

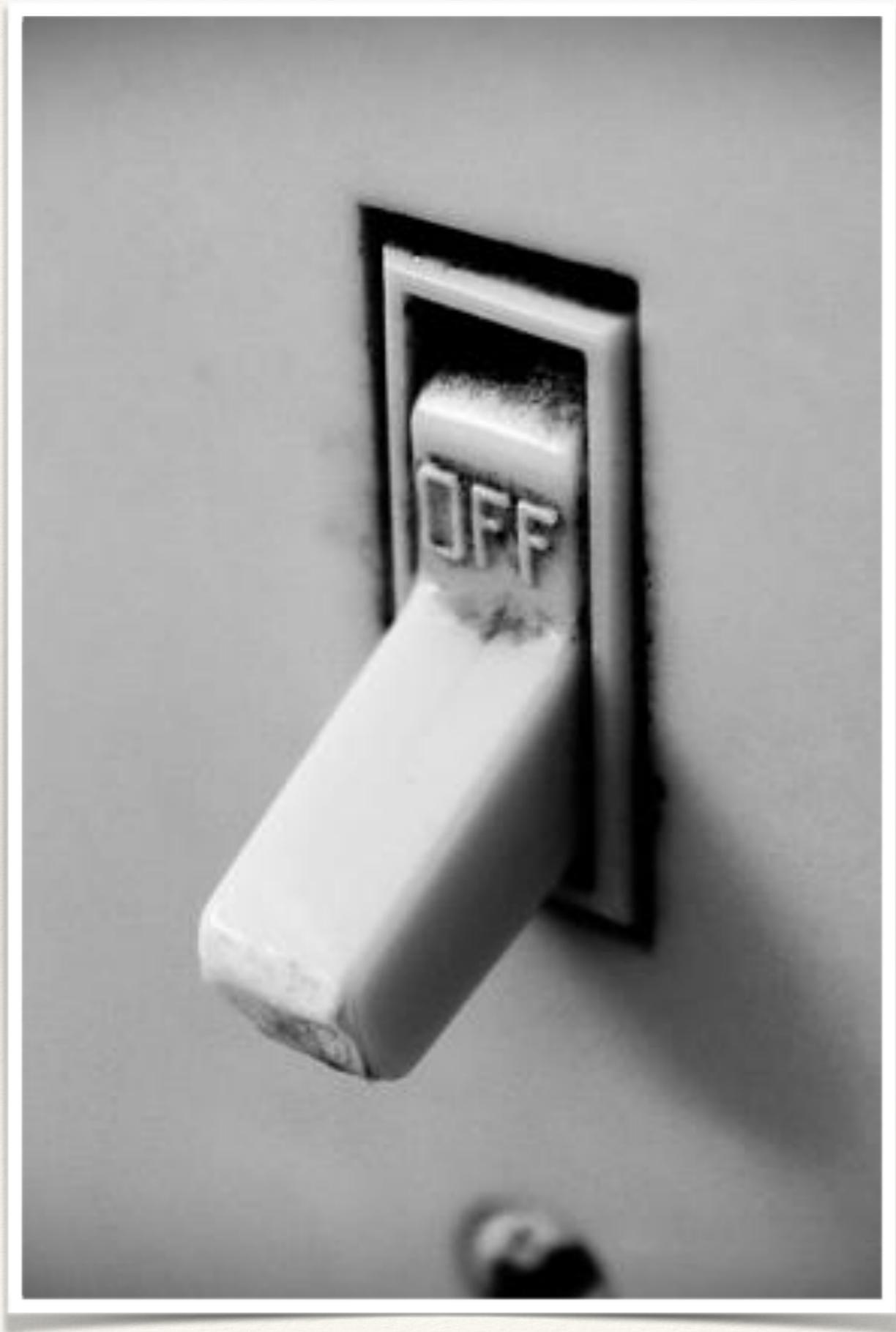
---

# Energy Insecurity among Families with Children

---

**Diana Hernández, PhD**  
Mailman School of Public Health  
Columbia University

LIFE Conference: May 28, 2014



---

# Objectives

---

- ❖ Introduction to the Concept of Energy Insecurity (EI) and examples of three dimensions of EI
- ❖ Data and results from two studies: Dorchester Housing and Neighborhood Study (qualitative) and the National Center for Children in Poverty analysis of American Community Survey, 2011 (quantitative)

# Energy Insecurity

# Energy Insecurity:

## A Local Story with Global Relevance

WHAT DO WE  
CALL THIS  
PHENOMENON  
?



**Fire Caused by**  
By [Name]  
Published [Date]  
A fire that killed three children in an apartment Friday was caused by candles that were apparently being used after power was cut off over delinquent payments, the authorities said.



**For Some T  
Heating Up**  
By JOHN LELAND  
Published: Jan. 7, 2014  
Thousands of New Yorkers complained of a lack of sufficient heat in their apartments, often a longtime condition.

What are the  
health and  
social  
consequences  
of this  
phenomenon?

- ❖ “Energy is essential to meet our basic needs: cooking, boiling water, lighting and heating. It is also a prerequisite for good health- a reality that has been largely ignored by the world community.”  
(World Health Organization, 2006)

## Maslow's Hierarchy of Needs

# Where is Energy?

Image from <http://www.citelighter.com/science/psychology/knowledgecards/maslows-hierarchy-of-needs>

## Maslow's hierarchy of needs

proposed in his 1943 paper "A Theory of Human Motivation" and fully expressed in his book "Motivation and Personality" in 1954.

Abraham Maslow was one of the most important representatives of the **humanistic** and **transpersonal psychology**.



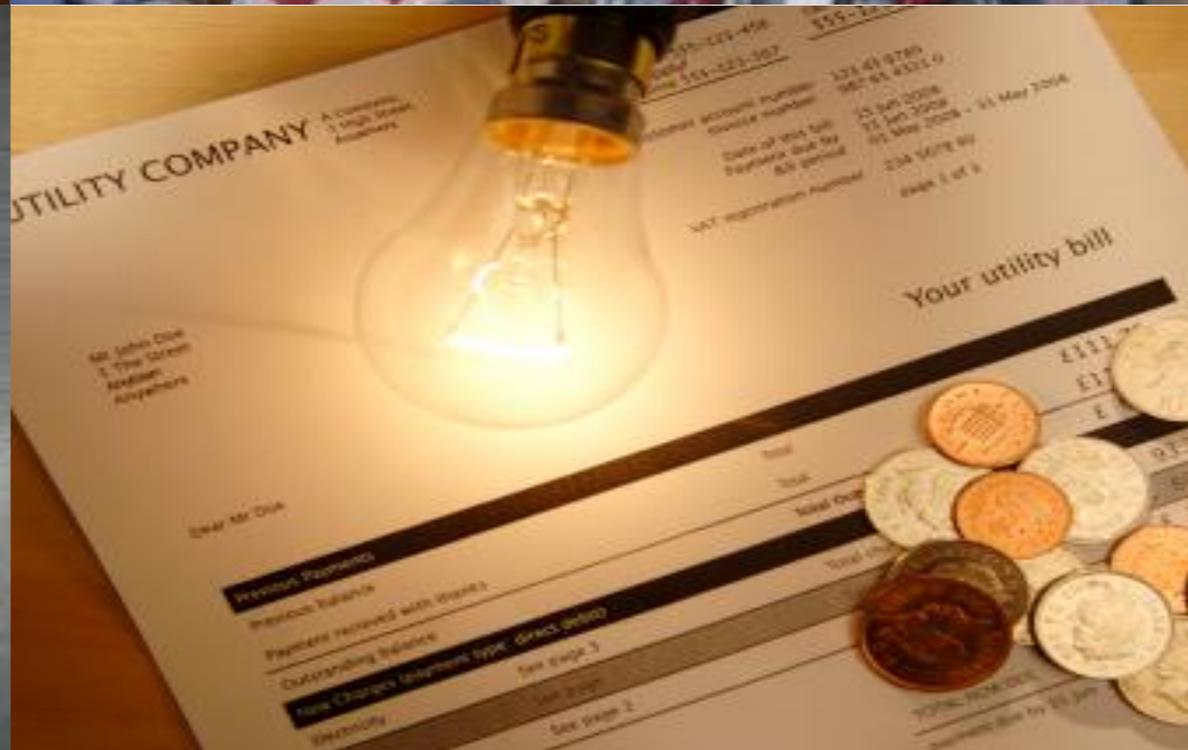
Abraham Maslow  
1908 - 1970



BY M444WU1N31.LV111

source: [http://en.wikipedia.org/wiki/Maslow%27s\\_hierarchy\\_of\\_needs](http://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs)

# Energy Insecurity is a neglected phenomenon that burdens an estimated 16 million US households (Power 2006)



# Promoting a Concept to Raise Awareness

CLICK TO WATCH ENERGY  
INSECURITY VIDEO:  
<http://vimeo.com/68167299>

# Grounded Theory Approach to Exploring Energy Insecurity

---

# Dorchester Housing and Neighborhood Study

---

- ❖ This qualitative study examined the links between housing and health. Energy issues surfaced as important but largely unaddressed in the academic literature. We used a grounded theory approach discovered three dimensions of this phenomenon:
  - ❖ inadequate housing conditions
  - ❖ disproportionate energy expenditure
  - ❖ behavioral responses to energy inefficiencies
- ❖ *These respective conditions are defined as structural EI, economic EI and coping EI.*

---

# Study Sample

---

- ❖ 70 female and 2 male heads of household ranging from 18 to 59 years old recruited from from community health centers in the Boston.
- ❖ Most of the respondents were single mothers of Black or Hispanic descent, U.S. citizens, held a high school education, earned less than \$30,000 per year and many had housing subsidies.

---

# Data Collection

---

- ❖ Pre-screening interviews
- ❖ 90 minute home-based semi-structured interviews
  - ❖ Focus on the housing and neighborhood environments, parental and child health, coping strategies and the utilization of safety net resources.
- ❖ Conducted in English, Spanish, and Vietnamese
- ❖ Home-walkthroughs observations captured with field notes
- ❖ Respondents were compensated \$25 in cash for their time.
- ❖ Interviews digitally recorded and transcribed

---

# Data Analysis

---

- ❖ Systematically coded for emergent themes from interview transcripts and field notes using a grounded theory analytical approach.
- ❖ Two coders reviewed the transcripts and field notes several times in order to become deeply familiar with the data and develop a codebook comprised of over 60 individual codes and 10 main code families.
- ❖ This process was enabled by Microsoft Word, Microsoft Excel, and Atlas.ti.
- ❖ Following an inductive analytic approach, the research team conducted a two phase coding process involving open and axial coding.

# Three Dimensions of Energy Insecurity

---

# Structural EI

---

- ❖ Drafts, leaks, cracks/ holes, inefficient heating or electrical systems

## EXEMPLARY QUOTES

**Sharon, a market rate payer and married mother of four described her battle with a “busted boiler:”**

*My boiler downstairs was busted. Nothing but steam. My heat is heating up the basement but no heat’s coming up in my house. My bill is 4,500 somethin’ dollars and my heat just keeps escaping.*

*Pointing to one of the children’s rooms, she said,  
If I open this door you feel like you’re standing outside. There’s no heat in here and there’s no heat in the kitchen. He [the landlord] says it’s a four bedroom but really it’s a big, huge, empty house.*

**Aleesha, also a subsidized housing resident, griped about the poor lighting in her apartment:**

*It looks a little brighter now ‘cause its light outside, but when it gets dark, it’s really dark in here. So I have to put all these lights on just to make it look brighter, so you can actually see what you’re doing.*

**Marsha, a married mother of two described how her heating bills skyrocketed in her old apartment (from which she was ultimately evicted) as a result of the oil to gas conversion:**

*My oil bill was great. I wish my oil bill was the only one ever had to pay. Then they moved to gas. Gas, oh my god, gas is outrageous. We ended up paying, I think it was \$600 [monthly] over a two month period.*

---

# Economic EI

---

❖ Financial hardship associated with energy expenditures relative to income and other expenses

## EXEMPLARY QUOTES

**Roxanne, a great-grandmother whose two-bedroom apartment housed six family members spanning four generations, reasoned, “The only difficulty we have is the lights. Other than that, we make it.” She then passed me her most recent bill noting her partial payment approach:**

*Researcher: So you just passed me an NSTAR bill of \$1,971.52 and this is for your electricity?*

*R: Yes, It’s just been high, high, high. But I pay them every month. I give them like, 50, 60, 80-something, whatever I can give them.*

**Merle (from the opening quote) made the following observation:**

*The disadvantage of having a Section 8 voucher is that these landlords tend to take advantage. In a lot of Section 8 apartments they only provide heat and hot water. It’s always no utilities. It’s not the best apartments. I’m quite sure it’s not the best heating systems ‘cause like I said, I’ve lived there. I’m a prime example.*

**The electrical services were in Elaine’s eldest daughter’s name despite her being underage. This was a common strategy for families with arrearages and needing to establish service in another housing unit. Shut-off threats and the disruption of service was the other alternative for those severely behind on their bills. Deborah, a mother of three and part-time service sector employee earned \$131 a week and received no other assistance declared:**

*At this point, they might shut off my lights in the next two weeks if I don’t pay the bill, and honestly I don’t have money to pay the [entire] bill. I said, well give me a chance to try to pay \$100 here or \$90 there. At least something just so you won’t turn my lights off.*

---

# Coping EI

---

- ❖ Behavioral strategies and improvisational approaches used to counteract the impacts of economic and structural energy insecurity

## EXEMPLARY QUOTES

**Sophie, a custodial grandmother living in subsidized housing would improvise “if something happens to the heat by chance.” She explained:**

*I turn the oven on to put a little heat in here and then I cut it off.*

**Silvia, a mother of three and market rate payer, insulated her apartment and learned about energy conservation from a local organization that offered weatherization services:**

*I pretty much did it myself—the insulation. I put the stuff under the doors plastic over the windows during the winter, Some people also came in here and showed me how to save electric.*

**Veronica, a mother of four and mobile voucher recipient was able to leverage her son’s medical vulnerability with the help of her pediatrician to protect against a disruption of service:**

*The light bill was like \$2,000 somethin’ and I need to get a letter stating that I had a child who was under a year old and that he had a little mild asthma or whatever, because that way they can’t shut off your lights for no reason at all.*

**Katherine, a mother of two and market rate payer conserved electricity by using lights sparingly:**

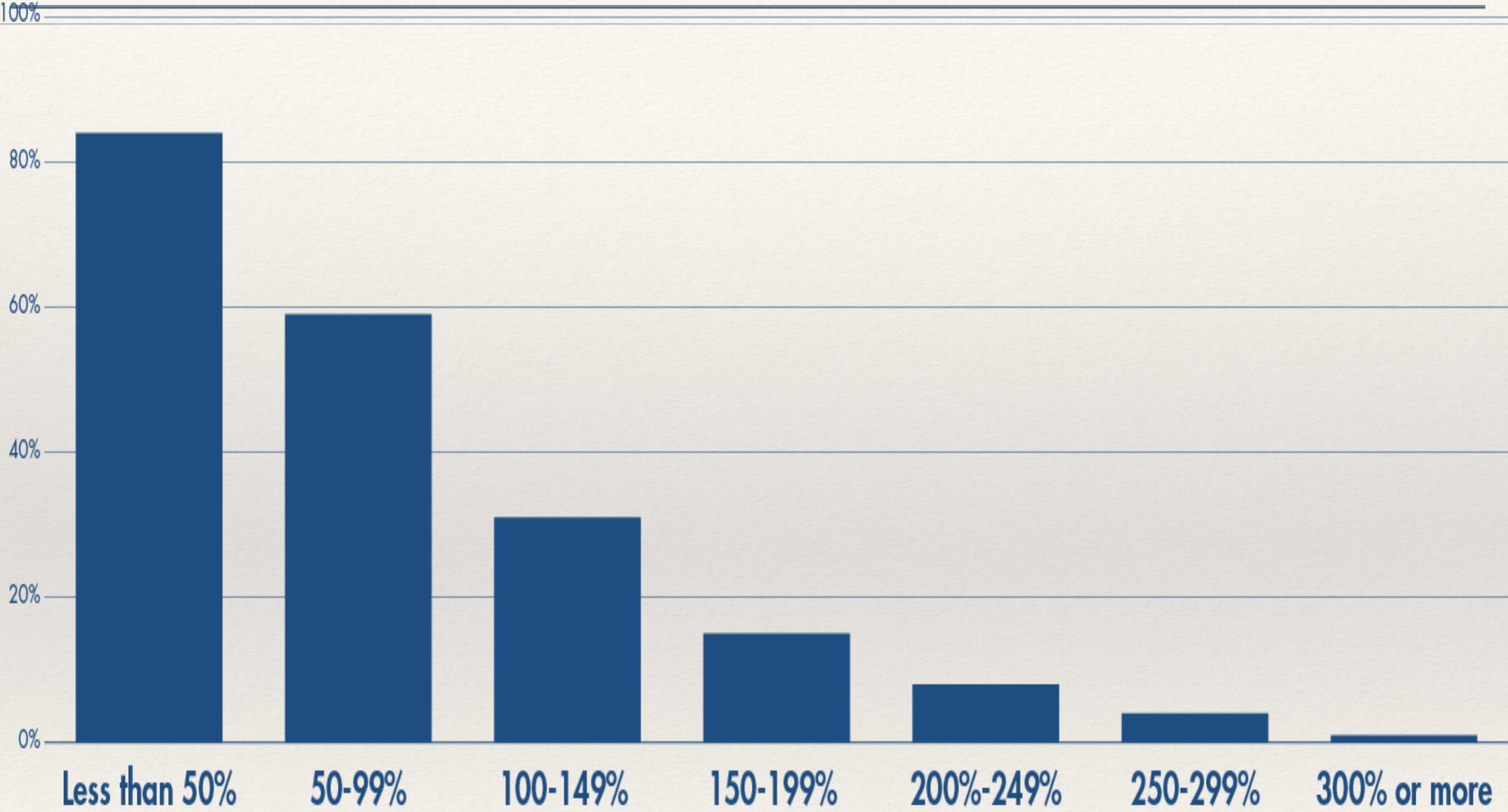
*Until it starts getting dark, then it’s like we turn on lights. If we’re not in [or leave] one room we turn off the lights.*

# A Deeper Look into Economic Energy Insecurity

- ❖ Hernández, D., Aratani, Y. and Jiang, Y. (2014). Energy Insecurity among Families with Children. New York: National Center for Children in Poverty, Columbia University Mailman School of Public Health.

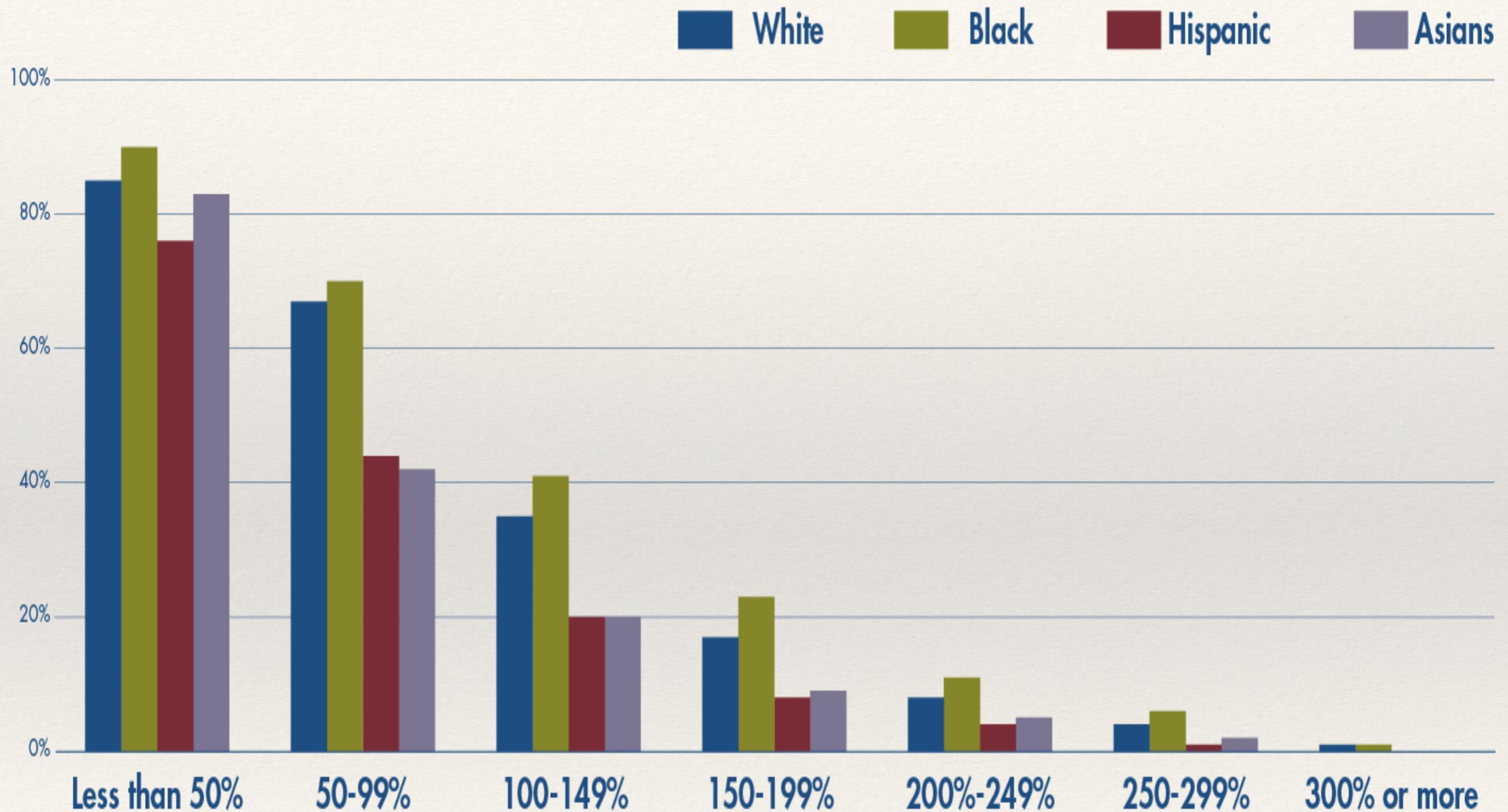


# Percentage of economic energy insecurity by poverty level



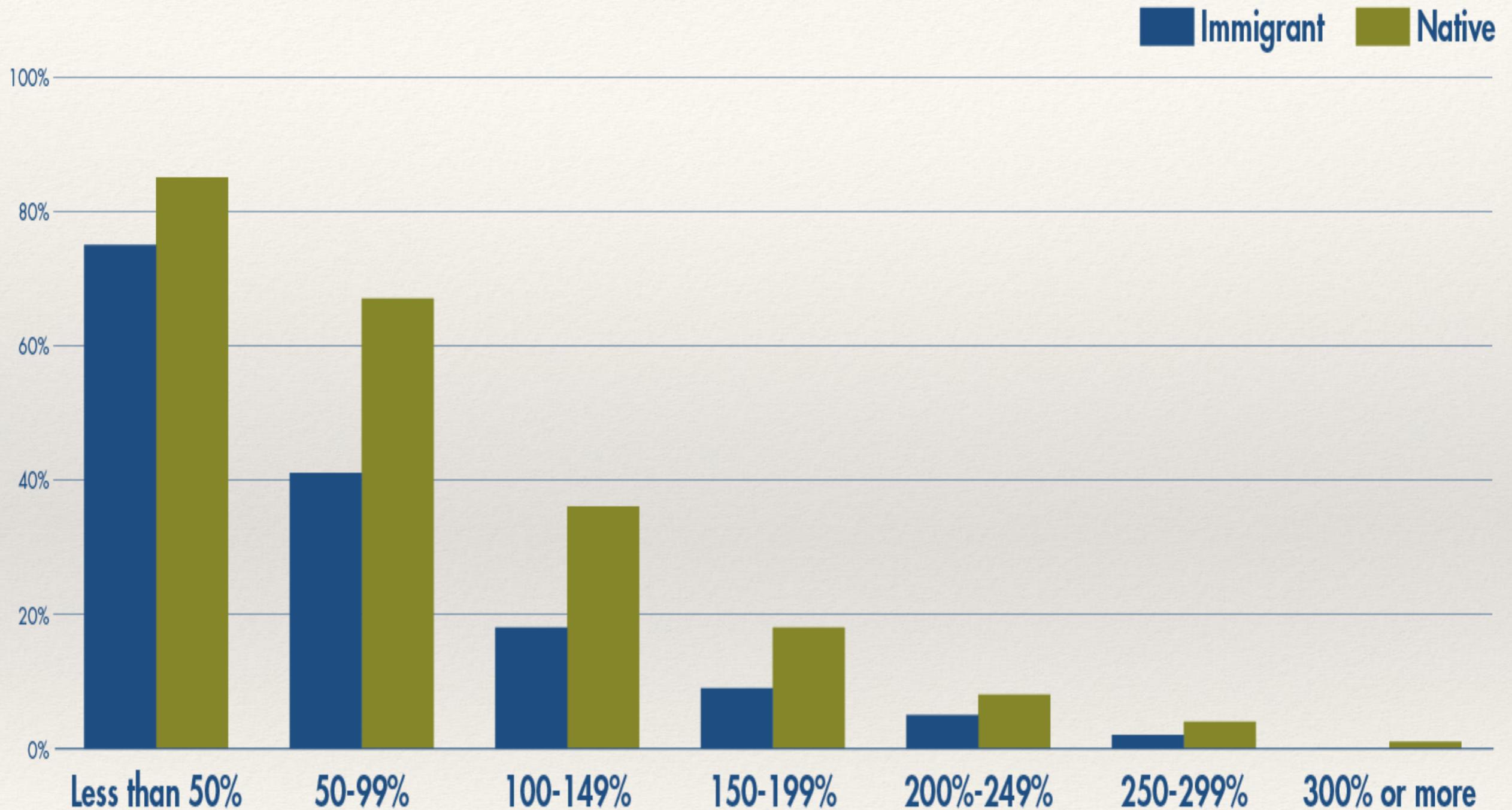
Data source: NCCP analysis of American Community Survey, 2011

# Percentage of economic energy insecurity by poverty level and race/ethnicity



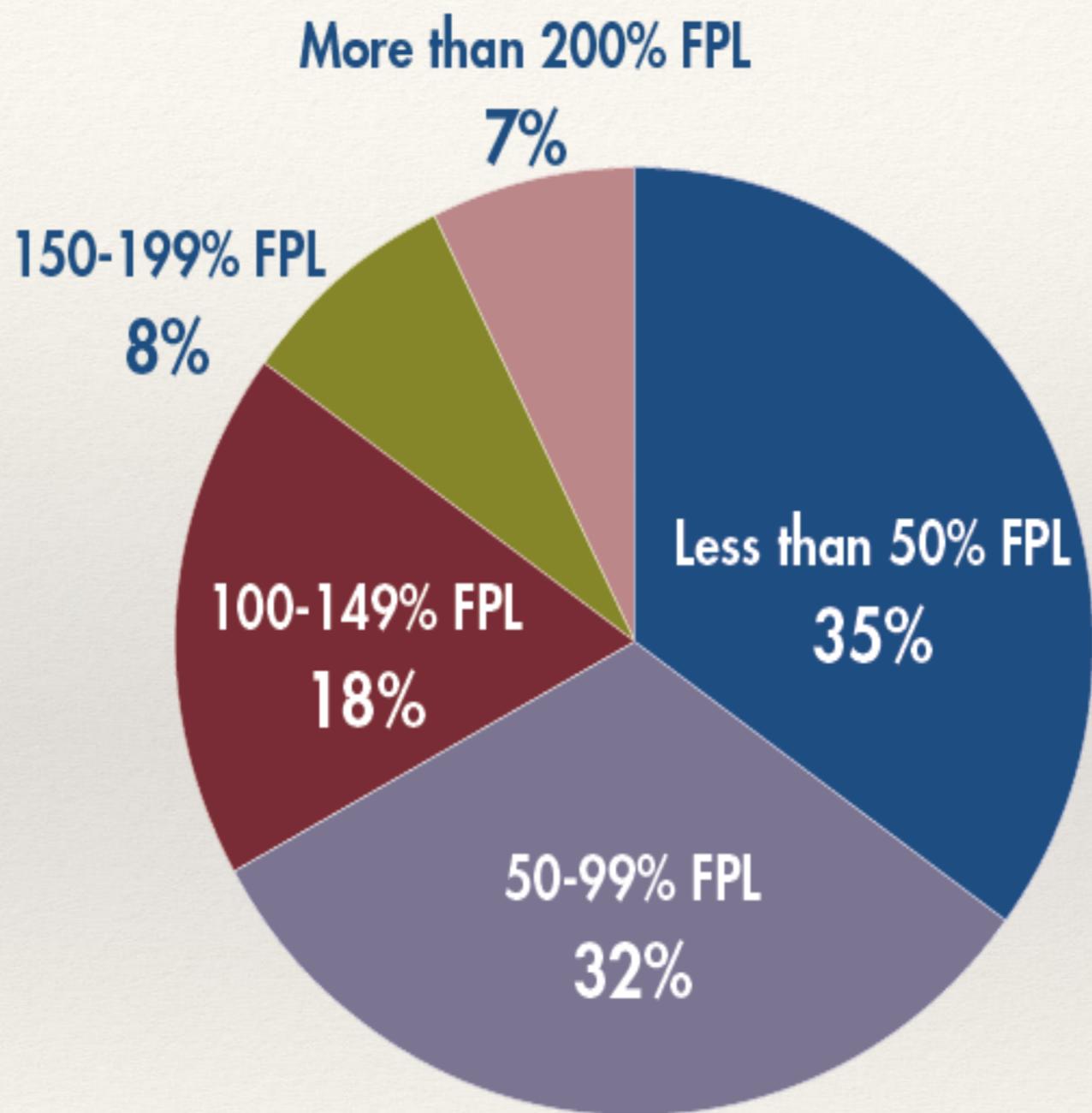
Data source: NCCP analysis of American Community Survey, 2011

# Percentage of economic energy insecurity by poverty level and immigration status



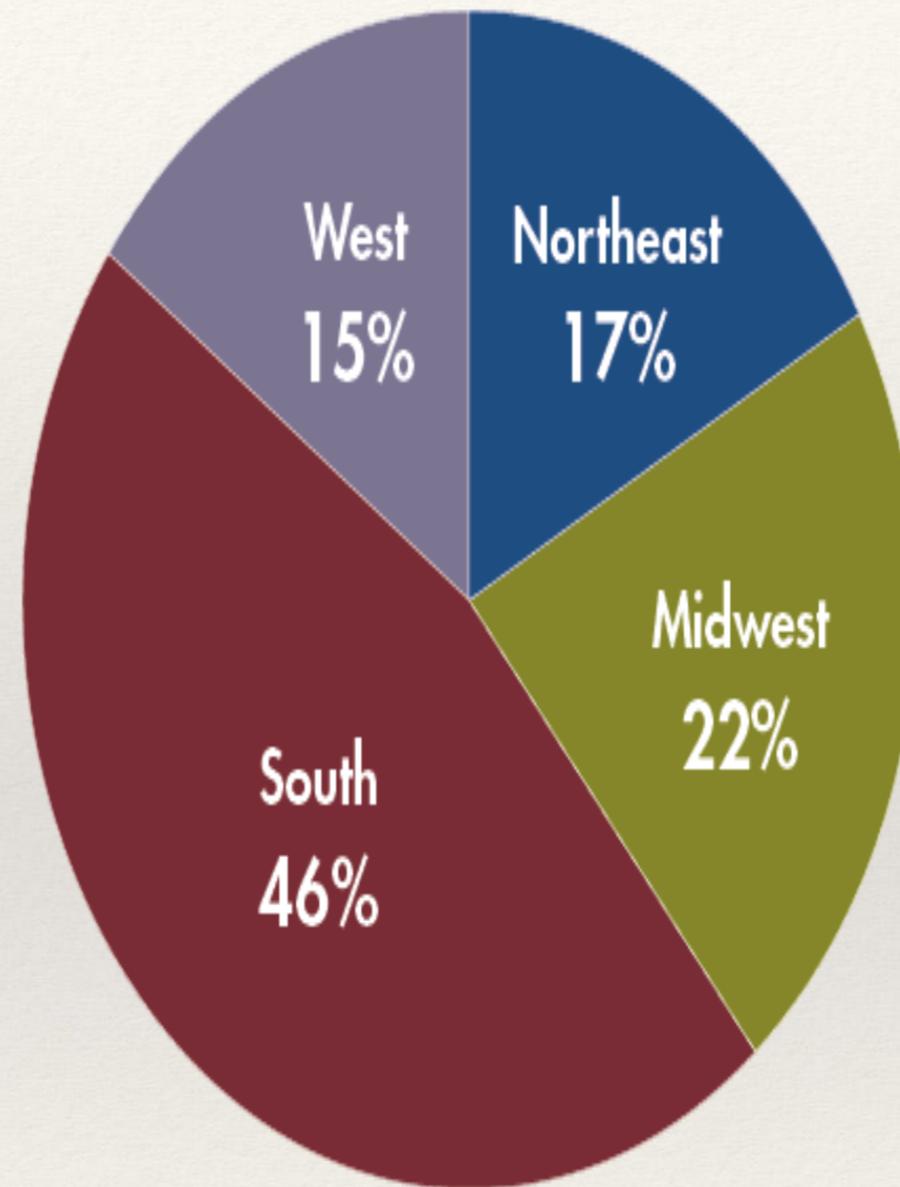
Data source: NCCP analysis of American Community Survey, 2011

# Poverty level among families with economic energy insecurity



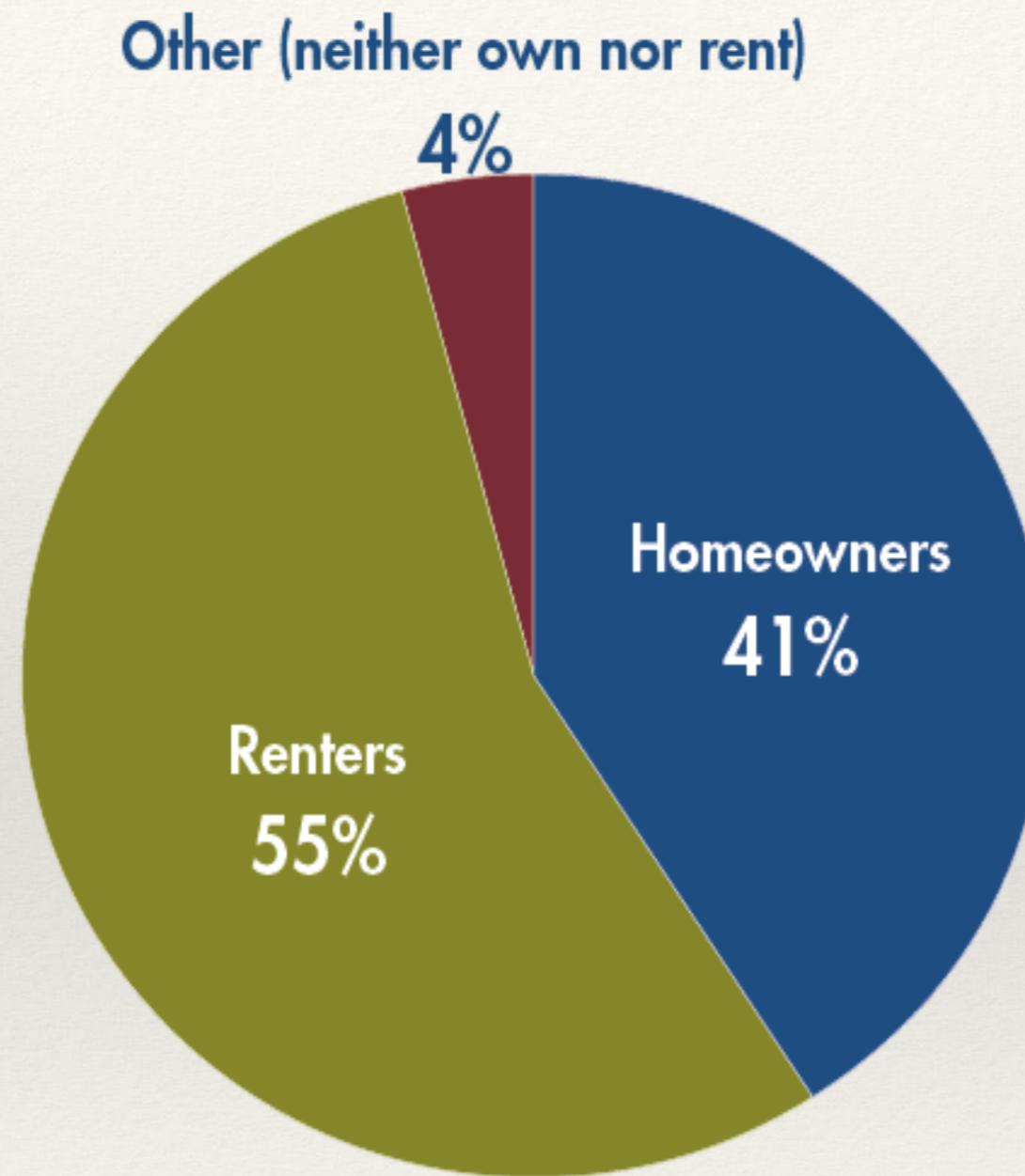
Data source: NCCP analysis of American Community Survey, 2011

# Geographic regions where families with economic energy insecurity reside



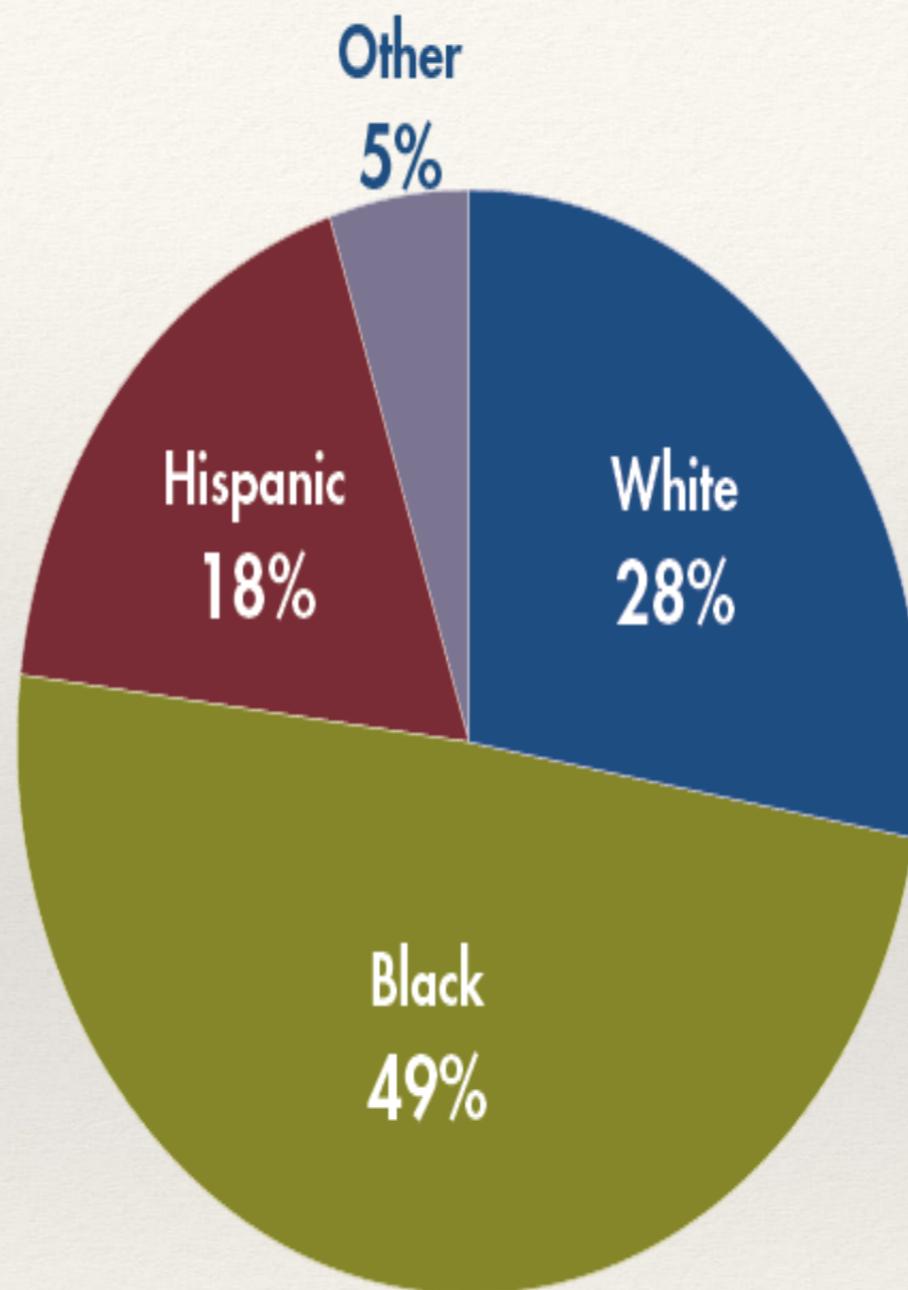
Data source: NCCP analysis of American Community Survey, 2011

# Housing tenure of families with economic energy insecurity



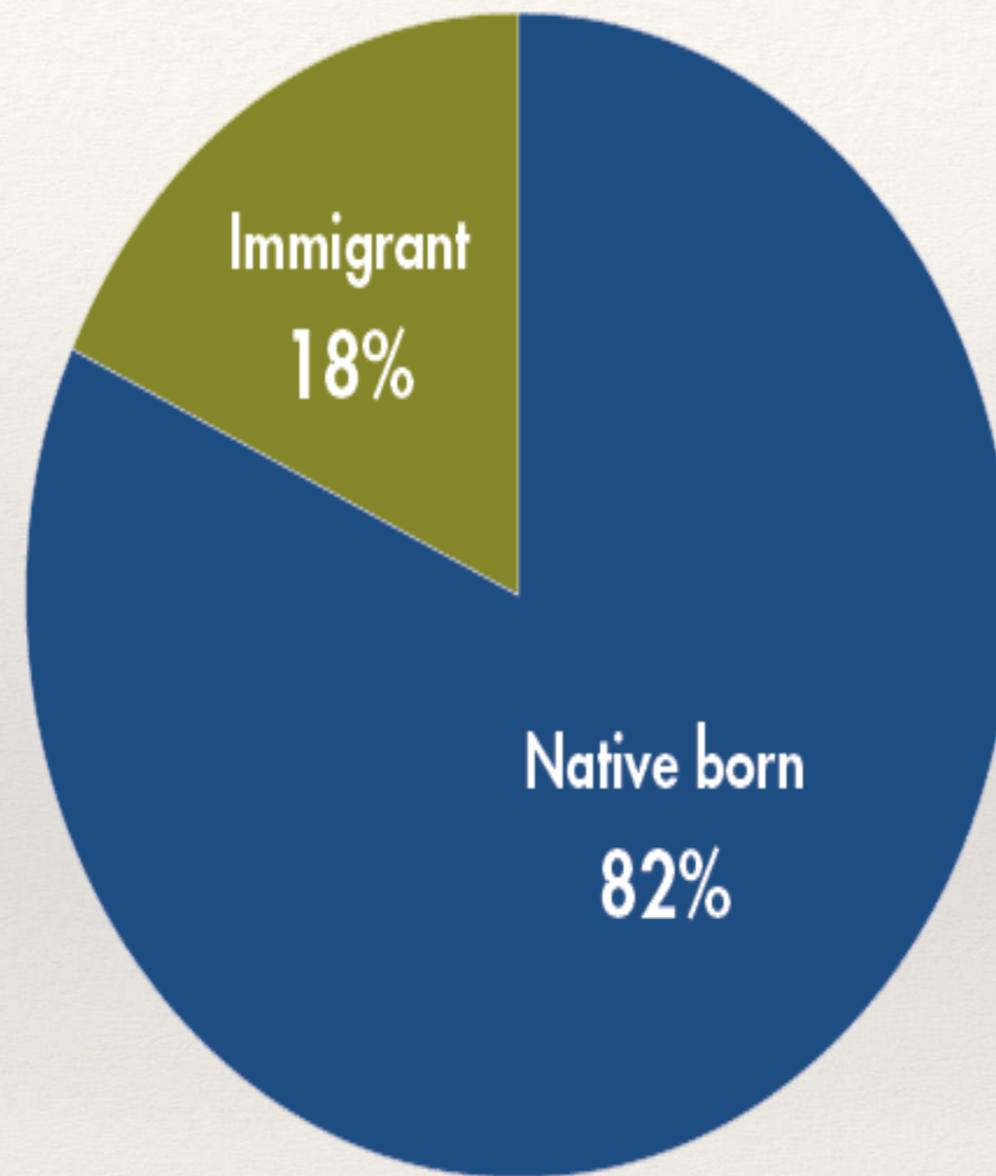
Data source: NCCP analysis of American Community Survey, 2011

# Race/ethnic composition of families facing economic energy insecurity



Data source: NCCP analysis of American Community Survey, 2011

# Immigration status of families facing economic energy insecurity



Data source: NCCP analysis of American Community Survey, 2011

---

# EI Policy Brief Main Points

---

- ❖ More than half of families affected by economic EI are living in poverty (under 100% of the FPL) and about one-third are extremely poor.
- ❖ Geographically, the largest proportion (46 percent) of children in households with economic EI reside in the South.
- ❖ Over half of families with economic EI are renters; 41 percent are homeowners.
- ❖ Approximately half of all households facing economic EI are Black, and about one-third are White.
- ❖ The share of immigrant families is relatively low among families with economic EI.

# Energy Insecurity and Policy



---

# Policy Implications

---

*“A lot of money should go into these agencies for people like myself who have a high gas bill, or people who, you know, have high electrical bills.”* Merle, Section 8 recipient, single mother of 3 who has experienced chronic EI

- ❖ Expanding LIHEAP and WAP benefits
- ❖ Implementation of Energy Efficiency Standards in subsidized housing
- ❖ Comprehensive energy, housing and health policies for low-income households

---

# Low Income Home Energy Assistance Program (LIHEAP)

---

- ❖ Federally-mandated block grant program that provides assistance to households burdened by disproportionate energy expenditures at 150 percent of the federal poverty level or 60 percent of the state median income level. Funds are dispersed to utility companies.
- ❖ **LIHEAP currently covers only a fraction of the overall need;** of the estimated 10-15 million homes eligible for benefits, a mere 5.5 million were served and many others never apply for benefits despite eligibility due to lack of awareness of the program.
- ❖ **LIHEAP has endured continuous budget cuts** despite the recognized need to modernize our nation's energy policy and reduce energy consumption.
- ❖ **LIHEAP emphasizes bills payments rather than weatherization**

# Policy Recommendations

## ❖ ~~Coordinated, Comprehensive Low-Income Energy, Health and Housing Policy~~ (Hernández and Bird 2010)

- ❖ energy conservation
- ❖ energy literacy
- ❖ utility rate affordability and relief



## ∞ Seasonal Moratorium across States (LIHEAP Clearinghouse)

NY State Policy “Between Nov 1-April 15, all customers must be notified 72 hours before disconnection to ascertain if the health and safety of a resident will be compromised. Utility cannot disconnect if a customer will suffer a serious health or safety impairment.”

## ❖ Low-Income Housing Units as Model sites for Healthy and Sustainable living

- ❖ Innovative partnerships between HUD, DOE & HHS and state/ local equivalents

---

# Acknowledgments

---

- ❖ Collaborators
  - ❖ Steve Chillrud (LDEO), Matt Perzanowski (EHS), Xinhua Liu (Bios), Yumiko Aratani (HPM/ NCCP), Yang Jiang (NCCP), Milka Rodriguez (WE ACT), Francis Rodriguez (AEA), Robert Gardella (AEA), Beatriz Lora (AEA)
- ∞ Study Team
  - ❖ Douglas Phillips (study coordinator and MSPH- Pop Fam Alum '13)
  - ❖ Brennan Rhodes-Bratton (SMS doctoral student)
  - ❖ Jennifer Coico (EHS MPH student and project intern)
  - ❖ Melanie Valencia (EHS MPH student and project intern)
  - ❖ Ericka Meza (EHS MPH student and project intern)
  - ❖ Dennis Dacarett-Galeano (undergraduate intern, Columbia)
  - ❖ Jennifer Feliz (undergraduate intern, NYU)
  - ❖ Janet Vidal (undergraduate intern, Skidmore & SPHSP 2013)
  - ❖ Marissa Robinson (undergraduate intern, Spellman & SPHSP 2013)
- ❖ Other Special Contributors
  - ❖ Karolynn Siegel, Lisa Metsch, Regina Santella, Tomás Guilarte, Dave Evans, Peggy Shepard, Daniel Carrion, Cecil-Corbin-Mark, David Hepinstall, Ogonnaya Newman-Dotson, Rachel Miller
- ❖ Funding
  - ❖ Provost Office, Grant for Junior Faculty who Contribute to Diversity, 2012
  - ❖ NIEHS Center for Environmental Health in Northern Manhattan, Pilot Grant 2013 (ES009089); NIEHS R21; NIEHS R01 (PI: Miller)

---

# References

---

- ❖ Hernandez, Diana, Aratani, Yumiko and Jiang, Yang. 2014. “Energy Insecurity Among Families with Children” National Center for Children in Poverty, Policy Brief
- ❖ Hernandez, Diana. “Energy Insecurity: A Framework for Understanding Energy, the Built Environment and Health among Vulnerable Populations in the Context of Climate Change.” American Journal of Public Health. 2013. 104:3
- ❖ Bird, Stephen and Hernández, Diana. "Policy Options for the Split Incentive: Increasing Energy Efficiency for Low-Income Renters" Energy Policy. 2012. 48:506-514
- ❖ Hernández, Diana and Bird, Stephen. “Energy Burden and the Need for Integrated Low-Income Housing and Energy Policy,” Poverty & Public Policy: 2:4, December 2010
- ❖ Hernández, Diana. 2014. "Affording Housing at the Expense of Health: Assessing the Impact of Housing Resolution Strategies on the Health of Poor Families” Journal of Family Issues

---

# Thank You!

questions/comments welcomed

---

**Diana Hernández, PhD**

Assistant Professor  
Department of Sociomedical Sciences  
Mailman School of Public Health  
Columbia University

Email: [dh2494@columbia.edu](mailto:dh2494@columbia.edu)