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Wish4Campus: Local and Regional Investigation of Food Insecurity and Associated Behavioral Characteristics Among College Students

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Introduction

- Food insecurity (FI) is more prevalence in the college population compared to national average.
- To investigate the impact of FI on college students we:
 - assessed the prevalence of FI among students at seven Appalachian and Southeastern universities
 - investigated the relationship between FI and behavioral characteristics including academic performance (AP), coping strategies (CS), and money expenditure (ME).

Methods

- Recruitment and incentive of college students varied at universities (Table 1)
- College students completed a 56-item survey assessing FI prevalence, CS, AP, and ME scales and demographic variables (Figure 1)
- Assessed for significance in bivariate analysis and significant or trending ($p < 0.09$) variables were entered into a multivariate forward selection logistic regression model

University	Recruitment	Incentive
West Virginia University	Email to professors	Drawing for one \$100 gift card
University of Tennessee	Email to all students via listerv with reminders	Drawing for 8 \$100 gift cards
University of North Carolina – Chapel Hill	Email to all students via listerv with reminders	Drawing for 1 \$100 gift card
Appalachian State University	Email to random students	Drawing for 2 \$100 gift cards
Western Carolina University	Email to all students	N/A
Mississippi State University	Email announcement to campus	Drawing for 1 \$50 gift card
The University of Southern Mississippi	Flyers around campus, email announcement	Drawing for 5 \$25 gift card to campus dining

Table 1: University recruitment and incentive

USDA Adult Food Security Screener

- 10-item
- Behaviors and conditions regarding food purchasing and intake
- More than 3 affirmative responses = FI

Money Expenditure Scale

- 8-item
- How often in the past 12 months students spent money on other items instead of using the money to purchase food
- Topics included substance purchases, transportation, pet care, and tattoos

Coping Strategies Scale

- 29-item
- How often students used coping strategies in the past 12 months
- Topics included saving, support, food intake/access and selling

Academic Performance Scale

- 4-item
- Self-reported perception of academic performance
- Topics included class attendance, attention span, understanding of concepts, and progression towards graduating on time

Figure 1: Description of survey measures

Results

- Surveys were completed by 13,053 students
 - Lacking a full response to the USDA screener were excluded resulting in a final sample of **12,479**
- FI prevalence at the 7 institutions ranged from 22.4% to 51.8%. (Figure 2)

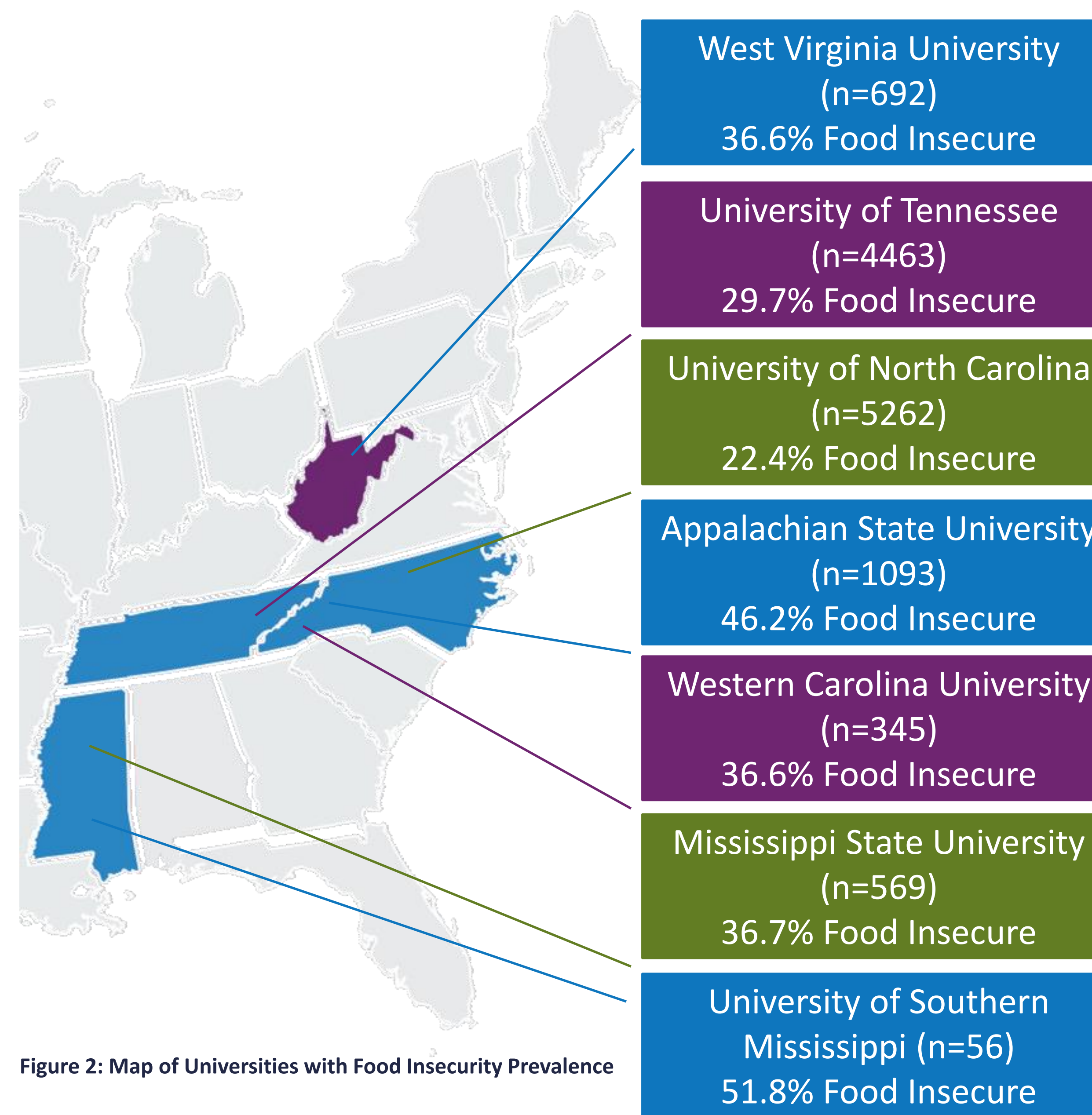


Figure 2: Map of Universities with Food Insecurity Prevalence

Multivariate Forward Selection Logistic Regression

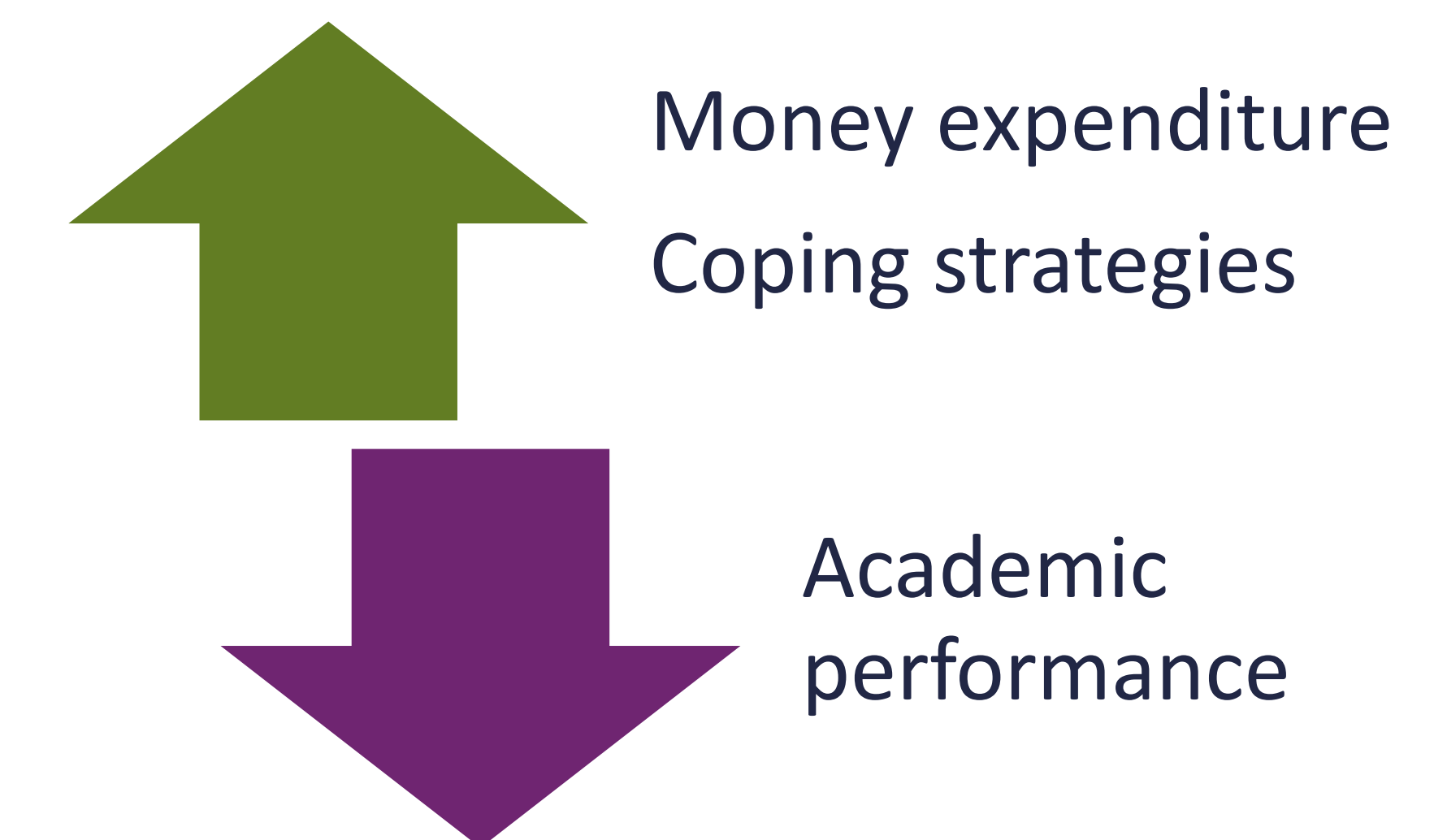
- Results showed ME, CS, AP, ethnicity, car ownership, financial aid, health status, and cooking frequency were significant predictors of FI (Table 2)

Variable	Odds Ratio	Confidence Interval	P-Value
Money Expenditure	1.53	1.46-1.61	<0.0001
Coping Strategies	1.20	1.19-1.21	<0.0001
Academic Performance	0.91	0.88-0.95	<0.0001
School Year			<0.0001
sophomore vs graduate	1.91	1.53-2.38	
junior vs graduate	1.60	1.31-1.96	
senior vs graduate	1.35	1.10-1.65	
Ethnicity			<0.0001
black vs white	2.13	1.61-2.82	
multiracial vs white	1.38	1.05-1.81	
Car Ownership	1.46	1.23-1.73	<0.0001
Financial Aid	1.30	1.12-1.52	=0.0005
Health Status	1.46	1.20-1.77	<0.0001
Cooking Frequency			=0.0017
sometimes vs never	1.20	1.03-1.40	
often vs never	1.54	1.21-1.97	

Table 2: Odds ratio of significant predictors of food insecurity from multivariate logistic regression

Conclusion

- These findings show FI is prevalent among college students in the Appalachian and Southeastern regions at rates higher than US national average
- Results suggest behavioral differences in terms of coping strategies, money expenditure, and academic progress among food insecure students



- Students' of sophomore and junior status are most at risk, suggesting need for assistance after freshman year
- The associated correlates and behavioral characteristics can be used to develop targeted interventions to promote student well-being

Discussion

- The behaviors of young adult college students are essential for success and degree retention, with numerous students leaving college without successful degree completion
 - Financial burden to both the university and the student
- Providing for the basic needs of students and fostering positive behaviors would promote student success and are important avenues for addressing food insecurity on college campuses
- University administrators and public health experts can benefit from this information through targeted interventions for promoting academic success

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