

Abstract

Objective

To assess the impact of the Harvest of the Month (HOTM) nutrition education intervention program on school cafeteria fruit and vegetable selections among K-6 students

Design

Non-randomized, intervention/control, post-only

Setting

Four elementary schools in northern California

Participants

877 K-6 students from two intervention schools and 688 K-6 students from two control schools

Intervention

Implementation of the Harvest of the Month program over the nine month 2010 school year

Results

The selection of both fruits and vegetables was significantly higher among intervention compared to control students in that 17% (84% vs. 67%) more intervention students selected at least one fruit and 22% (64% vs. 42%) more selected at least one vegetable from the salad bar compared to control students. A total of 92% of intervention students selected either a fruit or vegetable as part of their school lunch compared to 78% of control students.

Conclusion

The HOTM program is effective in increasing fruit and vegetable selection among K-6 elementary school students.



Introduction

The CSU, Chico Center for Nutrition and Activity Promotion (CNAP) implements the Harvest of the Month (HOTM) program with the goal of increasing preferences for fruit and vegetables among low income children in the north state. Previous CNAP research has demonstrated that HOTM students self-report greater preferences for and consumption of fruits and vegetables compared to control students. The objective of this study was to assess the impact of the HOTM program by directly observing cafeteria selections of fruits and vegetables by intervention and control students.

Methods

Participants - K-6 students

- 877 intervention students, 2 elementary schools
- 688 control students, 2 elementary schools

Harvest of the Month Intervention

- Fruit and vegetable tastings
- Student work books
- Book of the Month books
- Farmer of the Month flyers
- Teacher newsletters
- Parent newsletters

Data Collection

- Five consecutive days of observations of individual students' fruit and veg. lunch selections
- Trained faculty and student observers (n=25)
- Observation sheets for recording f/v selections

HOTM vegetables on the school salad bar

- Radish
- Cabbage

Results

Table 1. Significant Increase in Percent of Intervention vs. Control Students Selecting Salad Bar Fruits and Vegetables

	Intervention (n=877)				Control (n=688)				p value
	Yes		No		Yes		No		
	No.	%	No.	%	No.	%	No.	%	
	No.	%	No.	%	No.	%	No.	%	
Fruits*									
K - 3	399	85	69	15	267	68	127	32	<0.001
4 - 6	334	82	75	18	192	65	102	35	<0.001
Total	733	84	144	16	459	67	229	33	<0.001
Vegetables*									
K - 3	319	68	149	32	173	44	221	56	<0.001
4 - 6	244	60	168	40	118	40	176	60	<0.001
Total	563	64	314	36	291	42	397	58	<0.001
Total Fruits and/or Vegetables*									
K - 3	436	93	32	7	312	79	82	21	<0.001
4 - 6	369	90	40	10	227	77	67	23	<0.001
Total	805	92	72	8	539	78	149	22	<0.001
HOTM Vegetable Selections**									
Cabbage	12	3	356	97	6	2	337	98	0.237
Radish	59	12	450	88	29	4	659	96	<0.001

*Includes both selections from the salad bar and selections of entrees containing a serving of fruit or vegetable within the entrée.

**These items appeared as selections on the salad bar during the week of observations

- 17% more intervention students selected at least one fruit and 22% more selected at least one vegetable compared to control students.
- 92% of intervention students selected either a fruit or a vegetable as part of their school lunch compared to 78% of control students.
- At 24%, the difference in vegetable selection rates was highest for K-3 intervention students compared to control K-3 students.
- The selection rate for the HOTM vegetable, radish, was significantly higher among intervention students than control students (p<0.001).

Table 2. Harvest of the Month Promotes a Significantly Greater Increase in Fruit and Vegetable Selections Among Low-Income (Free/Reduced Price) Students

	Intervention (n=877)				Control (n=688)				p value
	Yes		No		Yes		No		
	No.	%	No.	%	No.	%	No.	%	
	No.	%	No.	%	No.	%	No.	%	
Fruits*									
Free/Reduced	672	87	104	13	237	68	111	32	<0.001
Paid	61	60	40	40	222	65	118	35	0.408
Total	733	84	144	16	459	67	229	33	<0.001
Vegetables*									
Free/Reduced	503	65	273	36	151	43	197	57	<0.001
Paid	60	59	41	35	140	41	200	59	<0.001
Total	563	64	314	36	291	42	397	58	<0.001
Total Fruits and/or Vegetables*									
Free/Reduced	725	93	51	7	275	79	73	21	<0.001
Paid	80	79	21	21	264	78	77	22	0.786
Total	805	92	72	8	539	78	149	22	<0.001

* Includes both selections from the cafeteria salad bar and selections of entrees containing a serving of fruit or vegetable within the entrée.

- At 87% vs. 68%, significantly more 'Free/Reduced Price' intervention students selected fruit than did 'Free/Reduced Price' control students, respectively (p<0.001).
- In summary, 19% more 'Free/Reduced Price' intervention students selected fruit and 22% more selected vegetables from the salad bar vs. 'Free/Reduced Price' control students (p<0.001).
- Within the intervention group only, 27% more of the 'Free/Reduced Price' students selected fruit and 6% more selected vegetables from the salad bar vs. 'Paid' students (p<0.001).

Conclusion

Study findings indicate that the HOTM program is effective in increasing fruit and vegetable selections among K-6 elementary school students. In addition, results indicate that the impact of the HOTM program is greatest on low income (free/reduced price) intervention students. We have shared the results of this impact evaluation with the local school district Nutrition Services Director, district administrators, school board members, teachers, parents, and members of the community.

Limitations

- Presence of observers may have influenced selections
- Occasional inconsistency in salad bar fruits and vegetables among schools

