Food Stamp Program Participation and Obesity Among Low Income Adults in Los Angeles County

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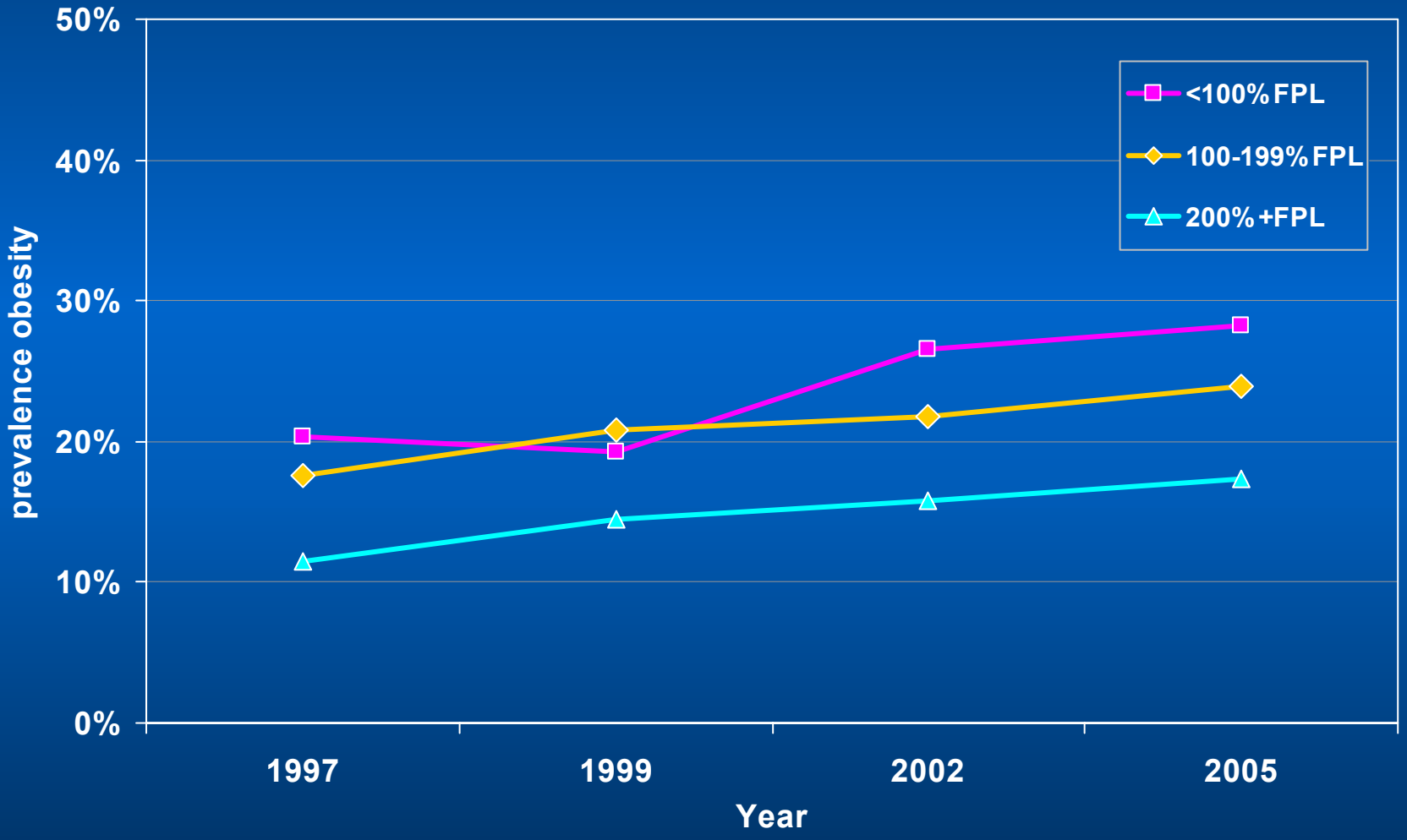
The Obesity Epidemic in Los Angeles County

- Prevalence of obesity among adults increased from 14.3% in 1997 to 20.9% in 2005
- Increase observed in men, women, and all racial/ethnic groups except Asians
- Prevalence of overweight among 5th, 7th, and 9th grade children increased 1% per year from 1999 (18.2%) to 2003 (22.1%)
- Increase observed in boys, girls, and all racial/ethnic groups except Pacific Islanders

Obesity Prevalence Among Adults by Federal Poverty Level



Food Stamp Program

- Largest nutrition program in the country; funded by USDA with state and local administrative support
- Program targets those living below 130% of the federal poverty level
- No restrictions on food and beverage purchases except no alcohol, tobacco, medicines/vitamins, or foods heated or eaten in the store
- 650,000 Food Stamp Program (FSP) participants (adults and children) in Los Angeles County
- Intensive outreach in the county to increase program participation

Food Stamp Nutrition Education

- Nutrition education and physical activity promotion funded by the USDA through state-administered grants
- The education must be directed to FSP participants and/or those eligible for Food Stamps
- Many restrictions on the use of these funds
  - Education materials cannot include negative messages about specific foods, beverages, or commodities
  - Cannot be used for initiatives that have the primary purpose of improving systems, environments, or policies
  - Cannot be used to support or influence legislation

Research Findings on Food Stamp Program Participation and Obesity

- FSP participation associated with 38% increased odds of overweight in women (Townsend, et al., 2001)
- FSP participation associated with obesity in women but not men (Gibson, 2003)
- Food insecure girls who participated in FSP had reduced odds of overweight; no association found for boys or for food secure girls (Jones, et al., 2003)
- Long-term FSP participation associated with simultaneous overweight in young daughters and obesity in mothers (Gibson, 2006)
- FSP participation contributed to weight gain among persistently food insecure women but not among other women (Jones & Frongillo, 2006)

Study Objectives

- To examine the relationship between obesity and FSP participation among low income adults in Los Angeles County
- To examine sociodemographic variation in obesity prevalence in this low income adult population
- To identify independent predictors of obesity in this population

Data Source

- 2005 Los Angeles County Health Survey, a countywide random-digit-dialed telephone survey conducted in seven different languages
- Response rate: 49%
- Data weighted to reflect the age, sex, and racial/ethnic distribution of the county population using 2004 census estimates
- Analysis restricted to adults (≥18 years old) who reported a household income below the federal poverty level (n=1,459)
- Additional 294 respondents excluded because of incomplete information on height and weight

Analysis

- Respondents were classified as obese if their BMI ≥30.0 based on self-reported height and weight
- Respondents were classified as FSP participants if they responded “yes” to the question “Are you currently receiving food stamps?”
- Other variables
  - –gender
  - –age
  - –race/ethnicity
  - –income
  - –education
  - –children in household
  - –food insecurity
  - –physical activity

Analysis (cont.)

- Bivariate analysis done to examine obesity prevalence across sociodemographic and behavioral sub-groups; differences in prevalence assessed for statistical significance with the Chi-square test
- Logistic regression used to:
  - assess relationship between FSP participation and obesity, controlling for confounders
  - identify independent predictors of obesity

Objective 1

Examine relationship between obesity and FSP participation among low income adults in the county

Obesity Prevalence Among FSP Participants vs. Non-participants

	No.	Prevalence %	p-value
FSP Participants	204	35.6	.009
Non-participants	927	27.2	

Comparison of FSP Participants and Non-Participants

	FSP Participants (n=204) %	Non-Participants (n=927) %
Sex**		
male	22.6	49.6
female	77.4	50.4
Age**		
18-49	90.3	71.9
50+	9.7	28.1
Race/Ethnicity**		
White	8.1*	12.2
Black	30.3	11.5
Latino	60.0	68.5
Asian/PI	1.6*	7.8

* unstable estimate

** $p<.05$

Comparison (continued)

	FSP Participants (n=204) %	Non-Participants (n=927) %
Education**		
<high school	43.5	42.5
high school graduate	27.1	28.0
some college/trade school	25.6	19.0
college graduate	3.8 *	10.5
Income**		
<10,000	63.7	45.7
≥10,000	36.3	54.3
Mean household size**	4.2	3.9

* unstable estimate
** p<.05

Comparison (continued)

	FSP Participants (n=204) %	Non-Participants (n=927) %
Children in household**		
yes	88.2	56.7
no	11.8	43.3
Food insecurity status**		
food insecure with hunger	15.5	15.4
food insecure without hunger	30.4	22.3
food secure	54.1	62.4
Physical activity		
sedentary	42.0	39.7
not sedentary	58.0	60.3

** $p<.05$

Relationship Between FSP Participants and Obesity: Results of Logistic Regression

Dependent Variable of Interest		Covariates in the Model	Crude OR (95%CI)	Adjusted OR (95%CI)
FSP			1.48 (1.10-1.98)	
	+	children in HH		1.31 (0.97-1.76)
	+	race/ethnicity		1.28 (0.94-1.75)
	+	education		1.27 (0.93-1.74)
	+	gender		1.25 (0.91-1.73)
	+	physical activity		1.22 (0.88-1.69)
	+	income		1.18 (0.84-1.66)
	+	age		1.23 (0.87-1.73)
	+	food insecurity		1.22 (0.86-1.72)

Obesity Prevalence Among Women who are FSP Participants vs. Non-participants

	No.	Prevalence %	p-value
FSP Participants	164	35.8	.054
Non-participants	472	28.3	

Relationship Between FSP Participation and Obesity Among Women: Results of Logistic Regression

Dependent Variable of Interest	Covariates in the Model	Crude OR (95%CI)	Adjusted OR (95%CI)
FSP		1.41 (0.99-2.00)	
	+ children in HH		1.25 (0.86-1.82)
	+ race/ethnicity		1.16 (0.78-1.71)
	+ income		0.98 (0.65-1.49)
	+ age		1.06 (0.69-1.61)
	+ education		1.04 (0.68-1.59)
	+ food insecurity		1.03 (0.67-1.59)
	+ physical activity		1.02 (0.66-1.57)

Objective 2

Examine sociodemographic variation in obesity prevalence among low income adults in the county

Prevalence of Obesity by Sociodemographic and Behavioral Characteristics

	No.	Obesity Prevalence %	p-value
Sex			
male	485	27.0	
female	646	30.4	.189
Age group			
18-29	250	24.8	.264
30-39	311	31.4	.444
40-49	260	32.0	.377
50+	310	28.6	

Obesity Prevalence (cont.)

	No.	Obesity Prevalence %	p-value
Race/Ethnicity			
White	134	22.9	
Black	144	29.8	.156
Latino	765	31.6	.038
Asian/PI	63	11.5*	.039

* unstable estimate

Obesity Prevalence (cont.)

	No.	Obesity Prevalence %	p-value
Education			
<high school	510	31.9	.007
high school graduate	307	25.6	.160
some college/trade school	223	31.8	.012
college graduate	90	19.1 *	
Income			
<10,000	535	30.6	.772
10,000-19,999	495	26.9	.285
20,000-29,999	85	32.0	

* unstable estimate

Obesity Prevalence (cont.)

	No.	Obesity Prevalence %	p-value
Food insecurity status			
food secure	696	27.4	
food insecure without hunger	259	35.0	.015
food insecure with hunger	147	26.6	.821
Children in household			
yes	729	32.5	<.001
no	402	22.7	
Physical activity			
sedentary	448	32.6	.023
not sedentary	669	26.6	

Objective 3

Identify independent predictors of obesity among low income adults in the county

Predictors of Obesity Among Adults Living in Poverty: Results of Logistic Regression***

Variable	OR (95%CI)
Race/Ethnicity (vs. white)	
African-American	1.25 (0.74-2.13)
Latino	1.47 (0.92-2.37)
Asian/Pacific Islander	0.52 (0.23-1.16)
Annual income (vs. 20-30K)	
<10,000	1.44 (0.88-2.34)
10,000-19,999	0.95 (0.59-1.52)
Education (vs. college grad)	
less than high school	1.33 (0.78-2.27)
high school grad	1.04 (0.60-1.81)
some college/trade school	1.55 (0.88-2.73)
Food insecurity (vs. food secure)	
with hunger	0.90 (0.62-1.31)
without hunger	1.34 (0.99-1.80)
Children in household	1.59 (1.17-2.15)
Sedentary	1.27 (0.98-1.65)

*** Hosmer and Lemeshow goodness-of-fit : p=0.49

Conclusions

- Obesity prevalence higher among FSP participants than non-participants living in poverty.
- However, no statistically significant association between FSP participation and obesity, either among all adults or among women, after controlling for confounders.
- Having children in the household the strongest predictor of adult obesity in this low income adult population.

Study Limitations

- Cross-sectional study design
- Sampling frame did not include those who were homeless or housed but without phone service
- Low response rate
- Small sample size
- Potential response bias (e.g., self-reported height and weight)

Implications

- Enhanced efforts needed to address the obesity epidemic among FSP participants and low income non-participants, especially among households with children.
- For example,
  - food stamp incentives to promote healthy food purchases among FSPs
  - expansion of allowable USDA-funded prevention activities (beyond nutrition education) to include policy and environmental change initiatives

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