Using Behavioral Science in Fire Safety Messaging

Jennifer Radics-Johnson, MBA, CFRE, CVA
Daniel Chacon, BA
Learning Objectives

1. Explain what is behavioral change and how it relates to fire and burn prevention education
2. Explain why behavioral change is important in fire and burn prevention education
3. Utilize the BeSafe Tool in measuring behavioral change after a fire safety presentation
4. Identify ways the BeSafe Tool can be utilized to measure behavioral change within your own fire or burn prevention education programs
Disclosures

Grant/Research Support
This project was funded with external funding received from a two-year Federal Emergency Management Agency (FEMA) Fire Prevention and Safety Grant
About Us

Jennifer Radics-Johnson, MBA, CFRE, CVA
Executive Director
Alisa Ann Ruch Burn Foundation
About Us

Daniel Chacon, BA
Assistant Director
Alisa Ann Ruch Burn Foundation
About AARBF

Our mission is to significantly reduce the number of burn injuries through prevention education, and to enhance the quality of life of those affected by burn injuries.
Definitions

**Behavioral Science**: The scientific study of human and animal behavior.

**Behavior Change**: Any transformation or modification of human behavior.
The goal of any fire safety training is to create behavior change in our audience.
Partnership

Dr. Andrew Ainsworth
Director of the
Applied Psychometrics
Laboratory

Dr. Ellie Kazemi
Focuses in finding
efficient, effective
training and
supervision strategies
Step One

How is the fire service currently doing its public education?
Nationwide Online Survey

✓ 37-question national survey was developed and distributed to evaluate fire and burn safety education programs and assessment procedures.

✓ Eligible participants in this study were at least 18 years of age and were referred by the nonprofit burn foundation as subject matter experts in fire and burn safety.

✓ The survey was administered online and distributed via email directly to identified subject matter experts or through mailing lists from national fire and burn prevention organizations.
Nationwide Online Survey

Questions included:
- 1 consent question
- 11 demographic questions
- 3 institutional questions
- 20 programmatic questions
- 2 wrap-up questions
Nationwide Survey Results

✓ Total of 211 surveys were started
✓ 135 surveys were completed in its entirety
✓ 37 states represented
Nationwide Survey Results

The majority of the respondents were:

- Fire departments (n=124; 76.5%)
- Represented local municipalities (n=91; 56.2%)
- Provided fire prevention and life safety programs (n=156; 95.1%)
Nationwide Survey Results

Most common types of fire safety and burn prevention programs offered:

- Smoke Alarm Education (n=137; 90.7%)
- Fire Extinguishers (n=131; 86.8%)
- Fire Escape Planning (n=113;
Do you evaluate the effectiveness of your [program name] educational programming?

☑️ Majority responded **YES**
Nationwide Survey Results

Two most common methods of program effectiveness evaluation:

✓ Number served (89.5%–91.5%)
✓ Injury-loss statistics (47.4%–63.8%)
Although the majority of the respondents of the survey stated that they evaluate the effectiveness of their programs, the measurement tool most widely utilized is the **number of people served**.

Simply counting the number of people served does not prove effectiveness of a program.
Phone Interviews

Based on the results of our survey, we conducted more detailed interviews by telephone with 14 subject matter experts that indicated that they assessed for behavior change.
Phone Interview Results

Interviewees reported conducting knowledge based multiple choice questions as their assessment for behavior change.

Knowledge Transfer = Behavior Change
Focus Group Meeting

- May 23-24, 2018 in Burbank, CA
- 7 Subject Matter Experts
- 2 AARBF Staff
- Ed Comeau, WriterTech.com
- Dr. Ellie Kazemi, CSUN
- Dr. Andrew Ainsworth, CSUN
Focus Group Meeting

Focused on four key categories:
1. Smoke Alarms
2. Fire Escape
3. Burn Prevention
4. Burn Treatment
Step Two

Develop a tool to evaluate existing programs/effectiveness

https://youtu.be/_dI3aiKR7bM
BeSafe Tool Instructions

1. **Obtain BeSafe Tool Training**: Learn and practice using the BeSafe tool.

2. **Set Up Your Environment**: Set up the environment for simulation-based training and activities.

3. **Pre-Training Knowledge Test**: Provide your students with the knowledge test pre-training and offer an incentive for high achievement.

4. **Gather a Sample of Students**: Gather a sample of students who will demonstrate their safety skill behaviors. We recommend 15-20% students.

5. **Pre-Training BeSafe Tool**: Observe the behaviors of your chosen students. It is important that you do not correct the student if they mess up.

6. **Conduct Training**: Provide your fire safety educational program as usual.

7. **Post-Training BeSafe Tool**: Have the same students go through the BeSafe Tool scenarios once more. Observe and notate their behaviors.

8. **Post-Training Knowledge Test**: Provide your students with the knowledge test post-training and offer an incentive for high achievement.
BeSafe Tool Instructions

Step One: Training

https://youtu.be/jmTQw3iKm0U
BeSafe Tool Instructions

Step Two: Set Up the Environment
BeSafe Tool Instructions

Step Three: Pre-Training
Knowledge Test

1. You are playing with some friends at your house, and you find a lighter on the kitchen table. What should you do?
   - Pick up the lighter and throw it away
   - Leave the lighter where you find it and tell an adult
   - Leave the lighter where you find it

2. You see smoke in your room. What should you do?
   - Get low to the ground and travel outside
   - Hide under your bed
   - Stand up and run outside

3. What do you do, Drop, Roll?
   - When your clothes start to burn
   - When you smell or see smoke in your house
   - When your clothes are on fire

4. You get a burn on your hand. What should you put on the area that is burned?
   - Put ice on it to cool it down
   - Put cold water on it
   - Put lotion on it

5. What should you call 911?
   - When your mom is lying on the floor and you cannot wake her up
   - When you cannot find your favorite toy
   - When you fall off your bike and scratch your knee

Student’s Name: ______________________
Teacher’s Name: ______________________
School Name: ______________________
Grade: __________________
Date: __________________
Step Four: Gather a Sample of Students

Gather a sample of students who will demonstrate their safety skill behaviors.

We recommend 10-20% students.
BeSafe Tool Instructions

Step Five: Pre-Training BeSafe Tool
BeSafe Tool Instructions

Step Six: Conduct Training
BeSafe Tool Instructions

Step Seven: Post-Training BeSafe Tool
BeSafe Tool Instructions

Step 8: Post-Training Knowledge Test

1. You are playing with some friends at your house, and you find a lighter on the kitchen table. What should you do?
   - Pick up the lighter and throw it away
   - Leave the lighter where you find it and tell an adult
   - Leave the lighter where you find it

2. You see smoke in your room. What should you do?
   - Get low to the ground and crawl outside
   - Hide under your bed
   - Stand up and run outside

3. When do you Stop, Drop, and Roll?
   - When your smoke alarm is making noise
   - When you smell or see smoke in your house
   - When your clothes are on fire

4. You get a burn on your hand. What should you put on the area that is burned?
   - Put ice on it to cool it down
   - Put cool water on it
   - Put honey on it

5. When should you call 911?
   - When your mom is lying on the floor and you cannot wake her up
   - When you cannot find your favorite toy
   - When you fall off your bike and scratch your knees
BeSafe Tool Instructions

1. Pre-Training Knowledge Test
2. Pre-Training BeSafe Tool
3. Fire/Burn Safety Presentation/Training
4. Post-Training BeSafe Tool
5. Post-Training Knowledge Test
# BeSafe Tool

<table>
<thead>
<tr>
<th>Situation</th>
<th>Correct Responding required</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notes to Trainer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
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<td></td>
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<tr>
<td>2.</td>
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<tr>
<td>3.</td>
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<tr>
<td><strong>Situation:</strong></td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<tr>
<td>7.</td>
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</tr>
</tbody>
</table>

**Total "Yes"** | 7
BeSafe Tool: Fire Escape

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Correct responding required</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Your bedroom door is not hot and there is no visible fire or smoke. What do you do?”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Slid to the edge of bed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Walked/crawled to door</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Felt the Door (door is not hot)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Opened the door</td>
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<tr>
<td>5. Looked both ways for fire or smoke (there is none)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Walked to the nearest exit, front or back door</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Went to the meeting place outside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total “Yes”</strong></td>
<td></td>
<td>7</td>
<td></td>
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</table>
BeSafe Tool: Fire Escape

<table>
<thead>
<tr>
<th>Scenario 2</th>
<th>Correct responding required</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes to Trainer:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire has spread, bedroom door is hot, bedroom is on the first floor.</td>
<td></td>
<td>1. Slid to the edge of bed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Walked/crawled to door</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Felt the Door (&quot;door is hot&quot;)</td>
<td></td>
</tr>
<tr>
<td>Situation:</td>
<td></td>
<td>4. Walked/crawled to window</td>
<td></td>
</tr>
<tr>
<td>&quot;It is the middle of the night. The smoke alarm goes off or you smell smoke&quot;. What do you do?&quot;</td>
<td></td>
<td>5. Opened the window</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Climbed out the window</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Went to the meeting place outside</td>
<td></td>
</tr>
</tbody>
</table>

Total “Yes” /7
BeSafe Tool: Fire Escape

<table>
<thead>
<tr>
<th>Scenario 3</th>
<th>Correct responding required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situation:</td>
<td>“Fire has spread, bedroom door is hot, your bedroom is on 2nd floor or higher. Your smoke alarm goes off or you smell smoke, what do you do.”</td>
</tr>
<tr>
<td>1. Slid to the edge of bed</td>
<td></td>
</tr>
<tr>
<td>2. Walked/crawled to door</td>
<td></td>
</tr>
<tr>
<td>3. Felt the Door (door is hot)</td>
<td></td>
</tr>
<tr>
<td>4. Walked/crawled to window</td>
<td></td>
</tr>
<tr>
<td>5. Alerted someone (called 911, yelled, waved arms or something visible from outside)</td>
<td></td>
</tr>
</tbody>
</table>

Total “Yes” /5
BeSafe Tool: Fire Escape

Observation Video:
Scenario 2

https://youtu.be/xe3Y2ir0144
**BeSafe Tool: How Did you do?**

### Scenario 2

<table>
<thead>
<tr>
<th>Notes to Trainer:</th>
<th>Correct responding required</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notes to Trainer:</strong></td>
<td>1. Slid to the edge of bed</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Fire has spread, bedroom door is hot, bedroom is on the first floor.</strong></td>
<td>2. Walked/crawled to door</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Situation:</strong></td>
<td>3. Felt the Door (&quot;door is hot&quot;)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>&quot;It is the middle of the night. The smoke alarm goes off or you smell smoke&quot;. What do you do?&quot;</td>
<td>4. Walked/crawled to window</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>5. Opened the window</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>6. Climbed out the window</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>7. Went to the meeting place outside</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Total "Yes"** 3 /7
BeSafe Tool

Other areas of application?
Contact Us

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Questions?

BeSafe Tool

www.BeSafeTool.org
Thank You