Prevalence and Differences in Salad Bar Implementation in

Rural vs. Urban Arizona Schools

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PURPOSE

To compare the prevalence of school-lunch salad bars in Arizona and differences in implementation by rural vs. urban setting.

BACKGROUND

- Individuals in rural settings are increasingly at risk for health disparities and experience a disproportionate burden of chronic conditions.
- Fruit and vegetable (F&V) is linked with lower risk for chronic diseases like diabetes, heart disease, and obesity.
- Young people do not meet the recommended servings of F&V.
- Salad bars are a recommended method to increase F&V intake, however there is limited evidence of their effectiveness.
- No studies exist that examine implementation of salad bars in urban versus rural environments.**

METHODS

- Cross-sectional web-based surveys were completed by school nutrition managers in NSLP-participating schools across Arizona.
- The National Center for Education Statistics locale codes defined rural and urban classifications, resulting in an analytical sample of 596 managers.
- GEE models compared urban vs. rural differences in salad bars and implementation, adjusting for grade level, free/reduced lunch rate, enrollment size, number of years in position, and the clustering of schools within districts

Table 1. School Demographics

	RURAL	URBAN
Schools surveyed % (n)	22.5 (134)	77.5 (462)
Free/reduced lunch rate (mean, SD)	67.2, 20.0	64.0, 26.0
Years employed at site (mean, SD)	7.8, 6.9	6.2, 5.8
Enrollment (mean, SD)	806.5, 25.9	437.4, 20.0
School Level % (n)		
Elementary	54.8 (73)	67.3 (311)
Middle	60.8 (8)	10.0 (46)
High	39.5 (53)	22.7 (105)

Table 2: Predicted prevalence of challenges and barriers in salad bar implementation in a sample of Arizona schools (n=596)

	Rural	Urban	p-value
Never had a salad bar: <i>What are the barriers to having a salad bar in your school?</i>			
Cost of produce	43.6	22.1	0.009
Lack of space	36.8	42.8	0.491
Sanitation/food safety concerns	42.1	32.3	0.216
Not enough staff	27.7	18.6	0.067
Concern with reimbursement	17.3	19.2	0.769
Time to get through the lines	38.7	30.4	0.293
Difficulty procuring fruits and vegetables	6.5	3.2	0.300
Unsupportive administration	1.5	5.8	0.193
Kids don't like salad bars	9.0	8.5	0.916
Food waste concerns	58.2	38.7	0.024
Children self-serving themselves	9.0	8.5	0.916
No budget for future maintenance	16.7	10.7	0.323
Other. Please specify	19.8	8.2	0.166
None of the above	5.0	4.5	0.855
Once had a salad bar: <i>What contributed to you discontinuing your salad bar?</i>			
Not enough staff	19.0	11.0	0.129
Cost of produce	7.6	5.7	0.662
Lack of space	2.5	2.7	0.968
Sanitation/food safety concerns	11.7	17.3	0.409
Concern with reimbursement	3.2	8.0	0.287
Time to get through the lines	7.9	6.6	0.740
Unsupportive administration	7.2	3.5	0.441
Other. Please specify	7.9	6.2	0.668
None of the above	8.4	6.8	0.747
Currently have a salad bar: <i>What have the been challenges for your school in implementing a salad bar?</i>			
Not enough staff	12.1	7.9	0.157
Cost of produce	17.8	13.4	0.325
Lack of space	3.2	8.7	0.075
Sanitation/food safety concerns	6.6	7.8	0.664
Concern with reimbursement	2.7	2.5	0.928
Time to get through the lines	11.8	12.8	0.819
Unsupportive administration	2.9	0.60	0.192
Kids don't like salad bars	5.7	8.7	0.333
Food waste concerns	13.3	20.6	0.096

Adjustments: Grade level, free/reduced lunch rate, enrollment size, number of years in position, and clustering of schools within districts.

RESULTS

Figure 1. Adjusted Predicted Prevalence of Challenges and Barriers Based on Geographic Location

- Rural schools without salad bars reported perceived food waste and cost of produce were barriers to implementing salad bars, and funding was a necessary resource for future implementation.
- There were no other geographic differences in the salad bar promotion, challenges, and resources among schools that currently have or once had a salad bar.

DISCUSSION

- This study was the first to explore differences in prevalence of salad bars across urban vs. rural schools. We found no differences in salad bar prevalence in Arizona, suggesting no inequities for adoption.
- This study contributes to limited research on the geographic differences in salad bar prevalence and specific challenges experienced by schools in implementing salad bars in rural and urban locations.
- The results can aid in guiding rural schools considering salad bars, or that have concerns over challenges involved in implementation.
- If urban and rural schools are equally likely to have salad bars, and salad bars promote increased F&V intake, rural areas may benefit from addition of salad bars to their school lunch programs without experiencing preventative barriers when compared to their urban counterparts.

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