $25.0-29.99$ =overweight; and ≥ 30 =obese^{3,6}.
- **Analysis:** Demographics were reported using frequencies. Chi-square analysis was used to assess the proportional differences in BMI categories across RFF frequency. Age, gender, year of study and class major were used as covariates.

Subject Characteristics

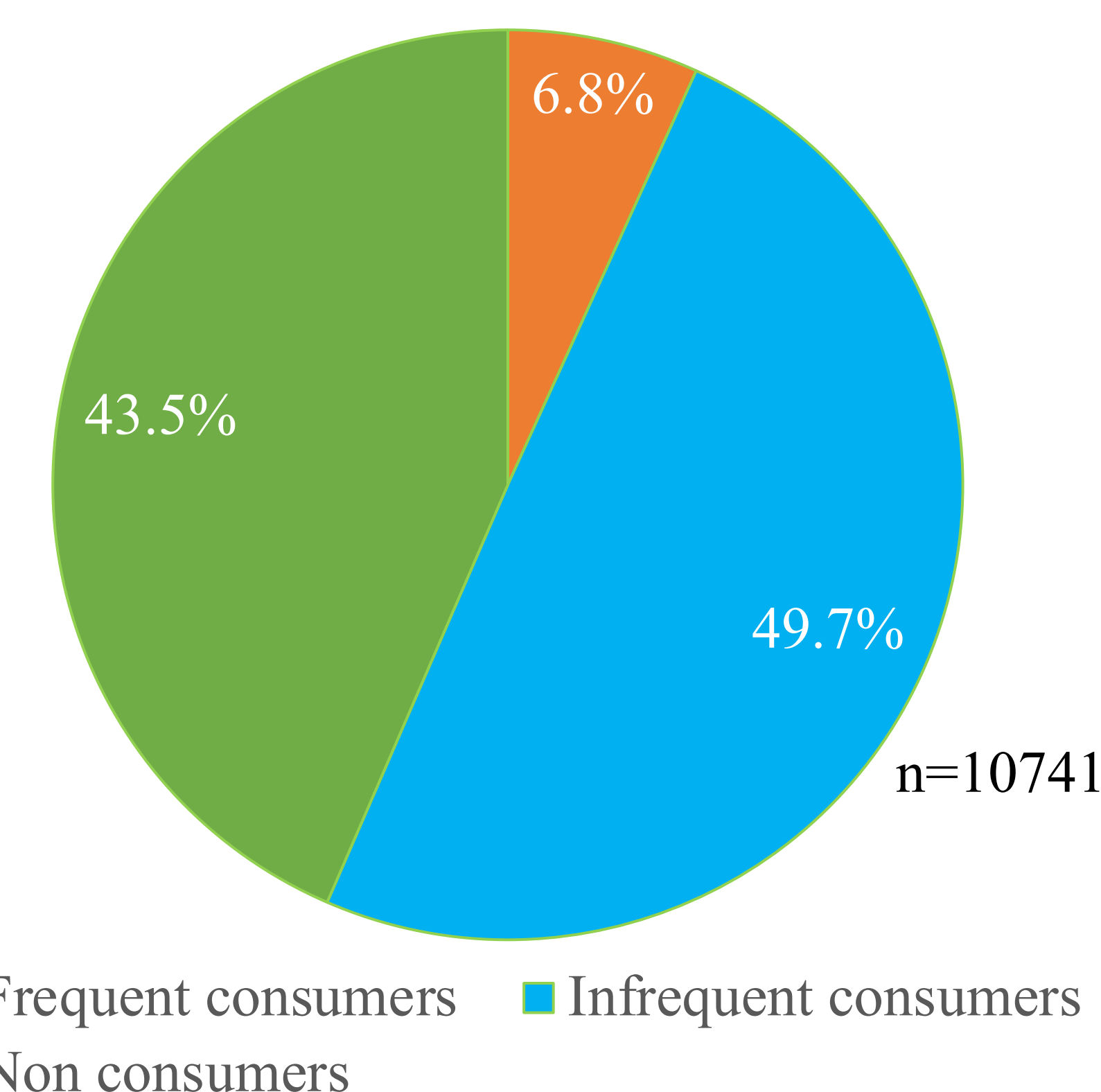
	0/wk	1-2/wk	3+/wk	Total
<i>n</i>	4672	5341	728	10741
	43.5%	49.7%	6.8%	100%
Mean age	18.7±.99	19±1.67	19.5±1.51	18.9±1.14
Male <i>n</i> =3276	40.7	49.8	9.5	30.5
Female <i>n</i> =7465	44.7	49.7	5.65	69.5
First years <i>n</i> =2826	48.8	46.7	4.5	53.9
Allied health major <i>n</i> =3318	0.42	50.4	7.5	73.5
On campus, no kitchen <i>n</i> =3725	49.2	46.6	4.2	70.6
On campus with kitchen <i>n</i> =401	37.4	56.4	6.2	10
Apartment with kitchen <i>n</i> =136	26.2	57.3	16.4	13.4
At home <i>n</i> =136	26.4	57.3	16.3	4.8
Elsewhere <i>n</i> =30	0.24	60.8	15.2	1.2
BMI<25 <i>n</i> =3492	44.5	48.9	6.6	73
BMI 25-29 <i>n</i> =932	40.8	52.6	6.6	21.3
BMI ≥ 30 <i>n</i> =248	43.5	49.4	10.1	5.7

Proportional differences in BMI Categories across RFF



*Proportional difference of RFF vs. BMI<25 & Overweight, [^]vs. Overweight & Obese; p<.001

Reported Weekly Restaurant, Fast-Food Consumption



Findings & Implications

- The majority of the students ate at restaurant and fast-food chains weekly.
- Frequent consumers of restaurant and fast-food chains were more likely to be obese.
- Findings suggest the need for a greater understanding on the impact of frequent restaurant use and fast-food chains on obesity risk among college students.
- Findings may support tailored health interventions to address risk factors in this population and promote nutrition education on college campuses.

Acknowledgements

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References

- 1.CDC. New Adult Obesity Maps. Centers for Disease Control and Prevention. Published September 21, 2023. Accessed October 26, 2023. <https://www.cdc.gov/obesity/data/prevalence-maps.html>
- 2.CDC. Defining Adult Overweight and Obesity. Centers for Disease Control and Prevention. Published June 3, 2022. Accessed October 26, 2023. <https://www.cdc.gov/obesity/basics/adult-defining.html>
- 3.Begum RF, Singh S A, Mohan S. Impact of junk food on obesity and polycystic ovarian syndrome: Mechanisms and management strategies. *Obes Med.* 2023;40:100495. doi:10.1016/j.obmed.2023.100495
- 4.Fryar CD, Hughes JP, Herrick KA, Ahluwalia N. Fast Food Consumption Among Adults in the United States, 2013-2016. *NCHS Data Brief.* 2018;(322):1-8.
- 5.Laska MN, Hearst MO, Lust K, Lytle LA, Story M. How we eat what we eat: identifying meal routines and practices most strongly associated with healthy and unhealthy dietary factors among young adults. *Public Health Nutr.* 2015;18(12):2135-2145. doi:10.1017/S1368980014002717
- 6.Banik R, Naher S, Pervez S, Hossain MdM. Fast food consumption and obesity among urban college going adolescents in Bangladesh: A cross-sectional study. *Obes Med.* 2020; 17:100161. doi: 10.1016/j.obmed.2019.100161



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