

# Workplace Safety in Extreme Weather: Institutional Gaps in Protecting Multilingual Immigrant Workers



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## Background:

- Spanish-speaking immigrant workers in the U.S. face disproportionate risk during extreme weather due to social vulnerabilities, limited workplace protections, and structural inequalities. Workplace safety systems often fail to account for multilingual needs, shifting responsibility onto workers.
- This study examines how these vulnerabilities shape workplace safety during extreme weather and identifies worker-informed strategies to improve protection.

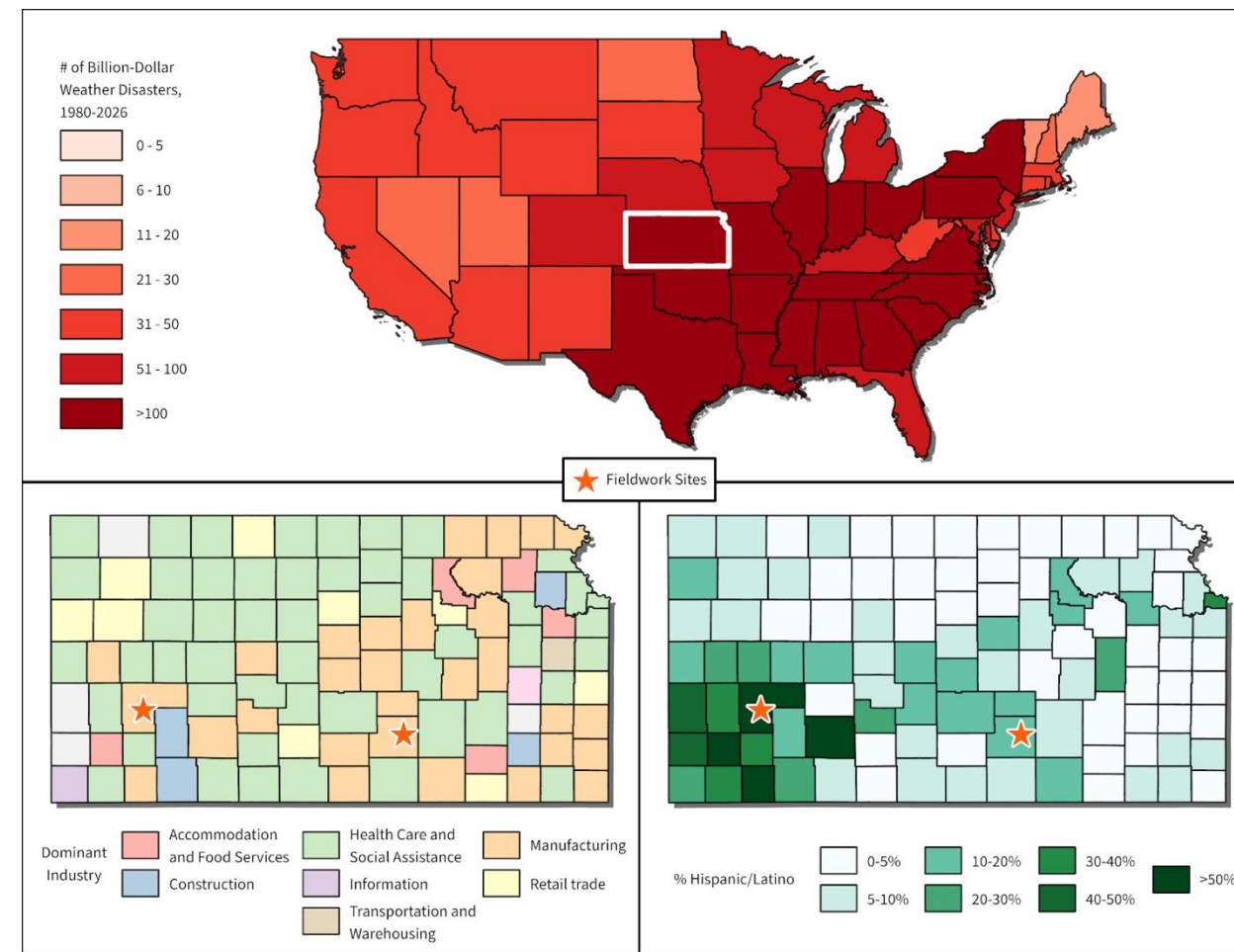


Fig. 1. Billion-dollar weather and climate disasters by state, 1980–2026 (top), highlighting Kansas. County maps show dominant industry (left) and Hispanic/Latino population share (right). Stars mark Wichita and Garden City field sites.

## Findings:

**RQ1: How do structural inequities and social vulnerabilities shape workplace protection practices for Spanish-speaking immigrant workers during extreme weather in Kansas?**

- Limited multilingual information and knowledge gaps hindered understanding and response
- Unclear, inaccessible, or inconsistently enforced workplace protocols, procedures, and safety resources exacerbated risk
- Workplace threats, power imbalances, and fear of retaliation inhibited protective action during extreme weather events

- English-only warnings and limited weather knowledge reduced workers' ability to understand hazards and respond effectively during extreme weather events.
- Inconsistent emergency preparedness plans and limited workplace safety resources left workers vulnerable during hazardous weather conditions.
- Fear of retaliation and unequal workplace power dynamics discouraged workers from taking protective action during extreme weather events.

*"The forecast said conditions would get bad, but we kept working... eventually they didn't let us leave because the roads were closed."*  
— Juan, meat processing worker

**RQ2: What worker-informed strategies could strengthen extreme weather preparedness and protection for multilingual immigrant employees?**

- Institutionalizing workplace preparedness during extreme weather events
- Standardizing multilingual hazard communication
- Investing in weather-resilient infrastructure and protective equipment

- Workers emphasized the need for clear emergency preparedness plans, regular drills, and consistent workplace safety protocols during extreme weather events.
- Participants identified standardized Spanish-language warnings and accessible weather communication as essential for improving workplace safety.
- Workers highlighted the importance of weather-resilient infrastructure and protective equipment to reduce exposure during hazardous conditions.

## Limitations:

- This study focused on a relatively small sample of Spanish-speaking immigrant workers in two Kansas cities, limiting the generalizability of findings to other regions, industries, and populations.
- Findings were based on self-reported experiences collected through focus groups, which may be influenced by recall bias and group dynamics.

## Future Research:

- Future research should expand geographically, incorporate quantitative approaches, and evaluate the effectiveness of multilingual communication systems and workplace emergency preparedness strategies across diverse occupational settings.

## Methodology:

- Seven focus groups across Garden City, and Wichita, Kansas, with one session in each city.
- 29 Hispanic and Latinx immigrant participants were recruited through critical sampling.
- Audio recordings were transcribed into 79 pages of single-spaced text and translated to English.
- A phronetic iterative qualitative data analysis was used to examine the focus groups transcriptions and create common themes.

Variable	n (%)
<b>Gender</b>	
Male	4 (13.8%)
Female	25 (86.2%)
<b>Age</b>	
18–24	0 (0%)
25–34	1 (3.4%)
35–44	0 (0%)
45–54	17 (58.5%)
55–64	9 (31.0%)
65+	2 (6.9%)
<b>Ethnicity</b>	
Hispanic or Latino	29 (100%)
Not Hispanic or Latino	0 (0%)
<b>Place of Birth</b>	
Mexico	24 (82.8%)
U.S.	4 (13.8%)
El Salvador	1 (3.4%)
<b>Location</b>	
Garden City, Kansas	21 (72.4%)
Wichita, Kansas	8 (27.6%)

Table 1. Demographics of Immigrant Workers from Wichita and Garden City, Kansas.

## Kansas a Prueba del Clima Workshop:



Fig. 2. Spanish-language pamphlet from the Kansas a Prueba del Clima workshop covering tornado basics, warnings vs. watches, preparedness, shelters, and local Spanish-language resources.

## Discussion:

- Institutional failures increased extreme weather vulnerability among Spanish-speaking immigrant workers.
- Language barriers, weak preparedness plans, and workplace power dynamics limited protective action.
- Workers emphasized multilingual communication, preparedness plans, and safer infrastructure as key solutions.

## Applications:

- Findings support the development of enforceable workplace emergency preparedness standards that include multilingual communication and worker protections during extreme weather events.
- Results highlight the need for employers and agencies to integrate Spanish-language warnings, regular safety training, and weather-resilient workplace infrastructure into occupational safety practices.
- This project can inform future OSHA guidance, workplace preparedness policies, and National Weather Service outreach efforts targeting multilingual and immigrant communities.

## Contact me!

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