

Are Nutritional and Other Benefits of Family Meals Apparent for At-Risk Youth Attending Alternative High Schools?

Jayne A. Fulkerson, PhD¹

Martha Y. Kubik, PhD¹

Mary Story, PhD²

Leslie Lytle, PhD²

¹School of Nursing

²School of Public Health



Purpose

Assess whether associations between family meal frequency and dietary intake and overweight status found in studies of children and adolescents hold in a high-risk population of youth

- Alternative high schools
 - *Typically have high minority enrollments*
 - *Typically have high poverty concentrations*
 - *Students at risk for academic failure*
 - *Students at risk for health behaviors (e.g., substance use, violence-related injuries, sexual behavior)*



Background

Previous studies have found positive associations between family meal frequency and **dietary intake**

- Higher consumption of fruits/vegetables
 - *Gillman et al., Arch Fam Med, 2000*
 - *Neumark-Sztainer et al., J Am Diet Assoc, 2003*
 - *Videon & Manning, J Adolesc Health, 2003*
- Less breakfast skipping
 - *Videon & Manning, J Adolesc Health, 2003*



Background

Previous studies have found positive associations between family meal frequency and **overweight status**

- Cross-sectional inverse associations with BMI
 - *Gillman et al., Arch Fam Med, 2000*
- Cross-sectional inverse associations with overweight
 - *Taveras et al, Obes Res, 2005*
 - *Among white adolescents only (Sen, Obesity, 2006)*
 - *Among young girls only (Fulkerson et al., under review)*
- Longitudinal inverse associations with overweight
 - *Not significant (Taveras et al., Obes Res, 2005)*
 - *Among white adolescents only (Sen, Obesity, 2006)*
 - *Among children (Gable et al., J Am Diet Assoc, 2007)*



Methods

- Convenience sample of four urban and two suburban alternative high schools
- Schools ranged in enrollment size (27-142 students)
- All enrolled students eligible to participate
- Parental consent for minors, all provided assent
- Students completed survey (personal, behavioral, and school-related social environmental factors associated with dietary and physical activity practices)
- Staff measured height and weight



Participants

- 145 students completed survey, 140 ht/wt
- Mean age = 17.3 years
- 49% female
- 40% white, 31% black, 9% Hispanic, 19% multi-ethnic/other
- 63% low socio-economic status
- 61% qualified for free/reduced price school meals



Main Variables of Interest

- Independent Variable
 - *Family meal frequency—past week (never, 1-5 days, 6-7 days)*
- Dependent Variables
 - *Fruit and vegetable servings—daily servings*
 - *Breakfast frequency—5 or more days in past week*
 - *Overweight status—85th percentile or greater*
 - *Food insecurity—hungry because family couldn't afford food*
 - *Perceptions of benefits of healthy eating (scale, $\alpha = .83$)*
 - *Perceptions of barriers to healthy eating (scale, $\alpha = .82$)*



Analyses: Logistic Regression

- Independent Variable
 - *Family meal frequency*
- Dependent Variables
 - *Breakfast frequency*
 - *Overweight status*
 - *Food insecurity*
- Covariates
 - *Race/ethnicity, age, gender, SES*

Results: Logistic Regression*

Family meal frequency	Breakfast 5+ days per week	Overweight status	Food insecurity
Never	0.3 (0.1, 0.7)	2.7 (1.1, 6.5)	5.5 (2.1, 14.3)
1-5 days per week	0.3 (0.1, 0.8)	0.6 (0.2, 1.5)	2.3 (0.8, 6.7)
6-7 days per week (referent)	1.0	1.0	1.0

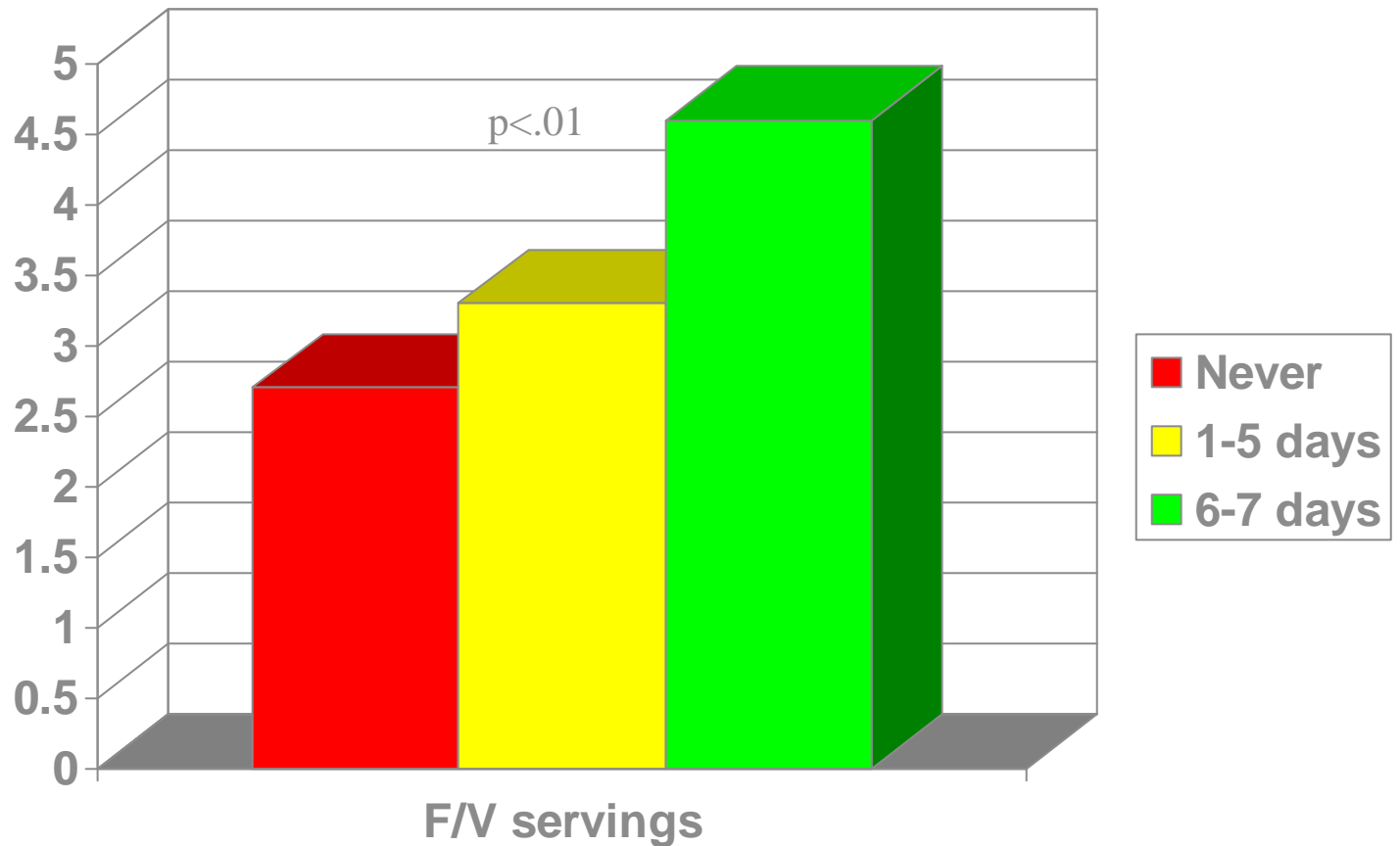
*Adjusted for race/ethnicity, age, gender and SES (no adjustment of SES for food insecurity)



Analyses: General Linear Models

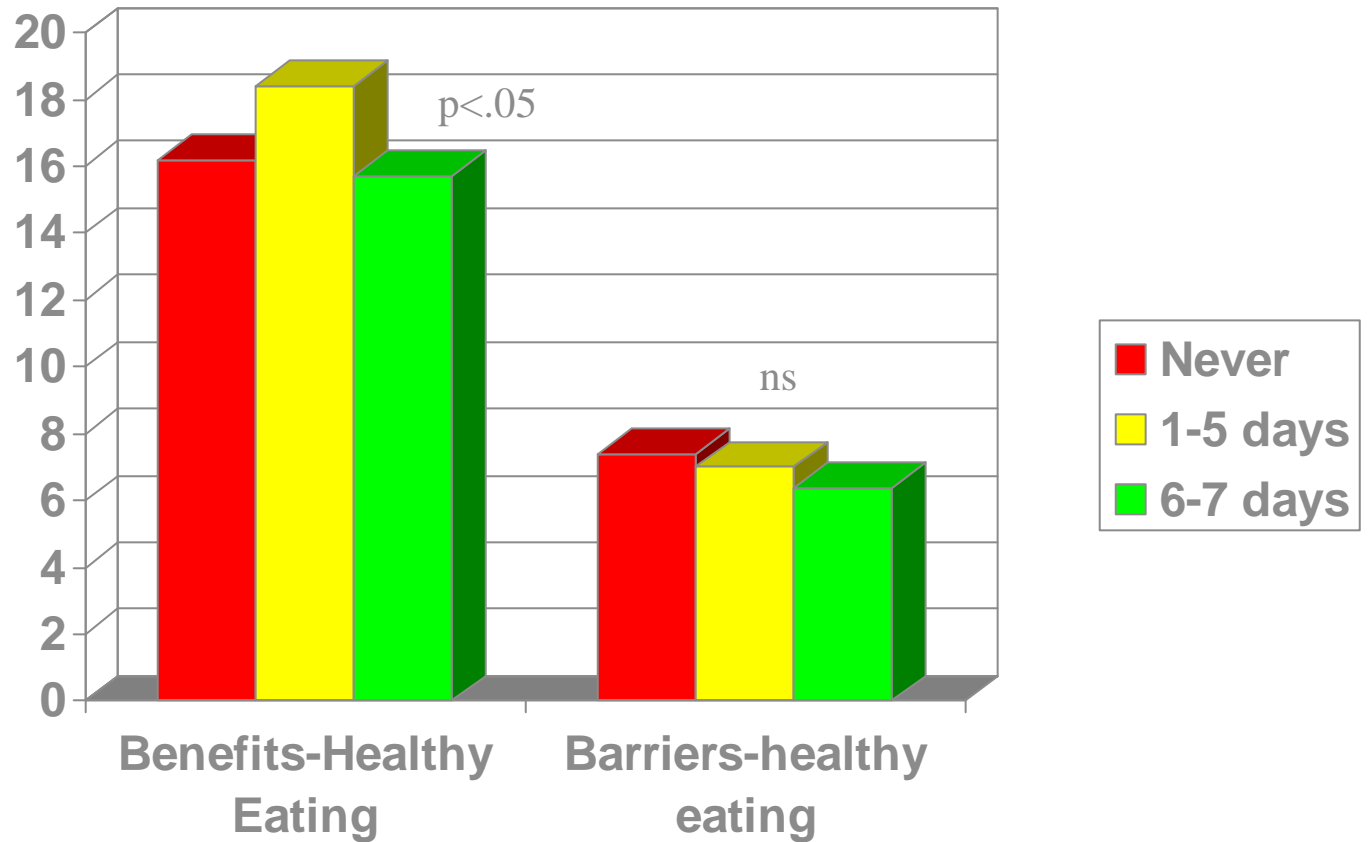
- Independent Variable
 - *Family meal frequency*
- Dependent Variables
 - *Fruit and vegetable consumption (servings)*
 - *Perceptions of benefits of healthy eating*
 - *Perceptions of barriers to healthy eating*
- Covariates
 - *Race/ethnicity, age, gender, SES*

Results: General Linear Models*



*Adjusted for race/ethnicity, age, gender and SES

Results: General Linear Models*



*Adjusted for race/ethnicity, age, gender and SES; higher scores indicate agreement



Conclusions

- Similar patterns of positive associations between family meal frequency and dietary intake and overweight among students in traditional schools are seen in high-risk youth attending alternative high schools
 - *Greater fruit and vegetable consumption*
 - *Lower risk of overweight*
 - *Frequent breakfast consumption*
- New findings show:
 - *Adolescents who do not eat family meals report that they are hungry because their families cannot afford enough food*



Discussion

- Although alternative high school students are at higher risk for health and academic problems, family meals should be encouraged
- Intervention programs to increase the availability and affordability of healthful foods and promote family meals for families of alternative school students may be beneficial