

Background

The prevalence of food insecurity (FI) varies by institution, and it can be anywhere from 13 to 60%, with latest survey of the Hope Center reporting FI at 45% in the college population nationwide.^{1,2} FI prevalence in the US college population is higher than the national average of 10.5%.^{1,3}

FI in graduate students has been found to be lower than in undergraduates.⁴ However, graduate students have been mostly overlooked in research, and when they have been studied, master's and doctoral students are usually grouped together.⁴

Socio-economic factors can increase the chances of being food insecure in undergraduate students, but limited research has been conducted to understand the predictors of FI on graduate students.

Objective

To compare the prevalence and correlates of FI among undergraduate, master's and doctoral level students.

Methods

All matriculated students at a large northeast public university in fall 2019 were invited to participate in the Students Quality of Life Survey resulting in a sample of 5,017 undergraduate (85.3%), 581 master's (9.9%), and 282 doctoral students (4.8%) (N=5880). A secondary analysis was conducted on self-reported FI (measured with the 18 item - USDA Household Food Security Survey Model) and mechanisms to financing education, while demographics were shared from an institutional database. Frequencies and multivariate logistic regressions were conducted separately by level of study.

Results

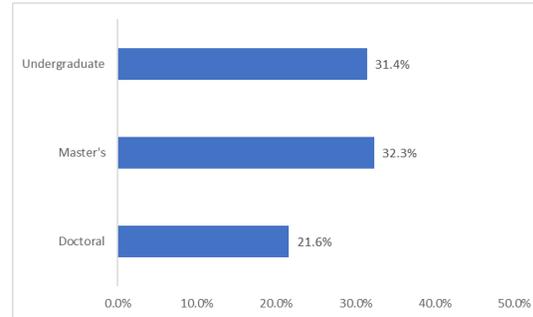


Figure 1. Prevalence of Food Insecurity by Degree Level

FI was significantly lower in doctoral students ($P < 0.05$) compared to undergraduate and master's students.

A series of logistic regression models (Table 1) indicated that the main **socio-economic predictors** for FI in **undergraduates** are age, race (Black & Hispanic), citizenship, being LGBTQ+, having loans and being a first-generation college student ($P < 0.05$); in **master's** students they are age, race (Black) and having loans; and in **doctoral students** are being a first-generation college student and having loans.

Table 1. Logistic Regression Model Examining Socio-economic Variables and FI by Degree Level

	Undergraduate		Master's		Doctoral	
	OR	95% CI	OR	95% CI	OR	95% CI
Age	1.08***	1.05 – 1.10	0.96*	0.93 – 0.99	1.00	0.95 – 1.05
Sex	1.08	0.93 – 1.13	1.18	0.76 – 1.85	0.92	0.48 – 1.76
Race						
White	-	-	-	-	-	-
Black	1.94***	1.40 – 2.67	3.20***	1.68 – 6.08	1.02	0.19 – 5.50
Hispanic	1.36*	1.08 – 1.71	1.41	0.81 – 2.47	2.17	0.79 – 5.96
Asian	1.17	0.99 – 1.38	1.70	0.86 – 3.35	1.73	0.73 – 4.10
Other	1.21	0.87 – 1.71	1.76	0.74 – 4.20	2.16	0.68 – 6.90
Citizenship	1.89***	1.40 – 2.53	1.00	0.51 – 1.97	1.11	0.50 – 2.48
LGBTQ+	1.40**	1.15 – 1.68	0.94	0.57 – 1.56	1.43	0.66 – 3.12
First Gen. Students	1.52***	1.30 – 1.79	1.11	0.75 – 1.64	2.91**	1.55 – 5.47
Loans	1.72***	1.48 – 2.01	2.46***	1.61 – 3.76	3.40*	1.17 – 9.87
Financial aid	1.02	0.88 – 1.18	0.76	0.51 – 1.15	0.89	0.31 – 2.56

* $p < .05$, ** $p < .01$, *** $p < .001$. Variables were coded as: Age (continuous variable), Sex (0 = male, 1 = female), Citizenship (0 = US citizen, 1 = International student), LGBTQ+ (0 = cis/hetero, 1 = LGBTQ+), First generation college student (0 = not first generation, 1 = first generation), Loans (0 = no, 1 = yes), Receiving financial aid (0 = no, 1 = yes). For race, Black (0 = no, 1 = yes), Hispanic (0 = no, 1 = yes), Asian (0 = no, 1 = yes), Other (0 = no, 1 = yes), and White is the reference group.

Conclusions

- 1) Prevalence and socio-economic predictors of FI are different between degree levels with undergraduates and master's students having the highest prevalence and undergraduates having the most significant predictors.
- 2) The logistic regression model indicates that having loans is FI predictor in all levels, suggesting that funding mechanisms play an important role in FI in college students.
- 3) FI interventions on campus should be tailored by degree level due to the different prevalence and socio-economic FI predictors at each degree level.

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