Nutrition Education and Sensory Evaluation Influence Preferences for Peanut and Alternative Nut/Seed Butters

G.C. Carr, C.G. Galbreaith, L. Dart

Department of Nutritional Sciences, Texas Christian University, Fort Worth, Tx

Background

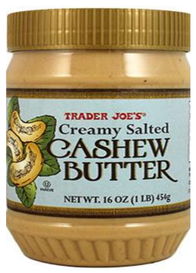
Peanut butter is an American staple in nine out of 10 households (National Peanut Board, 2014). It's estimated that each U.S. youth consumes an average of 1,500 peanut butter sandwiches by the time he/she graduates from high school (Kelton Global, 2016).

Although, the popularity of peanut butter alternatives such as tree nut and seed butters has grown in recent years due to their nutrient content and flavor, peanut butter continues to be the "nut butter" of choice for most people.

This may be due to lack of knowledge about the health benefits of different nut/seed butters and/or lack of exposure to these products.

Purpose

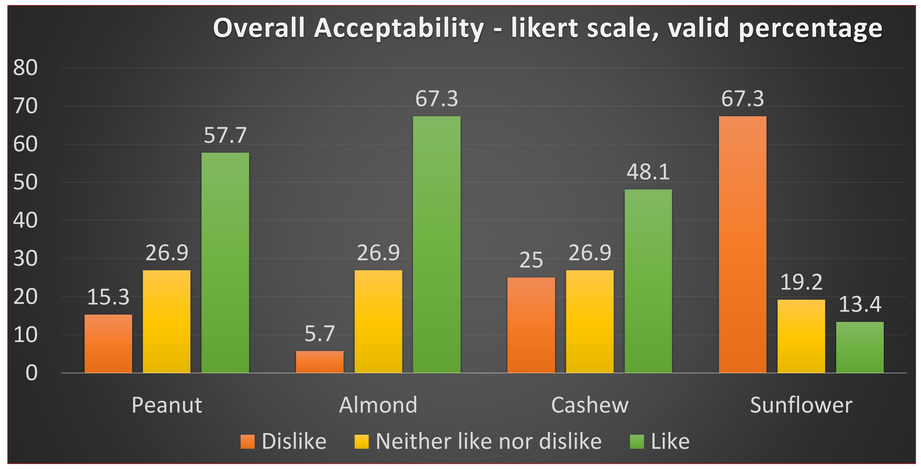
The purpose of this study was to examine if taste-testing and education about the health benefits of tree nut and seed butters would influence preferences among university students.



Design & Methods

- Fifty-two students enrolled in a multi-disciplinary introductory nutrition course participated in this single-blind, cross-sectional study.
- Participants completed a pre-study questionnaire assessing knowledge, typical consumption, and preferences of peanut, almond, cashew, and sunflower butter.
- Following education about the nutrient content of peanuts compared to cashews, almonds, and sunflower seeds, participants taste-tested and evaluated a sample butter of each and completed a post-study questionnaire.
- Study procedures were approved by Texas Christian University Institutional Review Board, and participants responses and sensory rankings were analyzed to meet study objectives (SPSS; $p \leq 0.05$).

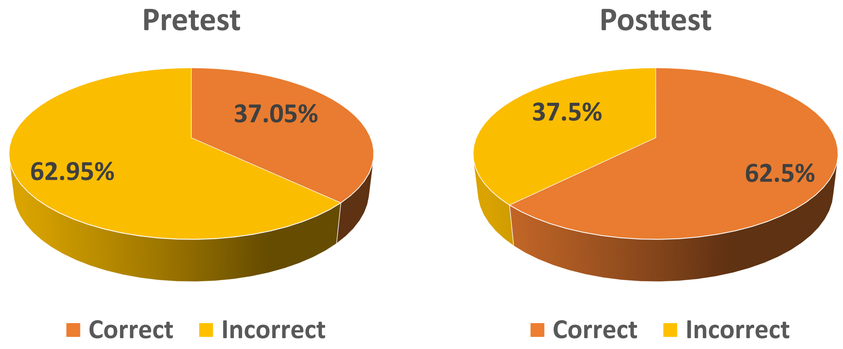
Sensory Evaluation

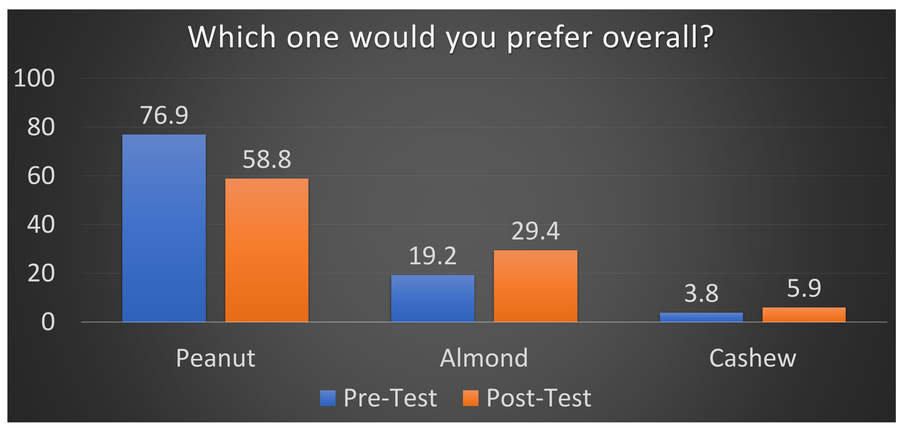


Nut and Seed Butters Pre/Post Test

Almond Butter	High in vitamin E & calcium
Sunflower Butter	Highest in vitamin E
Cashew Butter	High in copper
Peanut Butter	Highest in potassium

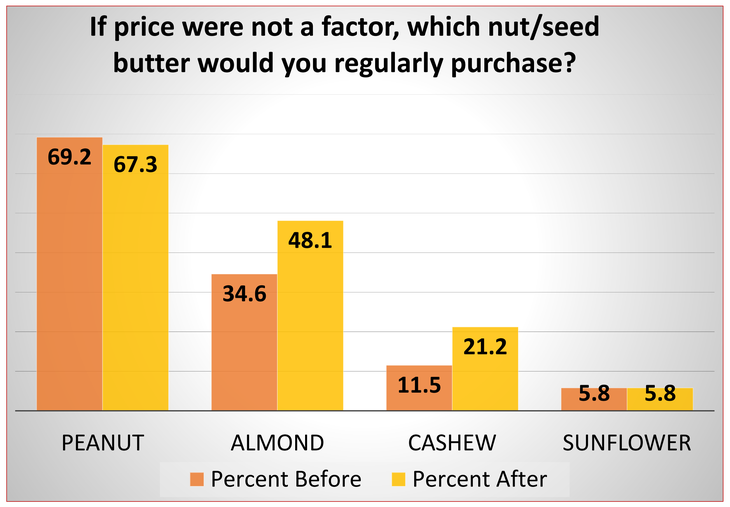
P=0.01





Results

- Significant improvement in pre and post-study knowledge of nutrient content in nut/seed butters was noted (p=0.01).
- Sensory evaluation showed that preferences for peanut butter were highest among participants, followed by almond butter and cashew butter. Sunflower seed butter was least preferred (p=0.01).
- Taste, color, and texture/mouthfeel sensory rankings correlated with overall acceptability for each sample (p=0.05).
- Following sensory evaluation, preferences for consuming almond butter increased by 38% compared to pre-tasting (p=0.01).



Nutrient Analysis: Nut & Seed Butters (2 T)

	Peanut	Cashew	Almond	Sunflower
Calories	190	190	190	190
Protein	7g	4g	7g	5.5g
Fiber	1.6g	1g	3g	1.8g
Total fat	16g	16g	17g	18g
Sat Fat	2g	3g	1.5g	2g
Vitamin E	2.9mg	1.6mg	5.8mg	7.3mg
Calcium	16mg	20mg	111mg	20mg
Potassium	213mg	143mg	120mg	184mg

Discussion & Conclusions

- Participants who frequently consumed peanut butter were more likely to adopt almond butter after sampling and education, and/or other nut/seed butters.
- Participants who infrequently consumed any nut/seed butter were unlikely to change after sampling and education.
- Due to the increasing prevalence of peanut allergies (CDC, 2016), education and sensory evaluation are both important strategies for enhancing awareness of the health benefits and acceptability of peanut butter alternatives.