Food Insecurity among University Students:
Choosing between education and food

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BACKGROUND:

University communities strive to be inclusive by providing environments that maintain student health and well-being. Food insecurity hinders health and well-being and may disproportionately affect vulnerable student groups. University students experiencing financial pressure due to high tuition fees may not be able to meet other basic needs. We examined the incidence and demographic predictors of food insecurity among university students.

Goal of this Analysis:

* To further examine socio-demographic factors associated with food insecurity among university students at all levels of education

METHODS:

* Cross-sectional community-based survey
* Self-administered questionnaire
* Surveys were completed on a electronic tablet or on paper
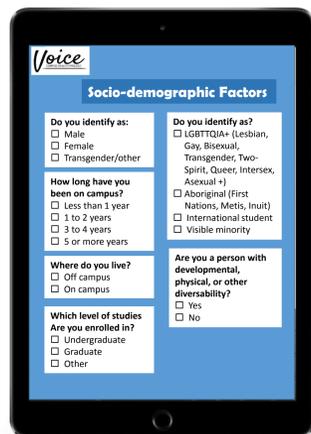
Participants
* Convenience sample of graduate and undergraduate university students at the University of British Columbia, Kelowna, BC
* We aimed to survey approximately one third of the campus population (~3000)
* No exclusion criteria

Measures
* Food insecurity was assessed by asking the question, "In the past 12 months, have you worried that food would run out before you got money to buy more food?" This is a validated question used in the 2014 Canadian Community Health Survey (CCHS).
* For this analysis students who answered "sometimes" or "often" were classified as food insecure.

METHODS (cont'd):

Analysis
* Frequency analysis were calculated on the food insecurity question and demographic categories.
* Bivariate analysis, using a Chi Square test, was used to determine if there was an association between food insecurity and socio-demographic variables of interest.
* Binary logistic regression was then conducted, using a backward (WALD) method, to determine the adjusted odds of having food insecurity for each significant correlate.
* An alpha level of 0.05 was deemed significant.

RESULTS:

* 3636 students participated.
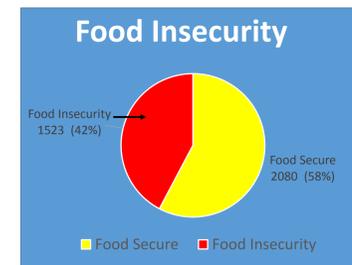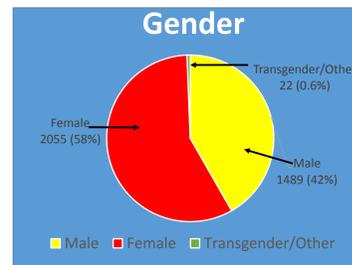* 42% reported sometimes or often worrying that food would run out before they get money to buy more.

Table 1: Bivariate between-group comparison of socio-demographic factors

		Food Secure n (%)	Food Insecure n (%)	P Value
Gender: Do you identify as:	Male	898 (43%)	575 (38%)	
	Female	1134 (55%)	906 (60%)	0.006
	Transgender/Other	37 (2%)	29 (2%)	
How long have you been on campus?	Less than 1 yr	727 (35%)	477 (31%)	
	1 -2 yrs	549 (26%)	424 (28%)	0.14
	3-4 yrs	664 (32%)	505 (33%)	
	5 or more yrs	140 (7%)	116 (8%)	
Where do you live?	Off campus	1643 (80%)	1136 (75%)	0.005
	On Campus	416 (20%)	374 (25%)	
Which level of studies are you enrolled in?	Undergraduate	1985 (95%)	1468 (96%)	
	Graduate	75 (4%)	43 (3%)	0.363
	Other	20 (1%)	12 (1%)	
Are you a person with a developmental, physical, or other diversability?	Yes	101 (6%)	143 (10%)	
	No	1793 (92%)	1219 (85%)	<0.001
	Prefer not to answer	57 (1%)	78 (5%)	
Do you identify as LGBTTQIA+ (Lesbian, Gay, Bisexual, Transgender, Two-Spirit, Queer, Intersex, Asexual +)	Yes	108 (5%)	103 (7%)	
	No	1972 (95%)	1420 (93%)	0.05
Do you identify as Aboriginal?	Yes	101 (5%)	85 (6%)	
	No	1979 (95%)	1438 (94%)	0.36
Do you identify as international student?	Yes	224 (11%)	226 (15%)	
	No	1856 (89%)	1297 (85%)	<0.001
Do you identify as visible minority?	Yes	248 (12%)	232 (15%)	
	No	1832 (88%)	1291 (85%)	0.004

RESULTS (cont'd):

* Females and transgender/other were less likely to experience food insecurity than men.
* Students were 1.5 more likely to experience food insecurity if they belong to a minority group, were international students, are LGBTTQA+ or live on campus.
* Students were twice as likely to experience food insecurity if they have a developmental, physical, or other diversability.
* The chances of becoming food insecure increases the longer students are enrolled as a student.

Table 2: Socio-demographic predictors of food insecurity among university students

Demographic Characteristic	Unadjusted Odds Ratio (95% confidence interval)	Adjusted Odds Ratio (95% confidence interval)	p value
Gender (REF=Male)			
Female	0.80 (0.70-0.92)	0.79 (0.68-0.91)	0.001
Transgender/Other	0.98 (0.60-1.61)	0.80 (0.44-1.48)	0.48
Visible Minority (REF=No)			
Yes	1.33 (1.10-1.61)	1.45 (1.15-1.82)	0.002
International Student (REF=No)			
Yes	1.44 (1,19-1.76)	1.43 (1.14-1.78)	0.002
LGBTTQA+ (REF=No)			
Yes	1.32 (1.00-1.75)	1.41 (1.02-1.95)	0.035
Diversability (REF=No)			
Yes	2.08 (1.60-2.71)	1.98 (1.51-2.60)	<0.001
Living Location (REF=Off Campus)			
On Campus	1.30 (1.11-1.52)	1.35 (1.12-1.63)	0.002
Length of Time as Student (REF= Less than 1 year)			
1-2 years	1.18 (1.00-1.40)	1.29 (1.07-1.56)	0.008
3-4 years	1.20 (1.00-1.40)	1.29 (1.07-1.55)	0.008
5 or more years	1.26 (1.00-1.66)	1.42 (1.05-1.92)	0.021

DISCUSSION:

* The overall prevalence of students who experienced food insecurity in the last 12 months was 42%. These results are similar to other recent campus reports in Canada, and higher than the general population. It appears that current supports (e.g., campus food cupboard) are not meeting the need.
* Students who are already marginalized from society due to being a visible minority, LGBTTAQ+ and having diversability traits are particularly vulnerable to experiencing food insecurity.
* The high cost of food and housing may be impacting the inclusivity of access to food among marginalized groups.
* Previous research has shown that food insecurity impacts academic performance and often leads to prematurely dropping out of school. Both of these effects contribute to increased socio-economic inequities.
* Distributive justice approaches are required to ensure marginalized groups have equal access to the food they require to successfully reach their academic and career goals.