The Differential Vulnerability of Non-Native Language Speakers to Natural Hazards: A Case Study of the 2013 Colorado Floods

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2013 Colorado Floods: Statewide Impact

- September 11-13: heavy rainfall caused flooding in 24 counties
  - 11 counties presidentially declared disaster areas
  - Counties with most damage were Boulder, Larimer and Weld
- Total estimate of damage: 3 billion dollars
Research Questions

- What was the impact of the floods on Spanish-speaking households?
- Are Spanish-speaking households uniquely vulnerable to disasters? If so, why and how?
- What are the unique needs of Spanish-speaking households in the recovery process?
Projections for Spanish-Speaking Households

By 2020:

- Spanish speakers (majority of which are Hispanic/Latino) projected to represent 13% of U.S. Population ages 5 and above
- Spanish speakers will account for 60% of total population that speaks a language other than English

## How Weld County Compares

<table>
<thead>
<tr>
<th>Geographic Entity</th>
<th>Ethnicity: % Hispanic or Latino [1]</th>
<th>Language: % over age 5 that speak Spanish [2]</th>
<th>Language: % Spanish speakers over age 5 that speak English less than “very well” [2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>16.3%</td>
<td>12.7%</td>
<td>44.5%</td>
</tr>
<tr>
<td>Colorado</td>
<td>20.7%</td>
<td>11.9%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Weld County</td>
<td>28.4%</td>
<td>16.8%</td>
<td>39.0%</td>
</tr>
</tbody>
</table>

Some studies exist on how language and culture increase vulnerability to disasters (Fothergill, Maestas and DeRouen, 1999, Donner and Rodriguez, 2008).

Latino households gather information about disaster preparedness differently (Peguero, 2006).

Ethnicity, stereotypes and discrimination influence access to housing and shelter both before and after a disaster (Bolin and Stanford, 1999, Dash, 2013).
Overview of Spanish-Speaking Study Participants

- All living in mobile home parks at time of flood
- Located in Evans & Milliken
- Primarily low-income
- Primarily families
- Low levels of civic participation
- Close-knit communities

<table>
<thead>
<tr>
<th>Study Participants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># Households</td>
<td>28</td>
</tr>
<tr>
<td># Individuals</td>
<td>125</td>
</tr>
<tr>
<td>Household Income:</td>
<td></td>
</tr>
<tr>
<td>Income Below $40,000</td>
<td>89%</td>
</tr>
<tr>
<td>Area Median Income:</td>
<td>$56,589</td>
</tr>
<tr>
<td>Had Contact with Officials Prior to Flood</td>
<td>4%</td>
</tr>
<tr>
<td>Said Community was Close-Knit</td>
<td>89%</td>
</tr>
</tbody>
</table>
Recruitment of Spanish-Speaking Households

- Recruitment and survey tools in Spanish (piloted with Spanish-speakers)
- Community listservs, newsletters and meetings were not successful
- Canvassing local stores for leads
- Door-to-door and word of mouth
- Electronic contact/surveys would not be effective
Preliminary Findings

Resilient Colorado
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UNIVERSITY OF COLORADO DENVER
32% reported attending public meetings for recovery information
  ○ No professional interpreting services at public meetings
  ○ Public meeting model doesn’t match with culture of population
  ○ Communication barriers existed prior to the flood

Assumptions were made about legal status and length of residency
  ○ Most imagined that Latinos are undocumented immigrants who recently arrived in Colorado
  ○ In reality households have lived in the area for 11 + years on average
Access to Funding Sources

- All Spanish-speaking households interviewed received FEMA funding, contrary to our expectations
- Funding varied widely; Only half of households reported that funding received was sufficient

Source: Denver Post
Social Capital

- For those who could repair and return, strong neighborhood were key in communities overall recovery
  - 78% volunteered time in Milliken
- Despite strong ties, those displaced due to 100% damage, could not leverage community ties for recovery.

Source: Denver Post
Housing Challenges

- Region-wide rent increases and shortage of affordable housing
- Additional challenges for Spanish-speaking households:
  - Vital paperwork destroyed, therefore more difficult to find temporary housing
  - Lack of comparable housing for undocumented population
  - Requirements for credit, etc. increased after the flood

[Image of flooded Eastwood Village Mobile Home Park, Evans Colorado. Source: The Denver Post.]
Avenues for Future Research

- Access to and attitudes regarding loans and credit cards may influence recovery
- Local Governments may play role in differential experiences
- Post-disaster psychological trauma for non-native English speakers
Acknowledgments

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