Safe Food Handling Training for Restaurant Employees: Does Phrasing Make a Difference?

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Texas Food Establishment Rules

• Statutes and Laws for all food establishments
Food Safety in Texas

What’s required:

“all food employees [to] successfully complete an accredited food handler training course, within 60 days of employment” (Texas Food Establishment Rules, 2015).

Effective on September 1, 2016
Food Safety in Texas

What it means:
Food employee = “an individual working with unpackaged food, food equipment or utensils, or food-contact surfaces” (TFER 2015)

Applies to all:
- cooks, servers, janitors or custodial workers, dishwashers and runners
Complications to New Texas Legislation

How does it affect our industry?

57% of entry-level workers in a restaurant have little to no level of education (Shierholz, 2014)

* An employee CAN NOT work in the food establishment until getting certified
How long should you scrub your hands for?

A) 20 seconds
B) 10 seconds
C) 15 seconds
D) 10-15 seconds  Correct answer
Why is food safety training important?

Centers for Disease Control and Prevention (CDC) estimates that each year:

• 48 million people sick
• 128,000 hospitalized
• 3,000 die
Why is food safety training important?

Outbreaks

- Caterers or Banquets Facilities: 14%
- Restaurants: 8%
- Private home: 12%
- Hospital or Nursing home: 4%
- Institutional location: 2%
- Other: 60%

Data from: Centers for Disease Control and Prevention
This infers that the hospitality industry plays a significant role in foodborne illnesses and identifying **effective prevention methods** and applications are still at large.

60% of foodborne illnesses from restaurants
14% of foodborne illnesses from catering/banquets facilities =

Hospitality industry = ~75%
Is mandatory food safety training effective?

• Food handler violations decreased by nearly 33% after receiving mandatory food safety training (Averett et al., 2011)

• Food handler knowledge showed an overall significant improvement in food safety behaviors after food safety training was received (Park et al., 2010)
Current Literature

What about the examination delivery methods?
Methodology

• Between-subjects experimental design
• New hires taking food handler training course

• Participants were randomly selected to receive either test A or B
Methodology

- Between-subjects experimental design

Exam A:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____
15. ____
16. ____
17. ____
18. ____
19. ____
20. ____

Exam B:
1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____
15. ____
16. ____
17. ____
18. ____
19. ____
20. ____

10 “updated”
10 “traditional”
10 “traditional”
10 “updated”
Methodology

• Content of exam:
  – CDC Risk Factor Categories
    • Cleaning and Sanitation (CS)
    • Time and Temperature (TT)
    • Personal Hygiene (PH)
    • Cross-contamination and Allergens (CCA)
    • Basic Food Safety (BFS)
Hypothesis

- **H₀**: Pass all (no significant difference between both versions—answered most correctly for both versions)
  - Fail both (no significant difference between both versions—answered most incorrectly for both versions)

- **Hₐ**: Participants will answer the majority of the “updated” version of the exam correctly, while incorrectly answering the majority of the “traditional” version
Demographics:
n = 89

- No High School Degree: 10%
- High School Graduate: 46%
- Some College Credit / Associate's: 36%
- Bachelor's Degree: 6%
- Master's Degree: 2%

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Results

• Results indicate that the phrasing of food handlers’ exam does not have a significant difference on the performance on the majority of the dependent variables (BFS, CCA, and CS).

• This finding suggests that the phrasing (traditional vs. updated) does not make a difference in the overall performance (grade) of food handlers’ exam.
Exam performance comparison
Treatment effects of phrasing on performance

<table>
<thead>
<tr>
<th>CDC Risk Factor Category</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning and Sanitation (CS)</td>
<td>0.090</td>
</tr>
<tr>
<td>Time and Temperature (TT)</td>
<td>3.482*</td>
</tr>
<tr>
<td>Personal Hygiene (PH)</td>
<td>1.221*</td>
</tr>
<tr>
<td>Cross-contamination and Allergens (CCA)</td>
<td>0.033</td>
</tr>
<tr>
<td>Basic Food Safety (BFS)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Note: * p < .05, df = 1
Implications and Future Research

• The sample taken from food establishments located either inside or nearby a University.
  – 82% had at least a HS diploma
  – Students working at their campus?

• These results may not be generalized to all food employees.

• This study is currently being expanded to include a more representative group of food employees in the naturally diverse work force of the food industry.
Thank you!