

Energy Insecurity & Health

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Terms

Energy Security

- consistent access to enough of the kinds of energy needed for a healthy and safe life in the geographic area where a household is located.

PEDIATRICS[®]

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

A Brief Indicator of Household Energy Security: Associations With Food Security, Child Health, and Child Development in US Infants and Toddlers
John T. Cook, Deborah A. Frank, Patrick H. Casey, Ruth Rose-Jacobs, Maureen M. Black, Mariana Chilton, Stephanie Ettinger deCuba, Danielle Appugliese, Sharon Coleman, Timothy Heeren, Carol Berkowitz and Diana B. Cutts
Pediatrics 2008;122:e867-e875
DOI: 10.1542/peds.2008-0286

Energy Insecurity Measure



- **Energy Security**

- Home is adequately heated/cooled with appropriate appliances and no turn off notices

- **Moderate energy insecurity**

- Threatened turn-off of utilities because of non-payment

- **Severe energy insecurity**

- Gas or electricity turned off or oil not delivered because of non-payment
- Home was not heated or cooled ≥ 1 day; or
- Home was heated with a cooking stove (unsafe methods)

Energy insecurity and health

Who is most at risk?

Children and infants, seniors, and people with obesity and chronic diseases, e.g. cardiovascular, renal, and metabolic diseases



Early childhood
Poor overall health
Hospitalization risk
Risk of developmental delays

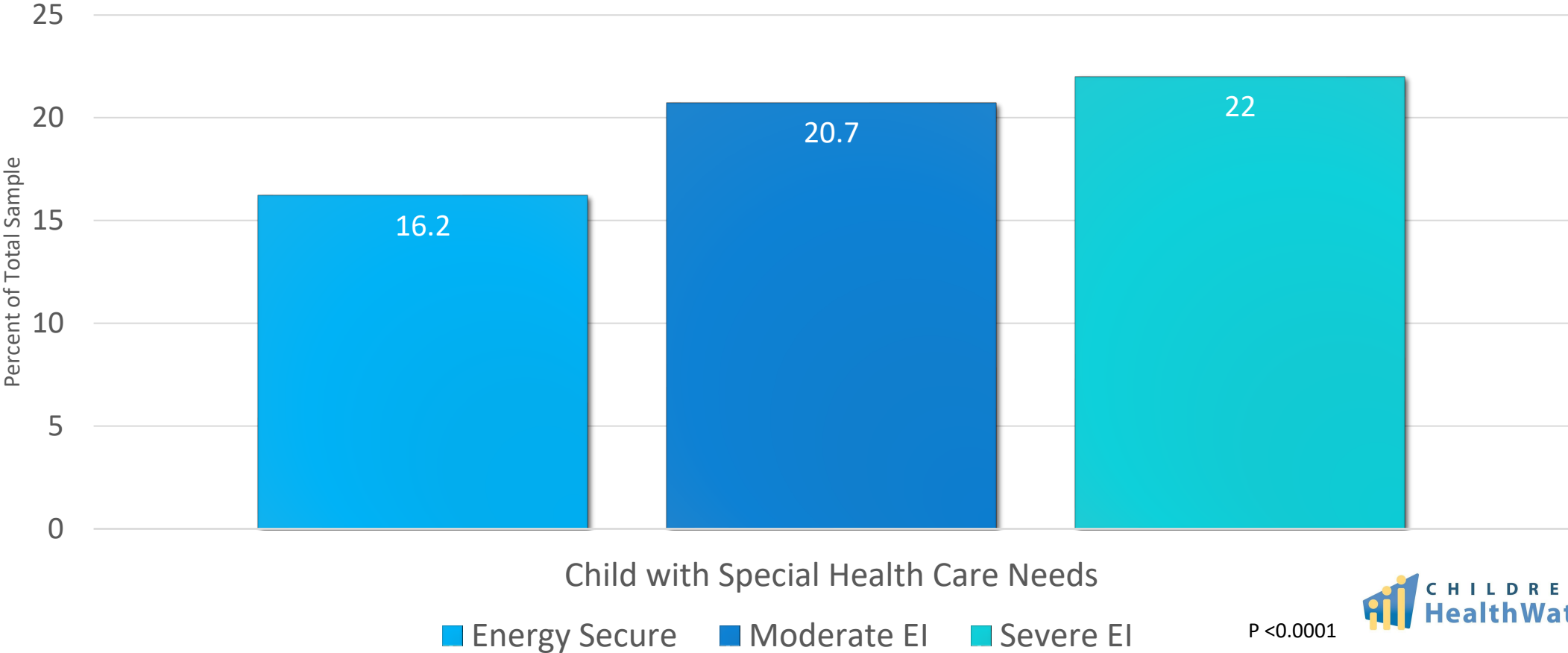


Childhood/ Adolescence
Asthma exacerbation
Poor sleep
Depression
Externalizing behavior
Noise exposure
Academic challenges



Adulthood/Senior Years
Poor overall health
Poor mental health
Chronic disease exacerbation
Poor Sleep
Stroke
Mortality

Energy Insecure Families More Likely to Have Additional Stressors



Energy insecurity & Food insecurity

“Heat or Eat”

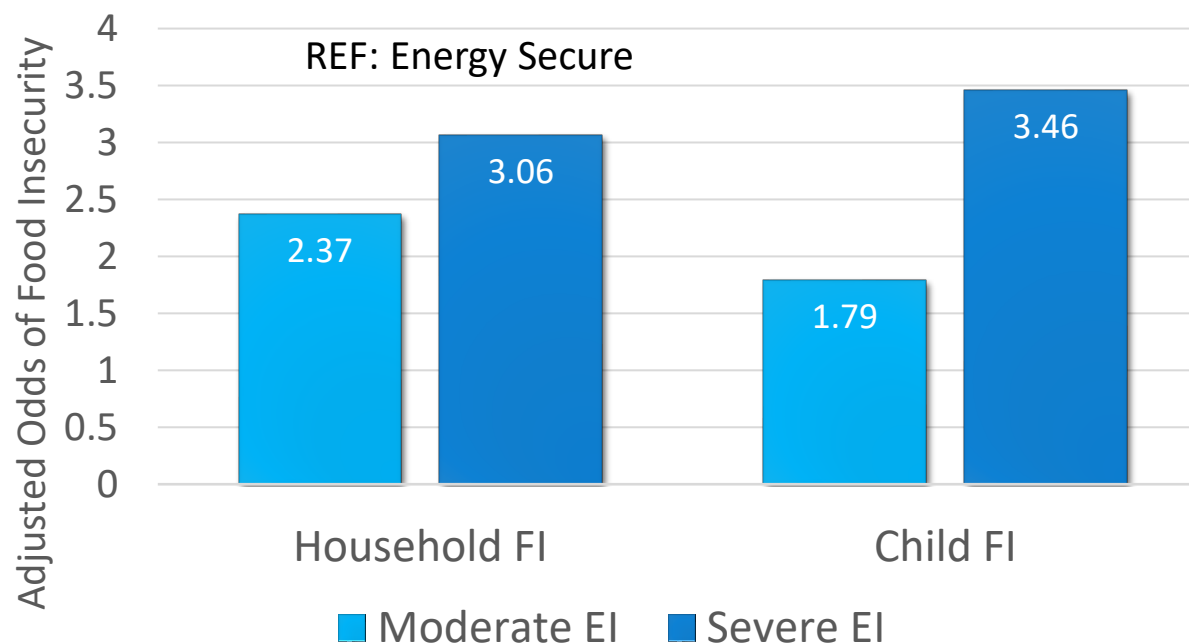
Food insecurity: inadequate access to enough food for a healthy and active life

- Household food insecurity
- Child food insecurity
- Health risks



Cook et al., 2008

Energy Insecurity Associated with Increased Risk of Both Household and Child Food Insecurity



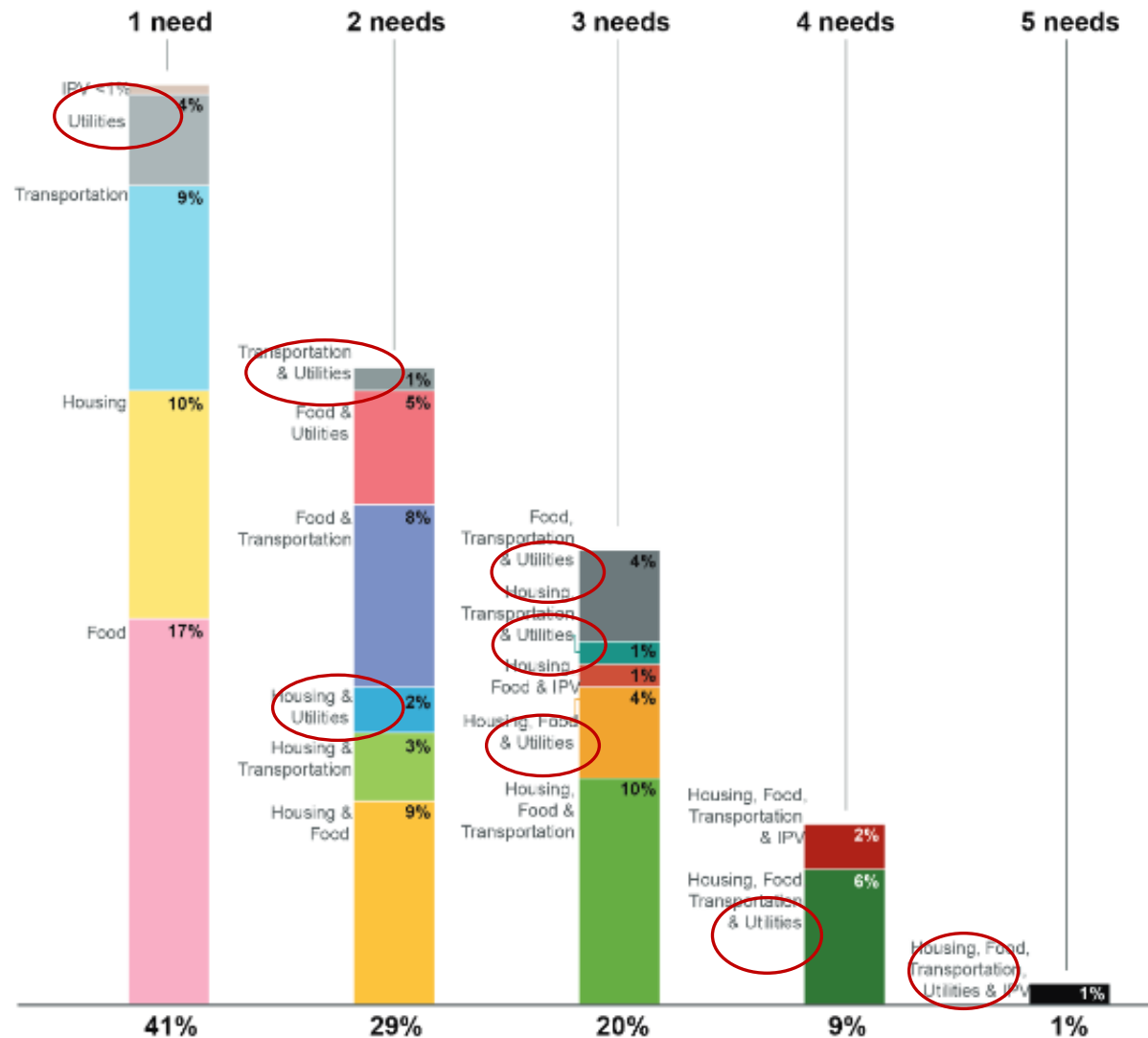
Dimensions of energy insecurity

1. **Economic:** Financial hardship associated with the cost of energy relative to income and other expenses.
2. **Physical:** Deficiencies in the physical infrastructure of the home environment that impact thermal comfort, induce harmful indoor exposures and increase energy costs.
3. **Behavioral:** Behavioral strategies used to cope, improvise and counteract the impacts of economic and structural energy insecurity

Consequences: **environmental exposures** (heat/cold stress, hazardous exposures (CO₂; fires); **health issues** (e.g. mental health/stress, asthma triggers); **social** (fear of separation from children, family disruption, residential instability**) Hernandez, 2016

Exhibit 2-9. Overlap Among Core Needs for Navigation-Eligible Beneficiaries

Nearly 60% of navigation-eligible beneficiaries reported having multiple needs.



Notes: Need combinations with < 1% of beneficiaries are not shown. The total for a bar may be greater than the sum of the need combinations shown.

Source: AHC screening and navigation data, May 2018–December 2019.

Definitions: IPV = interpersonal violence.

Accountable Health Communities –
Center for Medicare & Medicaid Services

No good national data...

Not nationally tracked

Traditionally combined with housing costs – difficult to tease apart

“Double burden”: housing + energy insecurity

Approximately 15% nationally – disconnection notice; 3% service disconnection (2015)

- Disparities by income:
 - <\$20,000 8%
 - >\$60,000 \leq 1%

Most likely to receive disconnection notice:

- Black or Hispanic
- Lower educational attainment
- Mobile home
- Renter
- Rural
- Housing built before 1980
- Children in Home

Why differences by race/ethnicity?

Inequities in income, wealth gaps (intergenerational wealth accumulation), redlining & ongoing residential segregation by price

On average: older homes, energy inefficient, structural problems, outdated/inefficient appliances, faulty energy systems

Renters: landlords may not be investing in upgrades (neglect; but also prohibitive cost)

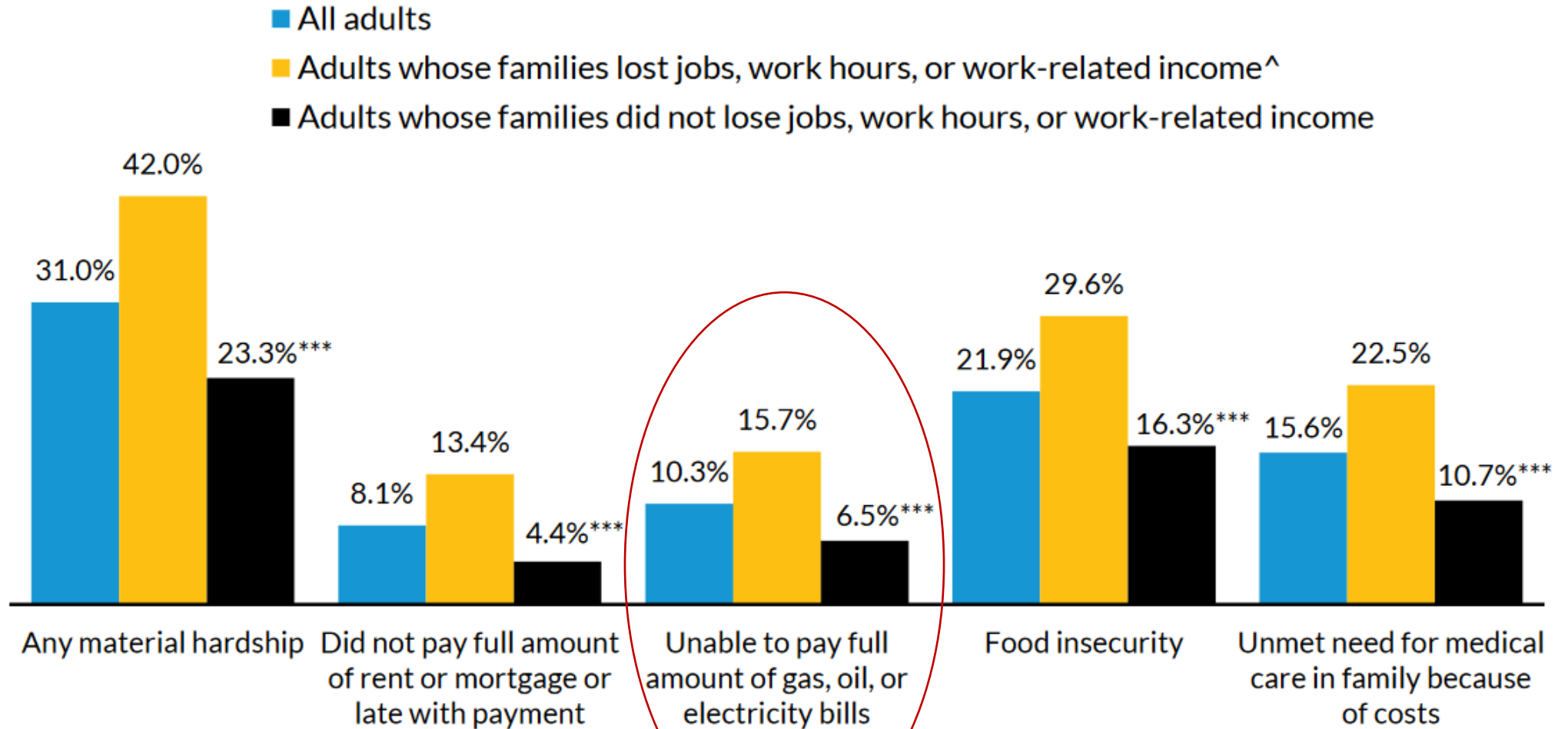


Result:

Disproportionate burden of energy insecurity AND related poor health outcomes

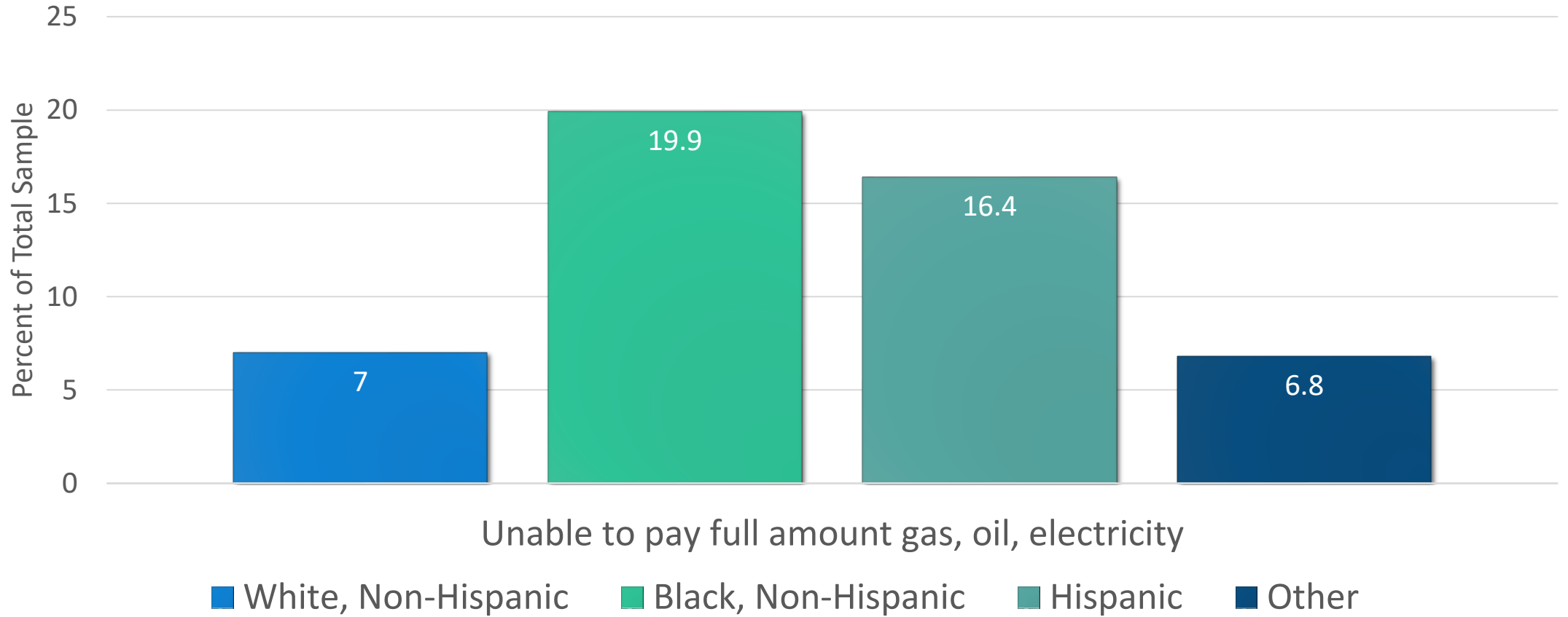
FIGURE 6

Material Hardship in the Last 30 Days Reported by Adults Ages 18 to 64, March/April 2020



URBAN INSTITUTE

Preexisting inequities exacerbated by COVID-19 Pandemic



Headlines

Extreme heat can increase hate speech, put heart failure patients at greater risk and affect low-income communities disproportionately, scientists have found.

How Heat Waves Take a Toll on Mental Health

Extreme heat can influence mood and raise the likelihood of a more serious mental health issue. Here's what to know.

2022 Was Worst Year for Heat-Related ER Visits Since 2018

This summer, 725 people visited city emergency rooms — that's almost 13% more than during the same period in 2021, and nearly as many as in 2018.

BY TANAZ MEGHJANI AND SAMANTHA MALDONADO | SEP 28, 2022, 8:27PM EST

NEWS WORLD

Extreme Summer Heat Killed at Least 15,000 Europeans This Year, WHO Estimates

Higher costs for all types of home heat

The cost of heating a home with natural gas this winter is expected to jump about 28%, on average, to \$931, according to an [Energy Information Administration report](#) released last month. The projections are based on the forecast for a slightly colder winter ahead.

Utility bills have gotten a lot more expensive in the last year (along with so much else).

"We're looking at home heating costs of about 18% higher than last year," said Mark Wolfe at the National Energy Assistance Directors Association.

Extreme Heat Saps Billions in Worker Productivity

Annual worker productivity losses from extreme heat amounted to \$44 billion on average across 10 cities and are projected to rise to \$84 billion by 2050

By Daniel Cusick, E&E News on September 22, 2022

The US could stop one cause of heat wave deaths tomorrow

Utility disconnections during a heat wave can be deadly. They're also preventable.

By Rebecca Leber | @rebleber | rebecca.leber@vox.com | Aug 3, 2022, 7:00am EDT



Solutions Within Reach!

1. Letter from physician – shutoff prevention
 - a) But arrearages still accrue!
2. Privately funded fuel assistance (charity)
3. LIHEAP funding
 - a) Effective & underfunded and reaches a fraction of those eligible
4. Weatherization Assistance Program
 - a) Effective & underfunded
5. Housing design & retrofitting

And... Cross sector alignment of solutions for housing, energy, and climate mitigation

Thank you! CHILDREN'S HealthWatch

sedc@bu.edu

www.childrenshealthwatch.org

*“I have shut-off bills all over the place. [...] I got it from the gas company. I got one from the water department. I got one from the [electricity] department, and I don’t have any phone in the house. Trust me: I got a shut-off bill from everybody. So it’s hard because I don’t like to live like that. **I hate being scared. I hate getting up in the morning and hearing that drilling noise [from the utility company]. I’m like, “Oh my God, that’s for me! [...] They’re gonna shut this off.”**”*