

# Factors Associated with Food Insecurity among WCU Students

**Mary Beth R. Gilboy, PhD, MPH,  
RD, LDN**  
Associate Professor of Nutrition

**Lynn Monahan Couch, DCN,  
MPH, RDN, LDN**  
Associate Professor of Nutrition

**Ashlie B. Delshad, PhD**  
Associate Professor of Political  
Science

**Jodi Roth-Saks, MA**  
Executive Director  
Jewish Relief Agency

**Tori Nuccio, MS**  
Assistance Director of  
Financial Aid

# What is food insecurity?

- ▶ ***Food Insecurity – USDA redefined as***
  - ▶ **Low food security:**
    - ▶ Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
  - ▶ **Very low food security:**
    - ▶ Reports of multiple indications of disrupted eating patterns and reduced food intake.

# Food insecurity research college students

- ▶ At University of Manoa in Hawaii, 21% reported reduced food intake due to financial limitations. (Chaparro, 2009)
- ▶ 39% at CUNY reported food insecurity (Freudenberg, 2011)
- ▶ 59% at Western Oregon University were food insecure during the previous year (Patton-Lopez, 2014).
- ▶ At University of Massachusetts, students with very low security reported it affected class attendance (58.6%), class performance (87.5%) (Silva et al. 2015).
- ▶ 27% at University of Wisconsin reported not having enough money to buy food within the last month. (Broton, et al. 2016).

## Purpose of study

This study aims to investigate the prevalence of food insecurity among college students at WCU using a cross-sectional survey design

### ▶ OBJECTIVES

- ▶ To assess the prevalence of food insecurity among students at WCU.
- ▶ To evaluate the factors associated with food insecurity, such as demographics and socioeconomic status on food insecurity status among students at WCU.

# Pilot Study

- ▶ Smaller scale, preliminary study.
- ▶ Asked additional questions on design, readability, etc.
- ▶ Online survey, 57 items.
- ▶ Convenience sample:
  - ▶ Students enrolled in Community Nutrition course.
- ▶ Survey Sections :
  - ▶ Food security (USDA)
  - ▶ Housing / Income
  - ▶ Employment
  - ▶ Demographics



# Methods – the Sample

## ▶ Stratified Random Sample

- ▶ We worked with Institutional Research to identify a sample that was representative of the University.
- ▶ We stratified by gender, age, race/ethnicity, college and Pell grant status.

## ▶ Sample

- ▶ Student body of 17,306
  - ▶ Expected response rate of 10%
- ▶ Needed a sampling pool of 7,216 undergraduate and graduate students

# Methods – the Instrument

- ▶ 43-item survey included
  - ▶ 6-item USDA Food Security Survey Module
  - ▶ Other items on
    - ▶ Food assistance programs
    - ▶ Meal plan
    - ▶ Income, finances, financial aid
    - ▶ Housing status
    - ▶ Demographics
    - ▶ First generation students
- ▶ Survey based on the 2014 study by Patton-Lopez
- ▶ Questions added on housing, finances, food assistance
- ▶ And whether respondent ever used the WCU Resource Pantry

# Procedures

- ▶ IRB approval
- ▶ Survey hosted by Qualtrics
- ▶ Email list of the sample created
- ▶ Invitation to participate email sent to all of sample
- ▶ Informed consent
- ▶ 10-15 minutes estimated to complete survey
- ▶ To increase response rate, 2 follow up emails sent to non-respondents
- ▶ Incentives



## Results: Participant Demographics

- ▶ Of the 7216 students emailed the survey, 26% (1874) responded.
- ▶ We worked with institutional research to ensure representativeness as much as possible

Characteristics	Survey Sample	
	N	n (%)
Undergraduate	1505	1237 (82.2)
Graduate		268 (15.8)
Full-time	1503	1362 (90.6)
Part-time		141 (9.4)
Served in Military	1501	29 (1.9)
Sex	1502	
Male		389 (25.9)
Female		1091 (72.6)
Age	1506	
18 - 24 years		1271 (84.4)
25 - 30 years		133 (8.8)
Race/Ethnicity	1502	
White		1210 (80.6)
Black		129 (8.6)
Hispanic		58 (3.9)
Other		41 (2.7)

## Results: Food Insecurity Prevalence

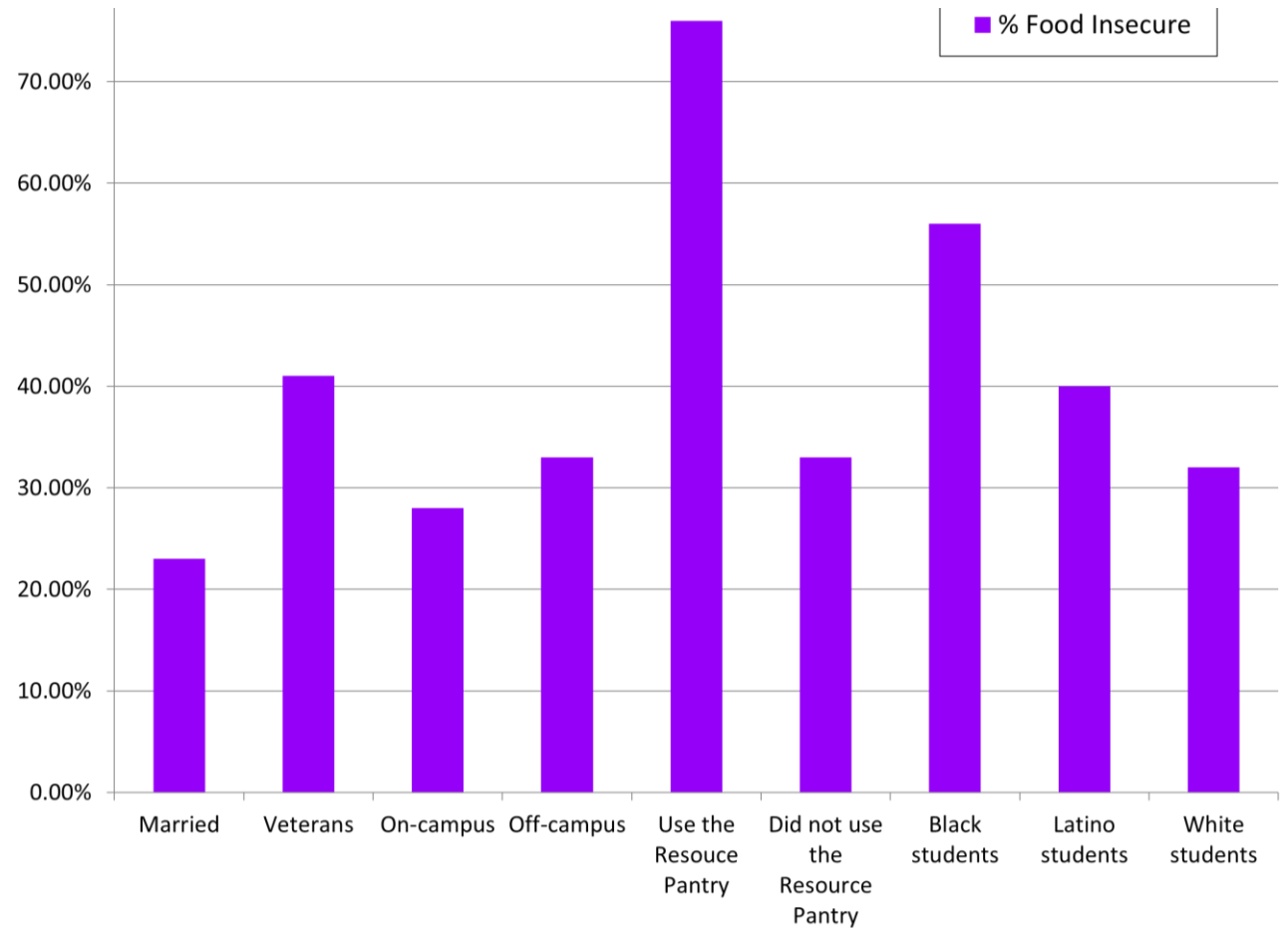
- ▶ In our dichotomous measure (yes to 2+ questions) food insecurity was 31.6%
  - ▶ This is on-par with national averages
  - ▶ Of this 11.6% can be classified as having very low food security (answered yes to 5+ questions)

Food Insecurity Levels:		
# of FI Questions Answered "Yes"	Frequency	Percent
0	1060	56.6
1	220	11.7
2	152	8.1
3	120	6.4
4	104	5.5
5	92	4.9
6	126	6.7
Total	1874	100

## Results: Food Insecurity Among Select Groups

- ▶ High rates among:
  - ▶ Veterans
  - ▶ Non-white students\*
  - ▶ Female Students\*
  - ▶ Pantry Users

\*Were significant at  $P < .05$  level (Chi2)



# Key Findings: Multivariate Analysis (Logit)

► The odds of a non-white student being food insecure are 1.43 times higher than that of a white student

► The odds of a student whose income is greater than \$10,000 being food insecure are .47 times lower than that of a student whose income is less than \$10,000

	Coefficient	Odds Ratio
Non-white	0.36**	1.43
Has received federal/state grants	0.49***	1.63
Has moved 2+ times	1.08***	2.95
Income 10,000+	-.753***	.47
Has participated in food aid programs	0.29**	1.34
Constant	-1.73	0.18

\*\*p<.01, \*\*\*p<.001

# Results: Needs Beyond Food

## What % of food insecure students...

Had a job in the last 12 months?*	91.6
Decided not to pay certain bills?	16.2
Did not pay rent in full because not enough money	12.6
Needed to borrow money	51.2
Slept in an automobile	7.4
Slept on someone's couch	20.7
Hotel	10
Emergency shelter	1.1

# Implications and Action Items

- ▶ We can use these results to direct interventions and services towards student populations more likely to experience food insecurity
  - ▶ Students of color
  - ▶ Students who are financial aid eligible and/or very low income
- ▶ The Resource Pantry is a venue many food insecure students at WCU are utilizing
  - ▶ We should be supporting and expanding the reach of pantry
- ▶ We should be working with key actors on campus such as Aramark, as well as state and federal policymakers to develop additional interventions, multiple models exist at other universities and the K-12 level:
  - ▶ Swipe out hunger
  - ▶ Broader food stamp access
  - ▶ Free/reduced meal plans

\*Of the students who use our university Food Pantry, 64% also received free or reduced meals in high school, 26% participated in WIC and 36% reported receiving SNAP benefits
- ▶ While our research primarily focuses on food insecurity ours and other research suggests that students suffer from broader basic needs insecurity.