

Food Safety Education Using A Positive Deviance Approach



Thursday, June 8, 2017



Welcome

We are very glad you are with us!

PFSE develops and promotes effective education programs to reduce foodborne illness risk for consumers. We are a non-profit organization that relies on grants and donations.



Learning Objectives

Attendees will be able to:

- Design programs and/or interventions based on assessment and Positive Deviance research.
- List three factors that increase consumers' likelihood to adopt safe handling behavior.
- Identify at least two motivators for consumers' to change food handling behavior
- Describe strategies to overcome health professionals' barriers to delivering food safety education.



Our Speakers:



Yaohua (Betty) Feng, Ph.D.
Postdoctoral Researcher
University of California - Davis



Christine Bruhn, Ph.D.
Cooperative Extension
Specialist Emerita
University of California - Davis



Moderator
Mary Saucier Choate, M.S., R.D.N., L.D.N.
PFSE Manager, Outreach & Stakeholder Engagement



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Poll Question #1

Please tell us what is your occupation? (check all that apply)



Christine Bruhn, Ph.D.
Cooperative Extension Specialist Emerita
University of California - Davis

Background

- CDC estimates each year
 - 1 in 6 Americans (48 mil people) get sick,
 - 128,000 are hospitalized,
 - 3,000 die of foodborne diseases.



Source CDC, 2016



Do not Always Comply with What They Know

- 57% knew chicken should be cooked to internal temperature 165 °F
- However, 5% used a food thermometer
- 58% knew hot food should be held at 140 °F,
- However, 0 used a food thermometer



Anderson, et al., 2004, Acad. Nutr. Diet.; Soares, et al., 2012, Food Control



Actual Food Handling Practice

- Hygiene recommendations are not always followed
 - 64% don't wash hands before meal preparation
 - 33 % don't use soap when washing
 - 38% don't wash after handling raw chicken
- Cooking is not always adequate
 - 25% of burgers don't reach 160°F
 - 40% undercook their chicken

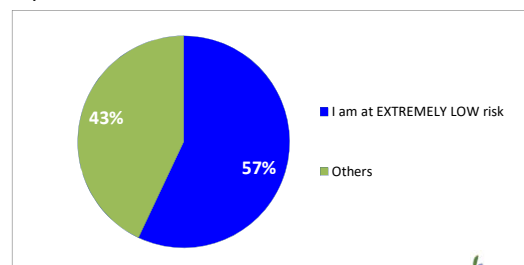


Phang and Bruhn, 2011, Food Prot; Bruhn, 2014, Food Prot Trends



Common Perception: I am not at Risk

Optimism Bias



IFIC, 2012, Food Health Survey



Who are at the Highest Risk?



- Pregnant Women
- Children (<5 yrs old)
- Older Adults (>65 yrs old)
- People with Diabetes and other people with compromised immune system



Conventional Education Needs Improvement

Conventional education:

- Use informational sheet and 'one-way only'
- Limited material designated for specific high-risk audience

Previous studies reported that food education is more effective if the programs and materials are tailored to the needs of a specific audience.

Altekruse, et al., 1999, Am J Prev Med; Baker, et al., 2014, J Nutr Educ Behav



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Positive Deviance

Based on the observation that in every community there are certain individuals whose uncommon practices enable them to find better solutions to problems than their neighbors or colleagues despite having access to the same resources.

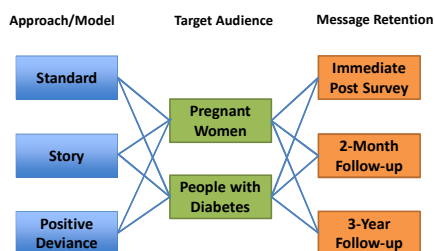


Goals:

- Identifying best practice
- Promote the best practice within the community or group.



Study Design



Program Content



- Clean
- Cook
- Chill
- Avoid cross-contamination
- Choose safe foods

Feng, et al., 2015, available at: <https://hsfoodsafety.wixsite.com/foodsafetycurriculum>



Session Content

- Focus on behavior (How do you.....)
 - Identify positive deviant
 - Discuss why the practice is recommended
 - Commit to trying the practice
 - Complete the take home task



Selected Quotes

Discussion Question:

Do you know the temperature of your refrigerator?
How cold should it be?

Representative Quote:

"I don't know the temperature in my fridge, as long as the drink is cold, it should be good."

Positive Deviant's Quote:

"I always keep a thermometer in my fridge, and it should be below 40 °F."

Feng, et al., 2016, J Food Control



Take Home Tasks that Support Message

Clean – Observe hand washing

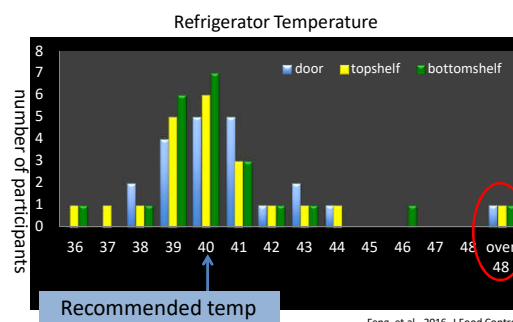
Cook – Record the temperature of 3 items

Chill – Record refrigerator temperature

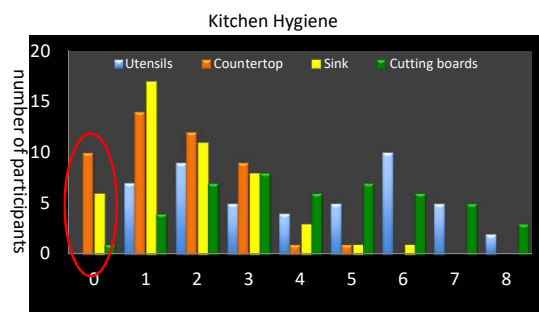
Cross-contamination – Record kitchen cleaning activities



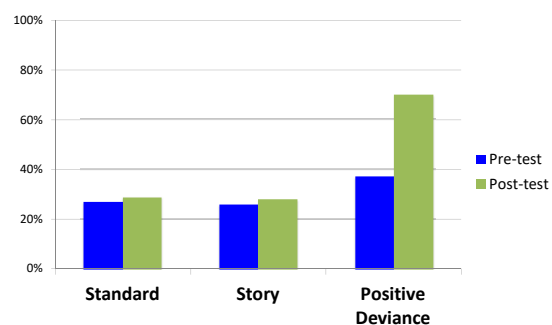
Subjects are Committed to Try the Positive Deviant Behavior as a Take-Home Task



Subjects are Committed to Try the Positive Deviant Behavior as a Take-Home Task

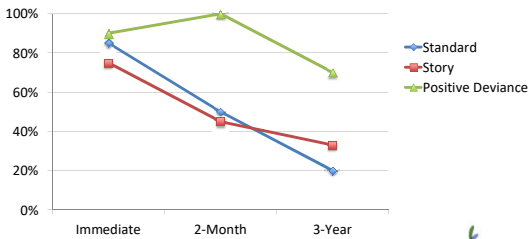


Foodborne Illness Knowledge Change



Behavior Change and Retention

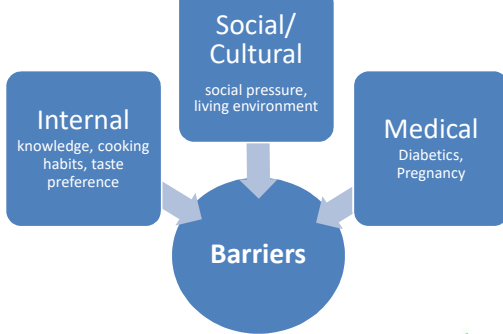
Self-Report Food Thermometer Use Retention



Feng, et al., 2016, Food Control; Feng, et al., in preparation

Unique Components of the Positive Deviance Approach

- People like themselves follow these practices
- Understand why the behavior is recommended
- Practice the behavior when they do the take-home tasks
- Report their experiences



Feng, et al., 2016, J Food Control

People with Diabetes and Pregnant Women had Different Barriers and Different Knowledge Change Pattern

- Short-term condition vs. Long-term condition
- Recruitment (university vs metropolitan area)
- Age-group (18-39 vs 45-79)
- Motivation (childbirth vs improved diet and health)



Feng, et al., 2016, J Food Control

PD Evaluation
with Pregnant women and
people with diabetes

PD Curriculum
for High-Risk Population

PD curriculum
for the Next Generation
Food Preparers
(High School Students)

Health Professionals Are Trusted By Consumers

How trustworthy, if at all, do you find the following sources to deliver accurate food safety information?



Source: IFIC, 2012

Health Professionals Not Confident About Food Safety Topics

- ❑ 40% of physicians were not confident in their general knowledge about foodborne illness
- ❑ <10% of RDs and RNs use structured classes or videos to provide education to pregnant consumers
- ❑ 40% of RDs and RNs provided food safety education to high-risk consumers

Buffer, et al., 2013, Nutr Educ Behav; Wong, et al., 2004, Clin Infect Dis



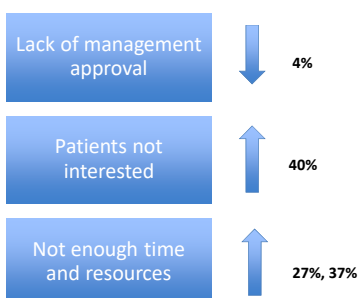
Motivators

1. Curriculum shown effective and attractive
2. Patients need more food safety information
3. Health professionals want to update themselves
4. Combine food safety and current nutrition education

Feng and Bruhn, 2017, CFSE Conf.



Barriers to Health Professionals



Feng and Bruhn, 2017, CAND Conf.



Specific Barriers from WIC

- Unique cuisine and cooking habits among cross-cultural communities
- Cannot afford equipment like thermometer
- Low literacy
- Need more materials in Spanish, Chinese, Vietnamese

Feng, et al., in preparation



Impact the Public with the Research Positive Deviance

USDA NIFA funded a Postdoctoral Fellowship to develop and evaluate a **culturally tailored** food safety positive deviance curriculum for **low-income minority** groups.



Next Generation Food Preparers Need Food Safety Education

- **52%** thought chicken was cooked thoroughly when the internal temperature reached 100°F.
- **62%** thought wiping off the cutting board with a clean paper towel between raw meat and bread is enough to remove bacteria.
- **71%** reported often not washing hands before eating at school cafeteria or restaurant.

Haapala and Probart, 2004, Nutr Educ Behav



Curriculum for Next Generation

- Delivered curriculum in 3 high schools
- Pre and Post surveys indicate increased food safety knowledge
- Video observations demonstrate increased attempts to follow safe handling practices



Take-Home Messages

- Safe food handling knowledge increased significantly
- Participants are engaged to learn and practice recommended behaviors
- Participants indicated they would recommend program to their family and friends



Next Step

- Develop curriculum to combine food safety and nutrition using PD approach
- Evaluate the effectiveness of curriculum delivered by health professionals and school teachers
- Promote the importance of food safety education among health professionals



Poll #2

What location would be most useful to post the positive deviance educational program?



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QUESTIONS?




Upcoming Events

 **Tue., July 25, 1 p.m. EDT**
Knowledge Exchange- Clostridium Perfringens: Anatomy of an Outbreak


 **Tue., August 15, 1 p.m. EDT**
Brown Bag Webinar: Promoting Food Safety and Family Meals - Your Best Resources

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