

BARRIERS TO FRUIT & VEGETABLE CONSUMPTION FOR LOW-INCOME HISPANICS WITHIN FRESNO CO

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OBJECTIVE

- ✘ Introduction
- ✘ Statement of Problem
- ✘ Background Literature
- ✘ Study Design
- ✘ Results
- ✘ Discussion
- ✘ Future
Recommendations



INTRODUCTION

- ✘ Diets rich in fruit and vegetables promote a variety of health benefits:
 - + Decreased risk for certain cancers
 - + Treating/preventing metabolic syndrome
 - + Reduced risk for heart disease and diabetes
 - + Improved weight management
- ✘ Only 28% of Americans → 2 or more servings fruit per day¹
- ✘ Only 49% of Americans → 3 or more servings vegetables per day¹

INTRODUCTION

✘ Hispanics

- + Largest minority in Fresno Co at 50.3%²
- + Higher rates for DMT2, cancer, CVD, obesity³

✘ Food insecurity

- + Fresno Co is 21.6%¹
- + National average is 16.6%¹
- + Factors that contribute to food insecurity:
 - ✘ Low Income
 - ✘ Transportation
 - ✘ Low education level
 - ✘ Limited access to supermarkets
 - ✘ Non-participation in food assistance programs

✘ Fresno Co → 36% incomes below 200% Fed poverty level¹⁰

CORRELATES OF AVAILABILITY AND ACCESSIBILITY OF FRUITS AND VEGETABLES IN HOMES OF LOW-INCOME HISPANIC FAMILIES⁴

✘ Objective:

- + Cross-sectional study to examine the association between parental factors, child's preferences for FV and AA of FV in homes of low-income Hispanic families with children 5–12 years old

✘ Methods:

- + A convenience sample of 184 parents
- + Parental factors and child's preferences were measured using a 16-item questionnaire
- + AA of FV was measured using a validated nine-item index

✘ Results:

- + Language spoken at home, parental practices that promote consumption of FV, parental role modeling and perceived benefits of fast food had significant and independent associations with AA of FV at home

✘ Conclusions:

- + Intervention programs should take into consideration the language spoken at home and target at improving parental factors in order to improve AA of FV.

NEIGHBORHOOD SOCIOECONOMIC STATUS AND FRUIT AND VEGETABLE INTAKE AMONG WHITES, BLACKS, AND MEXICAN AMERICANS IN THE UNITED STATES⁵

✘ Objective:

- + Examined associations between f/v intake and neighborhood socioeconomic status (SES),
- + Analyzed whether neighborhood SES explains racial differences in intake

✘ Methods:

- + Used the Third National Health and Nutrition Examination Survey to merge individual-level data with county and census tract-level US Census data.
- + Estimated 3-level hierarchical models predicting fruit and vegetable intake with individual characteristics and an index of neighborhood SES as explanatory variables.

✘ Results:

- + Neighborhood SES was positively associated with fruit and vegetable intake

✘ Conclusions:

- + The positive association of neighborhood SES with fruit and vegetable intake is one important pathway through which the social environment of neighborhoods affects population health and nutrition for whites, blacks, and Hispanics in the United States.

UNDERSTANDING BARRIERS AND FACILITATORS OF FRUIT AND VEGETABLE CONSUMPTION AMONG A DIVERSE MULTI-ETHNIC POPULATION IN THE USA⁶

✘ Objective:

- + Examined the barriers and enablers to F&V intake among adult multi-ethnic populations.

✘ Methods:

- + 147 participants (African American, Hispanic and Caucasian men and women) in North Carolina and Connecticut
- + Twelve focus groups → participants' perceptions of impediments and enablers of f/v consumption

✘ Results:

- + Individual impediments consisted of the high costs of F&V and a perceived lack of time. Early home food environment was perceived as affecting F&V consumption later in life. Hispanic participants, mostly immigrants, cited inhibiting factors encountered in their adopted US environment.

✘ Conclusions:

- + There is a need to improve the availability and access to fresh F&V commonly available in the home countries of Hispanic immigrants.

NOT ENOUGH FRUIT AND VEGETABLES OR TOO MANY COOKIES, CANDIES, SALTY SNACKS, AND SOFT DRINKS?⁷

✘ Objective:

- + Contrasted physical activity, f/v consumption, and discretionary calorie consumption from selected foods

✘ Methods:

- + Cross-sectional (dietary recall) survey in 228 urban census tracts in Los Angeles County (LAC) and Southern Louisiana (SL)
- + 2,767 participants

✘ Results:

- + Calories from candy, cookies, salty snacks, soda and alcohol was 438 in LAC and 617 in SL
- + Mean f/v consumption fell 10% short in LAC and 20% in SL

✘ Conclusions:

- + Overconsumption of discretionary calories > underconsumption of f/v
- + Physical activity and increased f/v consumption will have limited impact on obesity unless overconsumption of discretionary calories is decreased

FRESNO FRESH ACCESS COMMUNITY FOOD ASSESSMENT REPORT⁸

✘ Objective:

- + Discover availability, accessibility, affordability barriers of f/v consumption

✘ Methods:

- + 80 surveyors
- + 850 survey-assessments of consumers, 131 retail store surveys

✘ Results:

- + Shopping: 20% rely on “convenience” stores
- + Transportation: 33% do not have a car, 18% carpool, 6% public transportation, 9% walk
- + Barrier: 30% cost, 11% quality, 6% transportation
- + Food insecurity: 23% difficulty (32% f/v most difficult)

✘ Conclusions:

- + Availability, accessibility, and affordability play important roles in f/v consumption
- + Increasing fresh produce at neighborhood markets, new farmers markets, mobile vending will increase f/v consumption

FOOD STORE ACCESS AND HOUSEHOLD FRUIT AND VEGETABLE USE AMONG PARTICIPANTS IN THE US FOOD STAMP PROGRAM⁹

✘ Objective:

- + Among Food Stamp Program participants
- + Relationship between food store access and household f/v

✘ Methods:

- + 963 participants
- + 1 week food recall

✘ Results:

- + Participants less than 1 mile to grocery store had increased household use of f/v
- + > 5 miles to grocery store was inversely associated with f/v use by household

✘ Conclusions:

- + Environmental factors are directly related to dietary choice among low-income households
- + Nutrition programs and education are extremely important to effect dietary improvements

PROBLEM STATEMENT

- ✘ What barriers exist within the county of Fresno that affect the fruit and vegetable consumption of the low-income Hispanic population?



STUDY DESIGN

- ✗ 15 question survey
 - ✗ Spanish and English
- ✗ Factors in questions:
 - + Age and Gender
 - + Marital Status
 - + Education Level
 - + Monthly Income
 - + Household size
 - + Financial assistance received
 - + Consumption of F/V per day?
 - + Own a car



- + Transportation to grocery store
- + Grocery store trips per month
- + Distance to nearest grocery store
- + Grow F/V?
- + Enough prep time?
- + Health benefits of F/V?

STUDY DESIGN

✘ Participant Criteria:

- + Low-income Hispanic adult living within Fresno Co

✘ Surveyors:

- + Elizabeth Mondol, Undergraduate Student
- + Martha Acosta, University of California Cooperative Extension Employee

✘ Locations surveyed:

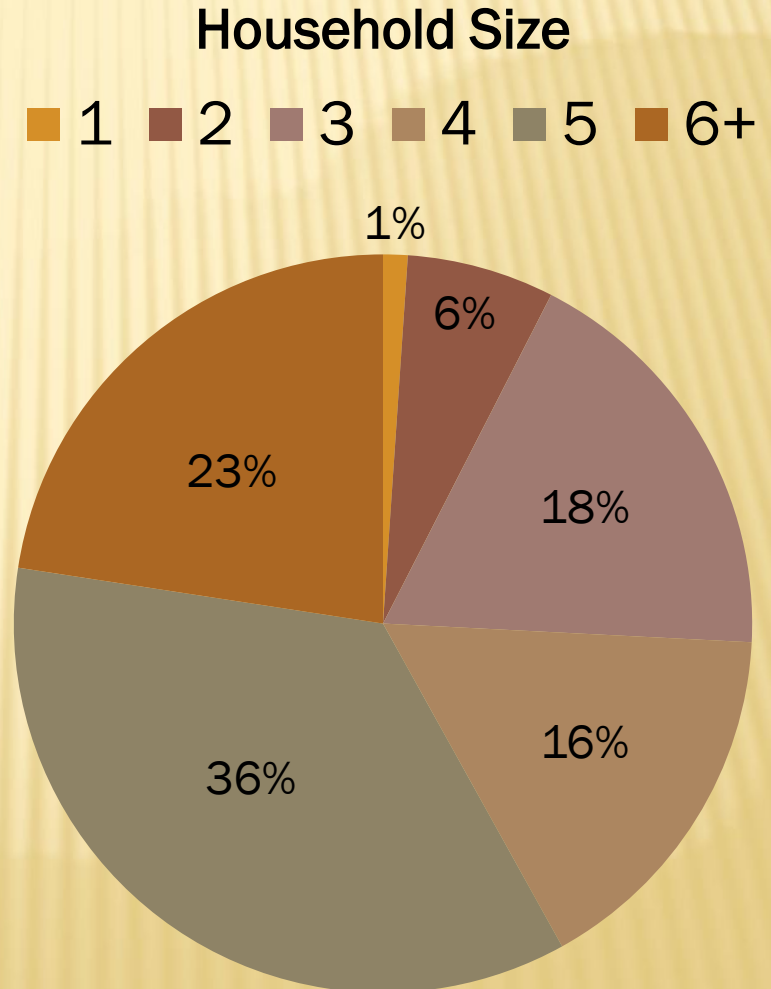
- + Bulldog Pantry
- + University of California Cooperative Extension Classes
 - ✘ Pregnancy Class in Kerman
 - ✘ Summer Park Apartments
 - ✘ Lincoln Elementary School Parents (Sanger)
 - ✘ Teague Elementary School Parents

RESULTS

✘ Population Demographics

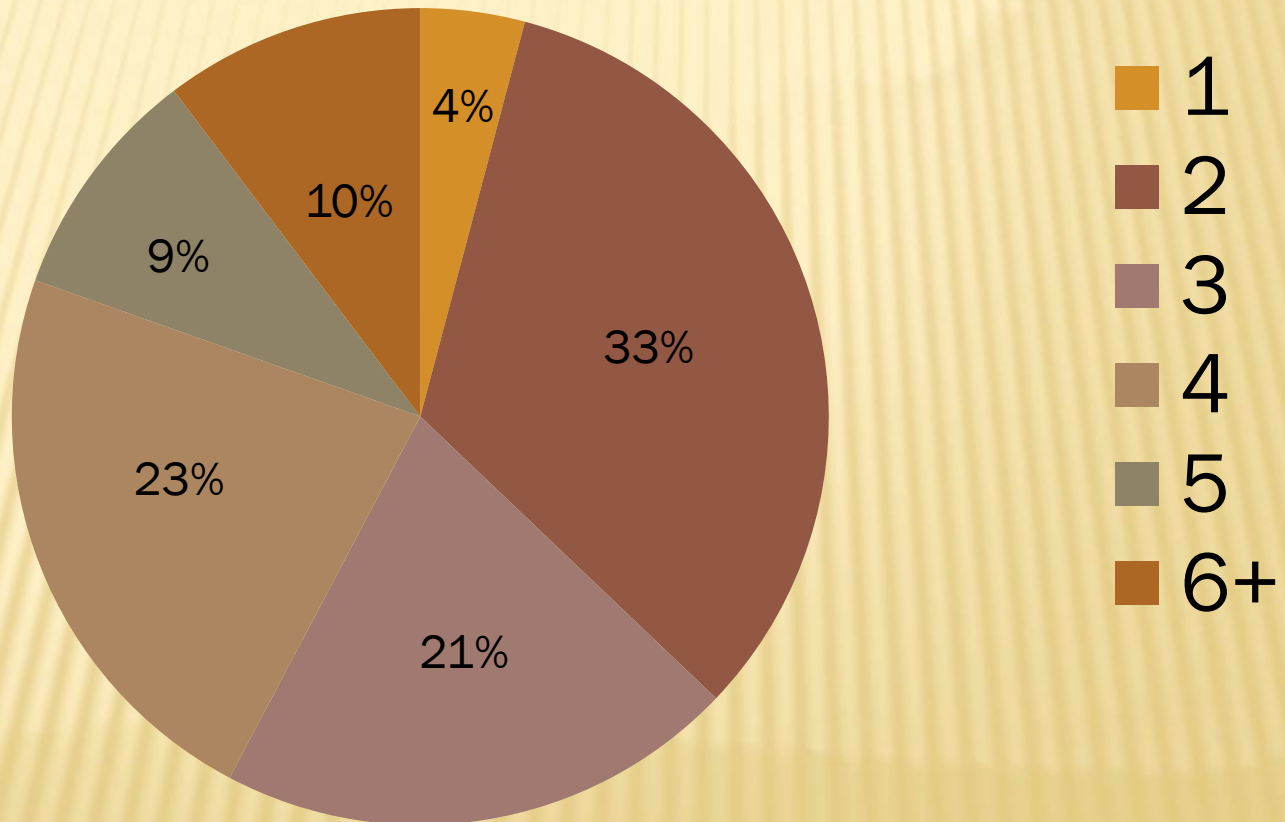
- + 106 surveyed
- + 100 used

- ✘ 83% female
- ✘ 65% married
- ✘ 56% received financial assistance
- ✘ 84% Spanish speaking only
- ✘ 70% owned a car



RESULTS

Grocery Store Trips Per Month



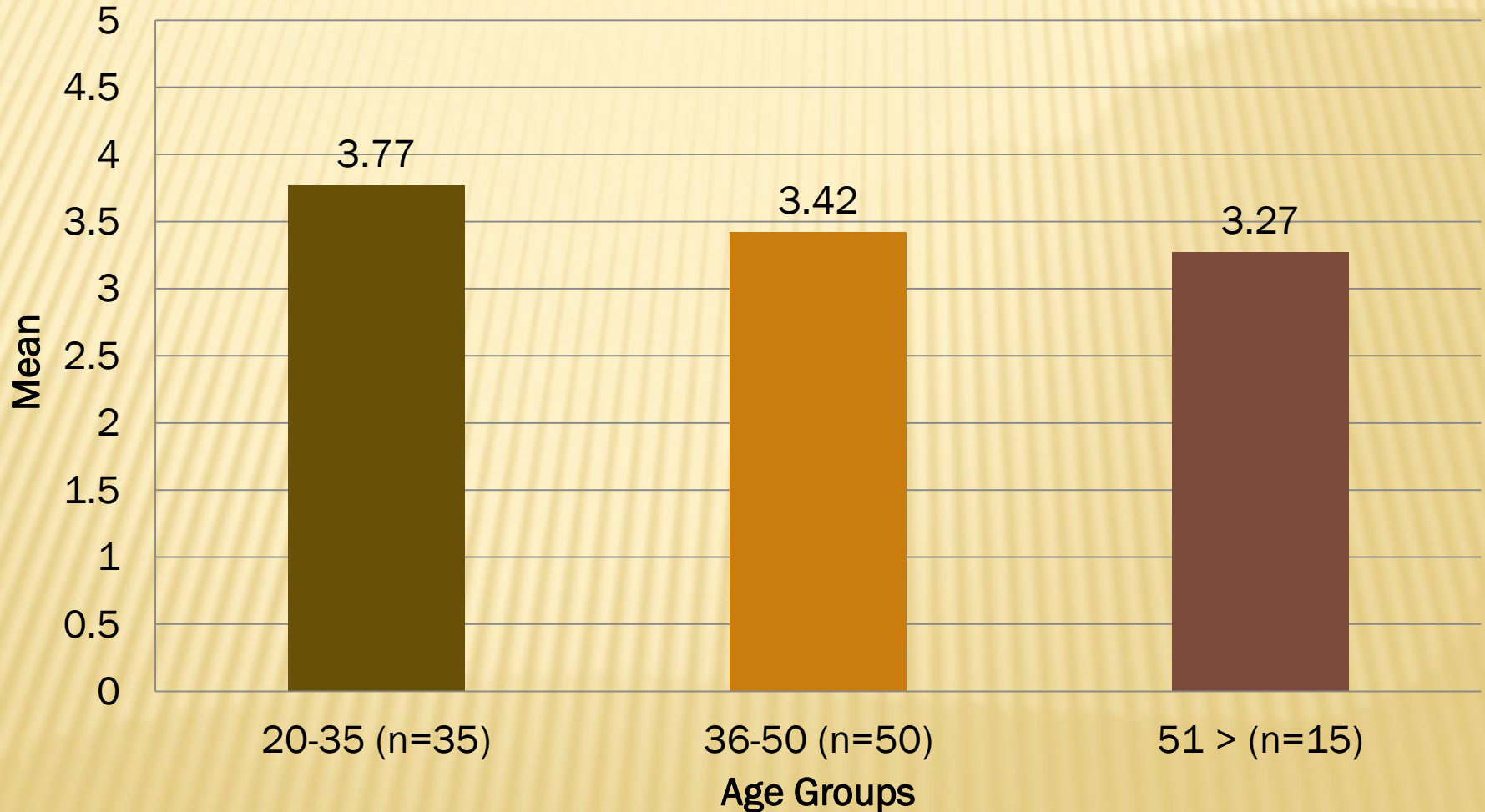
RESULT ANALYSIS

Servings of F/V	Numerical Value
Almost Never	1
Sometimes	2
1-2	3
3-4	4
5+	5



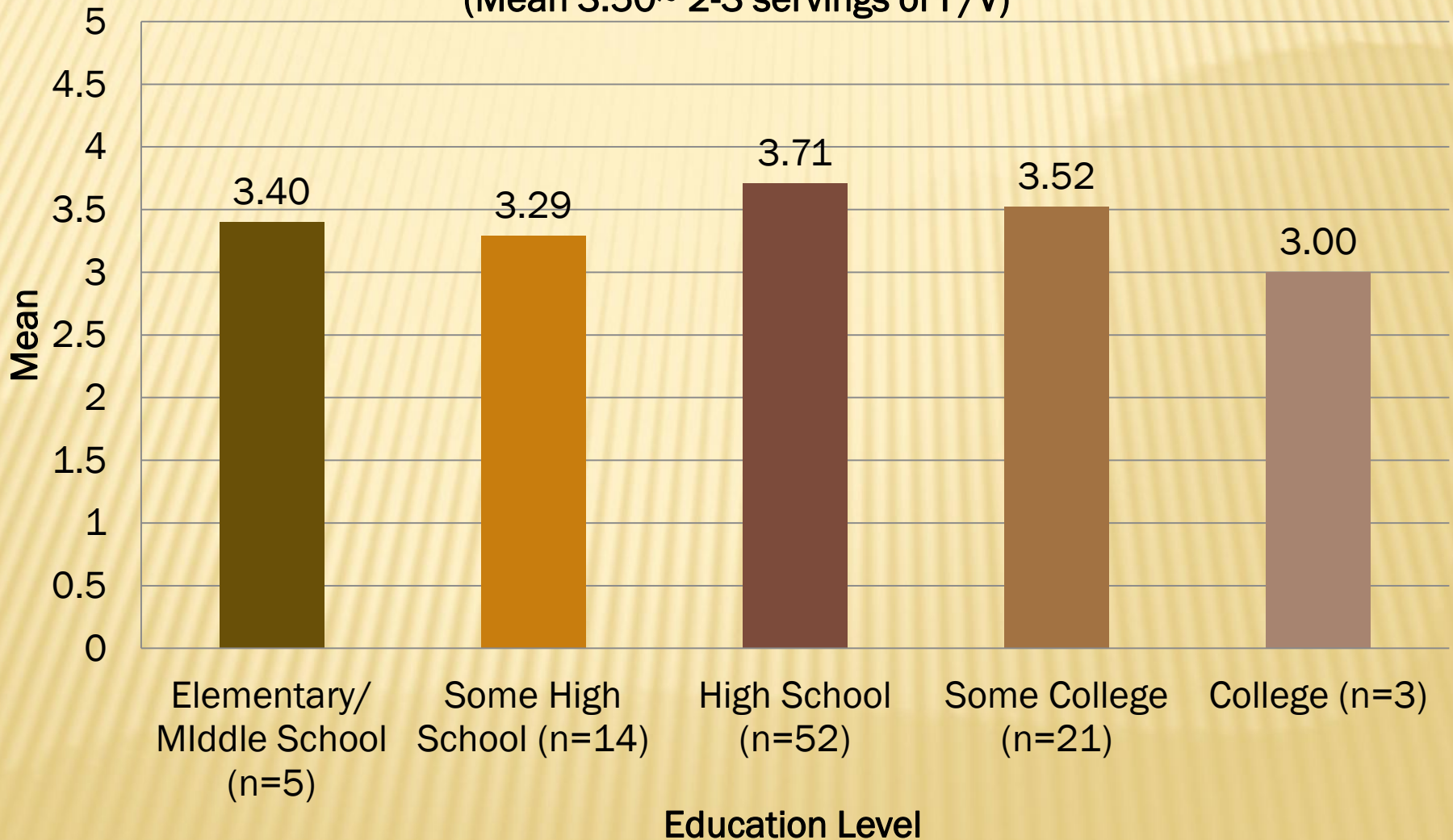
RESULTS

F/V Consumption Related to Age
(Mean 3.50 ~ 2-3 servings of F/V)



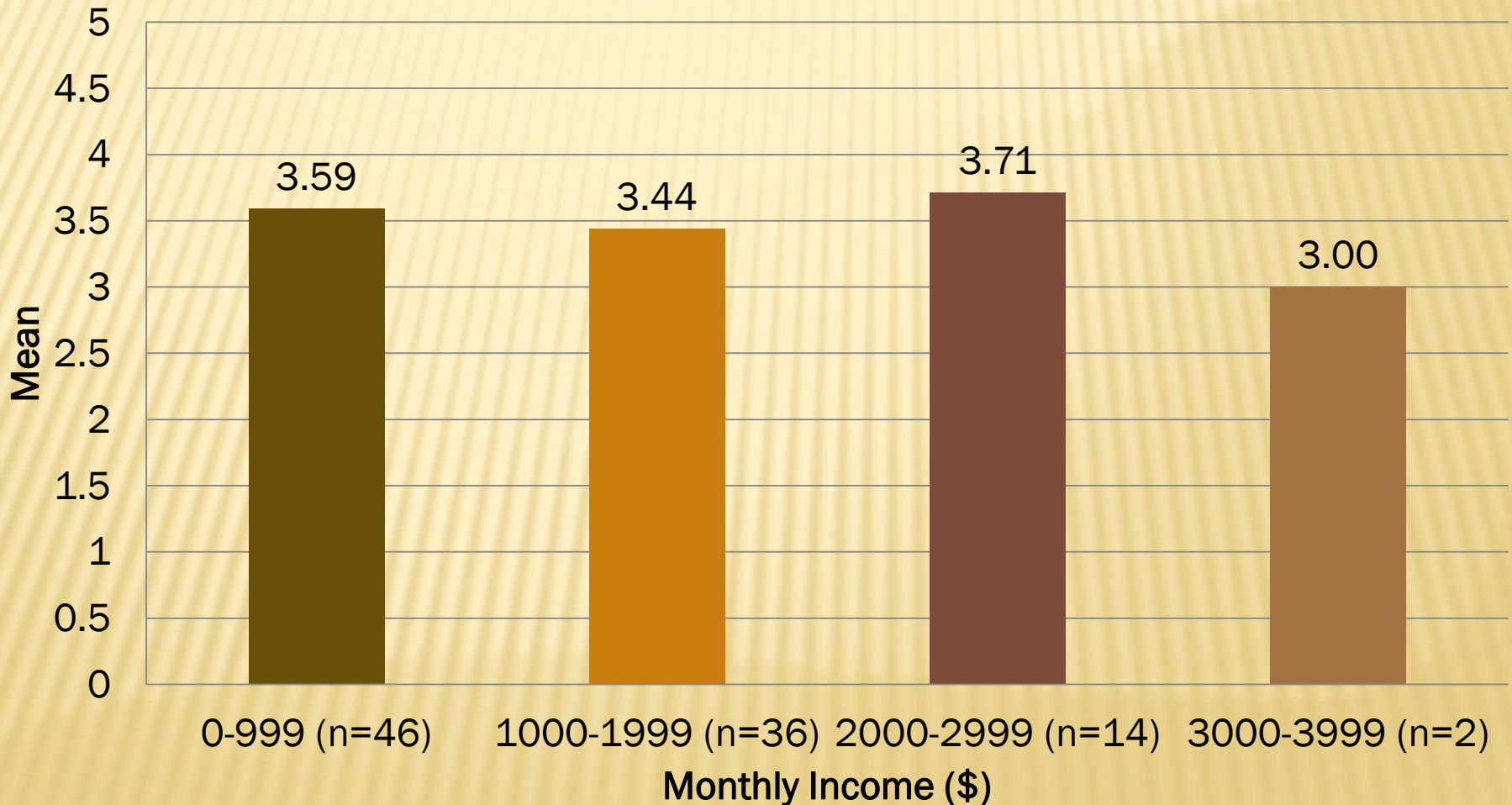
RESULTS

F/V Consumption Related to Education Level
(Mean 3.50~ 2-3 servings of F/V)



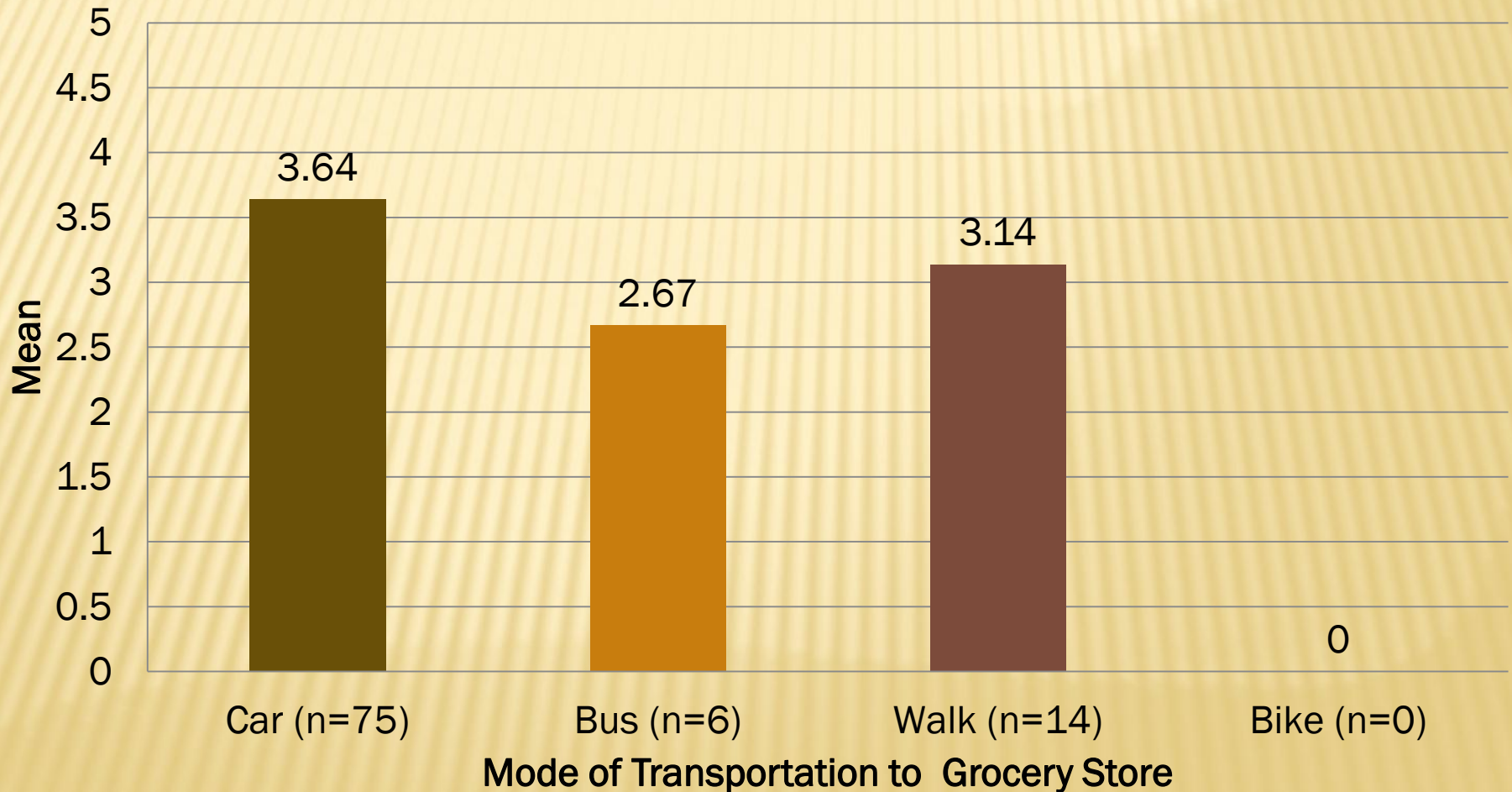
RESULTS

F/V Consumption Related to Monthly Income (Mean 3.50 ~ 2-3 servings F/V)



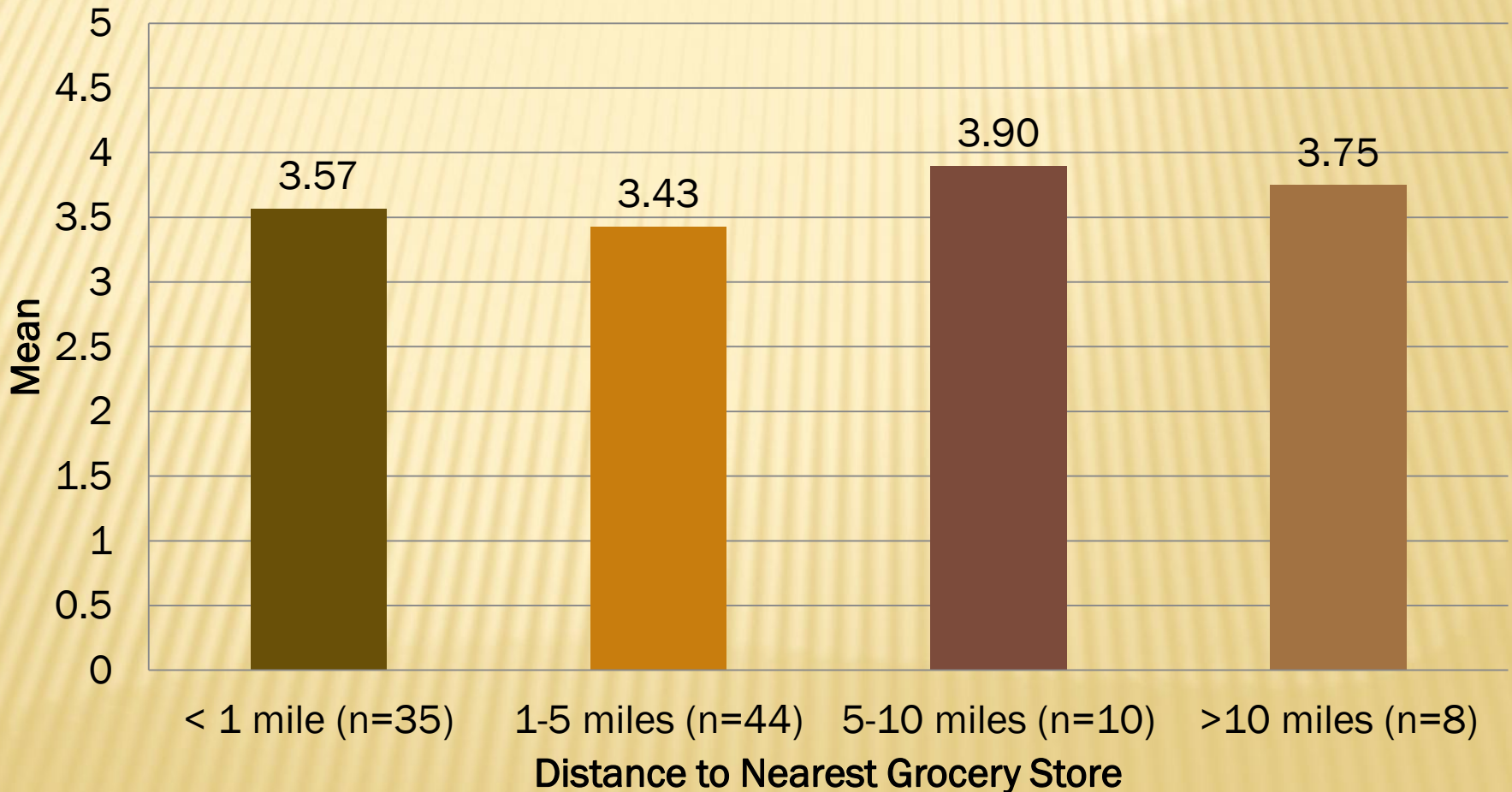
RESULTS

F/V Consumption Related to Mode of Transportation
(Mean 3.50 ~ 2-3 servings)



RESULTS

F/V Consumption Related to Distance to Grocery Store
(Mean 3.5 0~ 2-3 servings F/V)



RESULTS

F/V Consumption
Mean 3.50 ~ 2-3 servings

Question	Yes	No
Do you own your own car?	Mean 3.67	Mean 3.27
Do you grow your own F/V?	Mean 3.72	Mean 3.42
Do you have enough time to prepare F/V at home?	Mean 3.63	Mean 2.88

DISCUSSION

- ✘ NO barrier showed significant difference in adequate or inadequate fruit and vegetable consumption
- ✘ Trends:
 - ✘ Age
 - + Owning a car
 - + Growing fruit and vegetables
 - + Preparation time



DISCUSSION – LIMITATIONS

✘ Survey Limitations

- + Defining what serving of F/V
- + Specify if monthly income was individual or HH
- + Frequency of F/V consumption → more specific to eliminate vagueness

✘ Participant Limitations

- + Participants were provided food and/or education
 - ✘ Bulldog Pantry
 - ✘ UCCE Nutrition Education Classes

FUTURE RECOMMENDATIONS

✘ Outreach Programs

- + Develop programs to increase frequency of home gardens
- + Teach more convenient methods to prepare F/V



✘ Future Research

- + Correlation between type of employment or shift workers and F/V consumption
- + More in depth study into nutrition-related knowledge of target population
- + Does the season affect F/V consumption?

SPECIAL THANKS!

Elizabeth Mondol

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QUESTIONS?

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