Evaluating online disaster preparedness training for family caregivers of senior citizens

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University of Hawaii at Manoa
Presentation Outline

• Background
• Project Design
• Methodology
• Findings
• Conclusion
Poll

• Do you live with grandparents and/or elderly family members?
• Do you live with family members who will soon become senior citizens?
Poll

- Do you live with grandparents and/or elderly family members?
- Do you live with family members who will soon become senior citizens?
Background: How did I select my topic?

• Experience in creating courses
  – Developed for government (state & county)
• Natural Hazard Preparedness for Caregivers of Senior Citizens
• Subject matter beneficial to all, especially for family members
• 3 generations lived together
Project Purpose

Design training for adults to increase *their* awareness of the special disaster preparedness needs of elderly family *members* with whom they reside or provide care.
Background: Frequency of Hazards in U.S.

Center for Research on the Epidemiology of Disasters (CRED)
Background: Problem

Disproportionate number of seniors died from Hurricanes Katrina and Sandy. Senior citizens are vulnerable. Many deaths were preventable.


Background: U.S. Population Growth

![Population Growth Chart]

- **2010**: Population (Billions) = 6.8
- **2020**: Population (Billions) = 7.7
- **2030**: Population (Billions) = 8.5
- **2040**: Population (Billions) = 9.1
- **2050**: Population (Billions) = 9.5

The chart shows projected population growth from 2010 to 2050, with specific populations for each year.

- **65+**: Older adults
- **15-64**: Working-age population
- **>15**: Remaining population

Source: Department of Economic and Social Affairs, United Nations
Background: Multigenerational Families

In 2009, one in six Americans lived in homes with at least two adult generations.

Project Purpose: Focus

• Formal Caregiving vs. **Informal Caregiving**
  – Family members, friends
• Have little/no time for or access to training
• Increase knowledge ➔ Increase resilience

RESILIENCE
Project Design: Theory

• Baldwin and Ford’s Transfer of Training theory
  – Knowledge gained from training is transferred to performance

• Keller’s ARCS Model of Motivational Design
  – Perceived utility/relevance increases motivation and acquisition
    – Content redesigned to build confidence


Project Design

• Course developed by the National Disaster Preparedness Training Center (NDPTC) at the University of Hawaii at Manoa
• Articulate Storyline (E-Learning Authoring Software)
• Canvas (Learning Management System)
Project Design: Repackage & Redesign of Instructional Content
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Hazards That Could Affect Your Community
- Tsunami
- Volcanic Eruption
- Flood (river or coastal)
- Earthquake
- Fire (wildland and structure)
- Windstorms
- Heavy Snowfall
- Coastal Sea Storms with Storm Surges
- Extreme or Prolonged Cold Spells
- Terrorism
- Avalanche/Landslide
- Oil/Fuel Spills and HAZMAT or Chemical Releases
- Community Power/Utility Failure

NDPTC version (8 hr)  Project version (1-2 hrs)
Project Design

- Natural Hazard Identification

**Meteorological**
- Hurricane, Cyclone
- Lightning

**Geophysical**
- Earthquake
- Tsunami
- Landslide
- Volcano
Project Design

• Assessing Capabilities

Cognitive Capabilities

- Memory loss
- Trouble focusing or recalling information
- Mild cognitive impairment
- Trouble with speech, body movements
- Dementia
- Alzheimer’s, vascular, etc.
- Mood swings

Preparedness Actions for Cognitive Capabilities

- Prepare reminder cards and medical alert tags
- Draft an evacuation map to the nearest shelter
- Coordinate with friends and neighbors
- Help seniors understand the situation and what is required
- Be calm and help reassure seniors
Project Design

• Assessing Needs

Social Needs
- Isolation
- Distrust
- Language barriers
- Dependence on support services

Preparedness Actions for Social Needs
- Foster open and regular communication
- Introduce and familiarize senior citizens to neighbors and community
- Coordinate with neighbors
- Prepare vital information cards that describes senior citizen’s needs and capabilities
Project Design

- Risk and Vulnerability

What is the level of Risk for Wildfire for a house next to a forest known to experience drought and hot weather?

- Low
- Medium
- High

Which structure is more vulnerable to a tsunami? (Consider the structure’s ability to withstand/cope)

Select your answer by clicking on the correct image below.

- Shack
- Condo
Methodology

• 36 Participants (35 completed)
• Pre-Survey
  – Demographic and Confidence Level
• Instructional Content
• Assessment
  – Matching, Multiple Choice, and Scenario
• Post-Survey
  – Confidence Level
  – Ease of Use/Engagement/Quality/Satisfaction
  – Feedback
Findings: Demographics

- More than half (69%) were under 40 years of age.
- About half (54%) did not live with or provide care for seniors or elderly family members.
- An overwhelming majority (90%) had at least a 2-year degree.
- All were employed: 80% full-time, 20% part-time.
Poll

• I am confident in my knowledge of disaster preparedness for senior citizens.
  A. Strongly agree
  B. Agree
  C. Unsure/Neutral
  D. Disagree
  E. Strongly disagree
Poll

• I am confident in my knowledge of disaster preparedness for senior citizens.
  A. Strongly agree (5)
  B. Agree (4)
  C. Unsure/Neutral (3)
  D. Disagree (2)
  E. Strongly disagree (1)
Findings: Average Confidence Level

Pre-Survey  | Post-Survey |
---|---|
General Knowledge | Seniors Citizen Knowledge |
---|---|
3.29 | 4.34 |
2.83 | 4.23 |

n=35
Findings: Overall Confidence Level by Age

Overall Confidence Level by Age

<table>
<thead>
<tr>
<th>Ages</th>
<th>Confidence Level</th>
<th>Pre-Survey</th>
<th>Post-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>2.79</td>
<td>3.64</td>
<td>4.29</td>
</tr>
<tr>
<td>40+</td>
<td>4.27</td>
<td>4.27</td>
<td>n=35</td>
</tr>
</tbody>
</table>

Note: Overall = General Knowledge + Senior Citizen Knowledge
Findings: Overall Confidence Level by Caregiver Status

Pre-Survey

Post-Survey

Note: Caregiver=living with/providing care for 1 or more seniors,
Non-caregiver=0 (none)
Findings: Assessment Scores

Number of Correct Answers Out of 12 (%)

- 6: 3% (1 participant)
- 7: 3% (1 participant)
- 8: 3% (1 participant)
- 9: 11% (4 participants)
- 10: 25% (9 participants)
- 11: 49% (17 participants)
- 12: 6% (2 participants)

n=35
Findings: Assessment Scores

- Number of Correct Answers Out of 12 (%)

- Participation: 25%

- Findings:
  - Out of 12:
    - 6: 3% (1 participant)
    - 7: 3% (1 participant)
    - 8: 3% (1 participant)
    - 9: 11% (4 participants)
    - 10: 25% (9 participants)
    - 11: 49% (17 participants)
    - 12: 6% (2 participants)

- n=35
Findings: Assessment Scores

<table>
<thead>
<tr>
<th>Number of Correct Answers Out of 12 (%)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>7</td>
<td>3%</td>
</tr>
<tr>
<td>8</td>
<td>3%</td>
</tr>
<tr>
<td>9</td>
<td>11%</td>
</tr>
<tr>
<td>10</td>
<td>25%</td>
</tr>
<tr>
<td>11</td>
<td>49%</td>
</tr>
<tr>
<td>12</td>
<td>6%</td>
</tr>
</tbody>
</table>

n=35
Findings: Assessment Scores

- 49% correct answers (n=35)
- 25% correct answers
- 11% correct answers
- 6% correct answers

Number of Correct Answers Out of 12 (%)
Findings: Percent Answering Correctly

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>94%</td>
</tr>
<tr>
<td>Q2</td>
<td>97%</td>
</tr>
<tr>
<td>Q3</td>
<td>91%</td>
</tr>
<tr>
<td>Q4</td>
<td>100%</td>
</tr>
<tr>
<td>Q5</td>
<td>91%</td>
</tr>
<tr>
<td>Q6</td>
<td>100%</td>
</tr>
<tr>
<td>Q7</td>
<td>97%</td>
</tr>
<tr>
<td>Q8</td>
<td>94%</td>
</tr>
<tr>
<td>Q9</td>
<td>89%</td>
</tr>
<tr>
<td>Q10</td>
<td>77%</td>
</tr>
<tr>
<td>Q11</td>
<td>46%</td>
</tr>
<tr>
<td>Q12</td>
<td>46%</td>
</tr>
</tbody>
</table>

n=35
Findings: Percent Answering Correctly

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>94%</td>
</tr>
<tr>
<td>Q2</td>
<td>97%</td>
</tr>
<tr>
<td>Q3</td>
<td>91%</td>
</tr>
<tr>
<td>Q4</td>
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<td>Q5</td>
<td>91%</td>
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<td>Q6</td>
<td>100%</td>
</tr>
<tr>
<td>Q7</td>
<td>97%</td>
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<tr>
<td>Q8</td>
<td>94%</td>
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<td>Q9</td>
<td>89%</td>
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<td>Q10</td>
<td>77%</td>
</tr>
<tr>
<td>Q11</td>
<td>46%</td>
</tr>
<tr>
<td>Q12</td>
<td>46%</td>
</tr>
</tbody>
</table>

n=35
Findings: Average Participant Rating

Ease of Use: 4.47
Engagement: 4.47
Quality: 4.41
Satisfaction: 4.27

n=35
# Findings: Highly Rated

<table>
<thead>
<tr>
<th>Thematic Construct</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use</td>
<td>4.47</td>
</tr>
<tr>
<td>Module was easy to use</td>
<td>4.51</td>
</tr>
<tr>
<td>Directions are easy to understand</td>
<td>4.54</td>
</tr>
<tr>
<td>Questions are easy to complete</td>
<td>4.34</td>
</tr>
<tr>
<td>Engagement</td>
<td>4.47</td>
</tr>
<tr>
<td>Length of module is manageable</td>
<td>4.46</td>
</tr>
<tr>
<td>Use of website makes module more engaging</td>
<td>4.40</td>
</tr>
<tr>
<td>Videos and images used are engaging</td>
<td>4.54</td>
</tr>
<tr>
<td>Quality</td>
<td>4.41</td>
</tr>
<tr>
<td>Information presented is useful for me</td>
<td>4.29</td>
</tr>
<tr>
<td>Information presented is useful for others</td>
<td>4.40</td>
</tr>
<tr>
<td>Information presented is appropriate</td>
<td>4.56</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>4.27</td>
</tr>
<tr>
<td>Consider using online training again in the future</td>
<td>4.31</td>
</tr>
<tr>
<td>Would recommend others use online training</td>
<td>4.23</td>
</tr>
</tbody>
</table>
## Findings: Section Feedback

<table>
<thead>
<tr>
<th>Section</th>
<th>n=35</th>
<th>Confusing</th>
<th>Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Hazards</td>
<td></td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Caregiver</td>
<td></td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Non-caregiver</td>
<td></td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Assessing Capabilities</td>
<td></td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Caregiver</td>
<td></td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Non-caregiver</td>
<td></td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Assessing Needs</td>
<td></td>
<td>3</td>
<td>24</td>
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<tr>
<td>Caregiver</td>
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<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Non-caregiver</td>
<td></td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Assessing Risk and Vulnerability</td>
<td></td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Caregiver</td>
<td></td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Non-caregiver</td>
<td></td>
<td>3</td>
<td>13</td>
</tr>
</tbody>
</table>

Note: Open-ended question, could respond to both Confusing and Useful
Findings: Feedback

• Want more information on preparedness organizations that they can contact

• Instructional content:
  – More scenario questions
  – Provide definitions for unique terminology/jargon
  – More examples of/more information on risk and vulnerability

• Feedback on test (assessment) questions
Conclusions

• Module addressed time and access concerns
  – Majority (29 of 35) reported that they took less than an hour to complete
  – Content made available online for informal caregivers

• Positive response
  – 32 of 35 would recommend the module (3 unsure)
Conclusions

- Future iterations
  - Track individual progress
  - Increase number of participants
  - Increase diversity of participants
  - Add additional content requested by participants
  - Work with additional subject matter experts
Thank you

- Critical friends
- Colleagues and classmates
- Dr. Irvine and the other LTEC faculty
- Participants

http://ndptc.hawaii.edu
For More Information

- Ready.gov (FEMA) Guide
  http://1.usa.gov/1FMbTyI

- Red Cross Guide
  http://rdcrss.org/1bBunA1
Questions?