

Nevada Team Nutrition Grant Pick a Better Snack Evaluation Report 2017-2019



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Background

In 2016, the Nevada Department of Agriculture (NDA) received a three-year Team Nutrition Grant from USDA. To fulfill Objective 2.1 of the grant proposal, NDA partnered with University of Nevada Cooperative Extension (UNCE) to deliver the Pick a Better Snack (PABS) curriculum in schools participating in the Fresh Fruit and Vegetable Program (FFVP) in Clark County School District in School Years 2017-2018 and 2018-2019. The PABS nutrition education program is a series of nutrition education lessons given during the school day once monthly over the school year to promote fruits and vegetables as snacks.

Methods

The Center for Program Evaluation, University of Nevada, Reno, was the evaluator for Nevada's Team Nutrition grant. A randomized experimental evaluation study was conducted to determine to what extent the PABS lessons increased participating students' knowledge of nutrition, increased their favorable attitudes towards eating fresh fruits and vegetables, and improved their recognition and identification of the five MyPlate food groups compared to students who did not receive the lessons. One second grade and one third grade classroom at each participating school were randomly assigned to the control group. Control group classrooms did not receive the PABS lessons. A community-based instructor provided eight monthly lessons to the students in the intervention classrooms at each school. Intervention group students also received a monthly take home packet including fruit/vegetable fact sheets, parent newsletters in Spanish and English, and bingo cards to reinforce the lessons. In addition, a trained chef/registered dietitian provided a cooking demonstration. Three main evaluation questions guided the study:

1. To what extent do students who participate in Pick A Better Snack lessons increase their knowledge of nutrition (and have higher increases than control group students)?
2. To what extent do students who participate in PABS lessons increase their favorable attitudes towards eating fruits and vegetables (and have higher increases than control group students)?
3. To what extent do students who participate in PABS lessons improve their recognition/identification of MYPlate and MYPlate five food groups (and have higher increases than control group students)?

Both the intervention group and the control group took pretest and posttest surveys. The community-based instructor read the pretest/posttest survey items to the students and had them fill in the bubbles next to their answers. Nutrition knowledge was measured with four items with cohort 1 ($\alpha = .48$) and, due to a ceiling effect, four different items for cohort 2 ($\alpha = .61$). Attitudes towards fruits and vegetables was measured with 15 items ($\alpha = .76$); and, MyPlate food group knowledge was measured with four items ($\alpha = .42$).



Participants

Study participants included 2nd and 3rd grade students at eight elementary schools participating in the Fresh Fruit and Vegetable Program in Clark County School District, Las Vegas, Nevada, during SY2017-2018 (4 schools) or SY2018-2019 (5 schools; 1 school participated in both program years). Both pretest and posttest data were available for 1,272 students, in 89 classrooms, in eight schools across the two program years. The sample was evenly split between 2nd and 3rd grade students, as well as boys and girls (Table 1).

Table 1. Student Demographics		
N=1272	#	%
Grade		
2 nd grade	641	50%
3 rd Grade	631	50%
Sex		
Boy	621	51%
Girl	606	49%
Group		
Comparison Group	269	21%
Intervention Group	1003	79%
Cohort		
2017-2018	479	38%
2018-2019	793	62%

Results

A two-level hierarchical linear model, in which classrooms (randomly assigned to intervention or control conditions) were nested within schools, was used to test the effect of the PABS intervention on the posttest measures—nutrition knowledge, MyPlate knowledge, and attitudes towards fruits and vegetables—while controlling for pretest scores.

The intervention group did not have higher increases in nutrition knowledge than the control group in either cohorts. In cohort 1, there was a ceiling effect on the nutrition knowledge scale, such that most students had high levels of knowledge at both pretest and posttest. New items were created for the cohort 2 survey. While the reliability of the new scale improved, there was no difference between the groups with respect to nutrition knowledge.

The intervention group had higher increases in MyPlate knowledge than the control group (Figure 1). The intervention group also had higher increases in favorable attitudes towards fruits and vegetables than the control group (Figure 2).

Figure 1. Students in PABS classrooms had higher mean MyPlate knowledge test scores at posttest than students in control group classrooms.

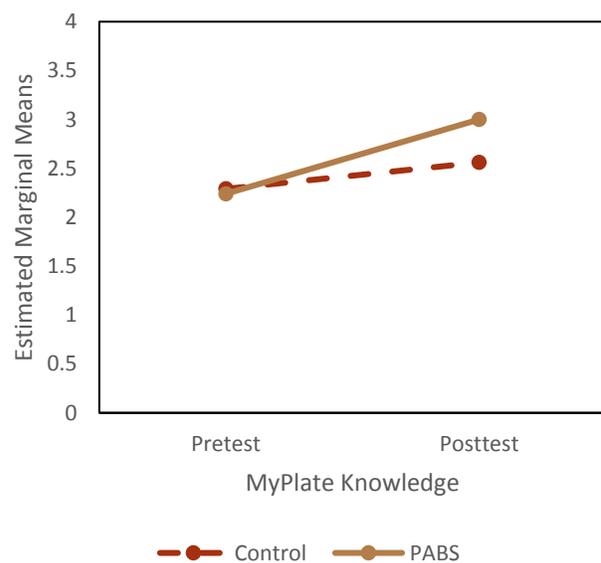
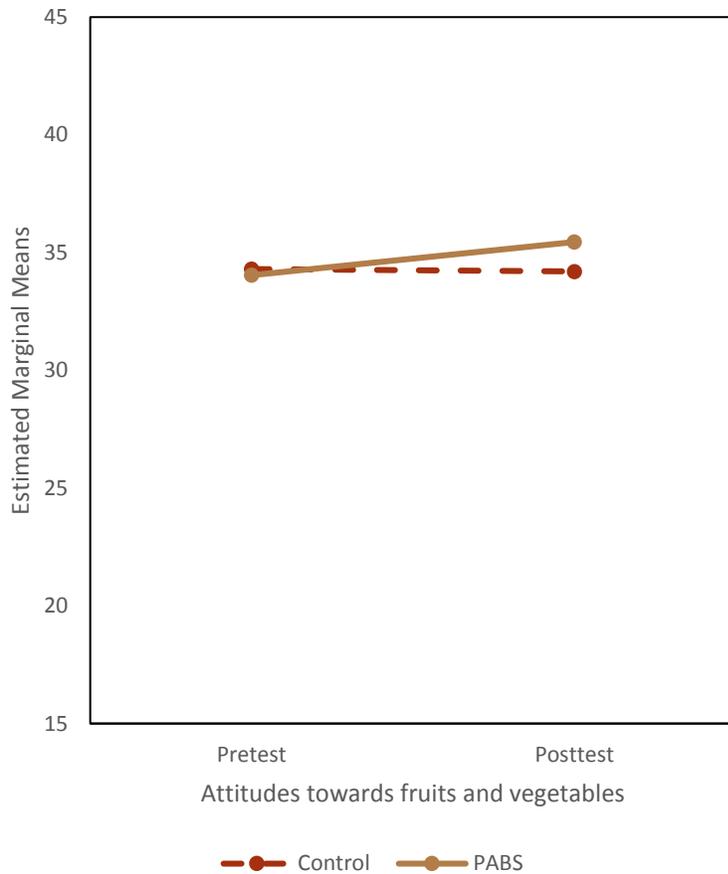


Figure 2. Students in PABS classrooms had more favorable attitudes towards eating fruits and vegetables at posttest than students in control group classrooms.



Conclusion

Results demonstrate the effectiveness of PABS to increase students' knowledge of MyPlate and increase favorable attitudes towards fruits and vegetables. Although all students in these Fresh Fruit and Vegetable Program schools received fruit and vegetables as snacks in their classrooms, students that participated in the PABS program showed greater improvements in attitudes, nutrition knowledge, and recognition of MyPlate and associated food groups as compared to comparison group students who did not receive these lessons. These results indicate that nutrition skills and positive attitudes, such as willingness to try new fruits and vegetables are enhanced when fruit and vegetable tastings are paired with the Pick A Better Snack nutrition lessons in the classroom.





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Appendix: Pretest/Posttest Surveys

School Code	Class code	Grade	CBI	Student ID

Name _____
Pre Post

What grade are you in? _____

Boy Girl No response

For questions 1 to 3, choose ONE answer that is closest to what you did.

1. Yesterday, did you eat any vegetables?

- a. No, I did not eat any vegetables yesterday.
- b. Yes, I ate vegetables 1 time yesterday.
- c. Yes, I ate vegetables 2 times yesterday.
- d. Yes, I ate vegetables 3 or more times yesterday.

2. Yesterday, did you eat any fruit?

- a. No, I did not eat any fruit yesterday.
- b. Yes, I ate fruit 1 time yesterday.
- c. Yes, I ate fruit 2 times yesterday.
- d. Yes, I ate fruit 3 or more times yesterday.

3. Yesterday, did you drink 100% fruit juice?

- a. No, I did not drink fruit juice yesterday.
- b. Yes, I drank fruit juice 1 time yesterday.
- c. Yes, I drank fruit juice 2 times yesterday.
- d. Yes, I drank fruit juice 3 or more times yesterday.



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The University of Nevada, Reno is an EEO/AA institution. This material was funded by USDA's Supplemental Nutrition Assistance Program. The Supplemental Nutrition Assistance Program provides nutrition assistance to people with low income. It can help you buy nutritious foods for a better diet. To find out more, contact 1-800-221-5689 or read www.fns.usda.gov/snap. USDA is an equal opportunity provider and employer.



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Community Health Sciences
University of Nevada, Reno

Bubble the answer that is most like you.

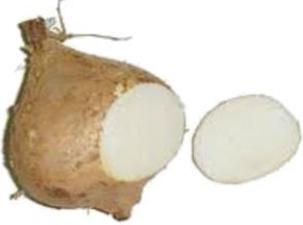
	Most of the time 	Sometimes 	Almost never 
4. I like to eat fruit for snacks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I like to eat vegetables for snacks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I like to try new fruits.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I like to try new vegetables.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. When I'm at school, I like to eat fruits with my lunch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. When I'm at school, I like to eat vegetables with my lunch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. When I'm at school, I like to do physical activities during recess.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each food pictured below,

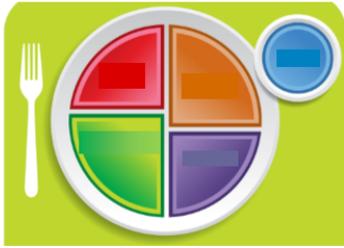
Mark the bubble under the 😊 if you like to eat it,

Mark the bubble under the 😐 if you don't know if you like it, or you don't know what it is,

Mark the bubble under the ☹️ if you do not like to eat it.

<p>11. CANTALOUPE</p> 	<p>I like it I'm not sure I don't like it</p> <p>😊 😐 ☹️</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>12. JICAMA</p> 	<p>I like it I'm not sure I don't like it</p> <p>😊 😐 ☹️</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>13. CRANBERRIES</p> 	<p>I like it I'm not sure I don't like it</p> <p>😊 😐 ☹️</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>14. CAULIFLOWER</p> 	<p>I like it I'm not sure I don't like it</p> <p>😊 😐 ☹️</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/></p>

<p>15. MANGO</p> 	<p>I like it</p>  <input type="radio"/>	<p>I'm not sure</p>  <input type="radio"/>	<p>I don't like it</p>  <input type="radio"/>
<p>16. PEPPERS</p> 	<p>I like it</p>  <input type="radio"/>	<p>I'm not sure</p>  <input type="radio"/>	<p>I don't like it</p>  <input type="radio"/>
<p>17. BLOOD ORANGE</p> 	<p>I like it</p>  <input type="radio"/>	<p>I'm not sure</p>  <input type="radio"/>	<p>I don't like it</p>  <input type="radio"/>
<p>18. ASPARAGUS</p> 	<p>I like it</p>  <input type="radio"/>	<p>I'm not sure</p>  <input type="radio"/>	<p>I don't like it</p>  <input type="radio"/>
<p>19. BLUEBERRIES</p> 	<p>I like it</p>  <input type="radio"/>	<p>I'm not sure</p>  <input type="radio"/>	<p>I don't like it</p>  <input type="radio"/>



20. Have you seen this picture before today?

Yes

No

21. What is the name of the picture above?

- a. The Food Groups
- b. Choose MyPlate
- c. Dinner Time
- d. The Food Circle

22. What is the name of the red food group?

- a. grain group
- b. vegetable group
- c. fruit group
- d. dairy group

23. What is the name of the green food group?

- a. grain group
- b. vegetable group
- c. fruit group
- d. dairy group



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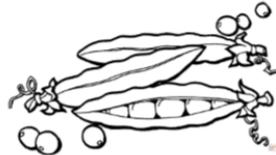
24. Which of these foods is actually a fruit?



tomato



onion



peas



lettuce

25. Which of these foods is a source of vitamin C?



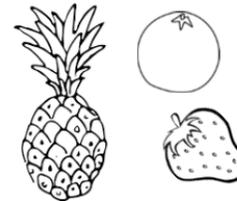
pineapple



strawberry



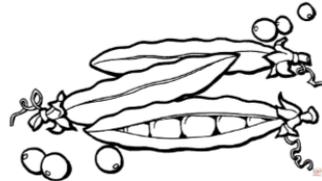
orange



all of them

26. What food group are beans and peas part of?

- a. Vegetable group
- b. Protein group
- c. Both
- d. Neither



27. Which of the following are part of the Fruit Group?

- a. Canned peaches
- b. Dried apricots
- c. 100% orange juice
- d. Fresh strawberries
- e. All of the above

27. Eating lots of fruits and vegetables is good for your health.

- a. True
- b. False

Thank you!

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