California Building Resilience Against Climate Effects (CalBRACE) Project

Short Title: Linguistic Isolation
Full Title: Percent of households with no one aged ≥ 14 years speaking English

CalBRACE Domain: Population Sensitivity

Why is this important to health?

Climate change and increasing temperatures pose a serious public health concern for people who are linguistically isolated.[1] According to the U.S. Census, a household is linguistically isolated when all persons 14 years of age or older speak a language other than English and no one speaks English very well. Linguistic isolation may hinder protective behaviors during extreme weather and disasters by limiting access to or understanding of health warnings. Additionally, natural disasters and extreme weather can lead to disruptions to management of chronic conditions for people who are socially or linguistically isolated.[2, 3] Failure to evacuate or take shelter in place during coastal storms or other extreme weather events increases vulnerability to injury or death.[4] Low literacy in people who are linguistically isolated can be another barrier to accessing linguistically-appropriate health information.[5] Language barriers can be an issue for new immigrants from non-English speaking countries, and older first generation immigrants who revert to their first languages later in life due to aging. Also, recently arrived people who are older may find it difficult to learn English and sometimes can only communicate with people their own age, if the younger generation does not speak the traditional dialects. Asylum seekers, mothers with babies (particularly single mothers), young children, those with low socioeconomic status, people who are homeless, people with limited English, and those who are socially isolated within culturally and linguistically diverse communities are at increased risk of the impacts of climate change.[3]

Summary of Evidence for Climate and Health

A study of extreme heat found that people who live in linguistically isolated households were at increased risk of extreme heat-related health problems, and they are more prone to making heat distress calls to 911 (1.03, 95% CI: 1.00–1.02).[1] A study of Hurricane Katrina aftermath found that lack of relatives or confidants in the area inhibited survivors from relocating or otherwise coping.[2] This social isolation led to structural and financial barriers to medical care, which in turn disrupted management of chronic conditions.[2] Those having no relatives were 3.4 times (OR 3.4; 95% CI 1.8-6.5) more likely to experience treatment disruptions; and those having no confidants were 3.6 times (OR 3.6; 95% CI 1.6-8.4) more likely.[2] Social isolation may, in some cases, serve as a proxy for linguistic isolation.

Key References:

1. Uejio CK, Wilhelmi OV, Golden JS, et al. Intra-urban societal vulnerability to extreme heat: The role of heat exposure and the built environment, socioeconomics, and neighborhood stability. *Health & Place.* 2011.
2. Kessler RC. Hurricane Katrina's Impact on the Care of Survivors with Chronic Medical Conditions. Boston, MA: Department of Health Care Policy, Harvard Medical School; July 2007.
3. Hansen A, Bi P, Saniotis A, et al. Extreme heat and climate change: Adaptation in culturally and linguistically diverse (CALD) communities: National Climate Change Adaptation Research Facility; 2013.
4. Lane K, Charles-Guzman K, Wheeler K, et al. Health Effects of Coastal Storms and Flooding in Urban Areas: A Review and Vulnerability Assessment. *Journal of Environmental and Public Health.* 2013.

5. DeAnne K, Messias H, Barrington C, et al. Latino social network dynamics and the Hurricane Katrina disaster. *Disasters.* 2011; 36(1).

Detailed Definition

- Indicator (percent) = $\frac{Linguistically\ Isolated\ Households}{Total\ Households}$
- Stratification: 4 language categories of non-English languages spoken at home: Spanish, European languages, Asian, and Pacific Islander, and Other languages.
- Interpretation: Linguistically isolated households are more sensitive to health impacts of climate change

Data Source and Methodology

- American Community Survey (ACS) 2010 Census (http://factfinder.census.gov)
    - Years available: 2006-2010, 2011-2015
    - Geographies available: Census tract, city, county, county division, region (derived), state

Data were downloaded from the American Community Survey (S1602 and B16002). Data was collected only of persons 5 years of age and older. Instructions mailed with the American Community Survey questionnaire instructed respondents to mark “Yes” on Question 14a if they sometimes or always spoke a language other than English at home, and “No” if a language was spoken only at school – or if speaking was limited to a few expressions or slang. For Question 14b, respondents printed the name of the non-English language they spoke at home. If the person spoke more than one non-English language, they reported the language spoken most often. If the language spoken most frequently could not be determined, the respondent reported the language learned first. Population-weighted regional estimates and standard errors were calculated. Regions in the BRACE project are based on county aggregations in the *Adaptation Planning Guide Understanding Regional Characteristics*.

Limitations

The intent of use for the information on languages spoken at home is to serve the needs of the foreign-born and specifically those who have difficulty with English. The language question is about current use of a non-English language, not about ability to speak another language or the use of such a language in the past. People who speak a language other than English outside of the home are not reported as speaking a language other than English. Similarly, people whose mother tongue is a non-English language but who do not currently use the language at home do not report the language. Some people who speak a language other than English at home may have first learned that language in school. These people are expected to indicate speaking English “Very well”. The write-in responses for language spoken at home may not always match the names or categories used by professional linguists, and categories used were sometimes geographic and sometimes linguistic.