



# Toxic Risk: Using PUMS Data to Estimate Risk for Toxic Stress

Not Anthony Galvan, but Timothy Bray



The Institute for  
Urban Policy Research  
at The University of Texas at Dallas

# Stress in Childhood



## Positive Stress

- “a normal and essential part of healthy development”

## Tolerable Stress

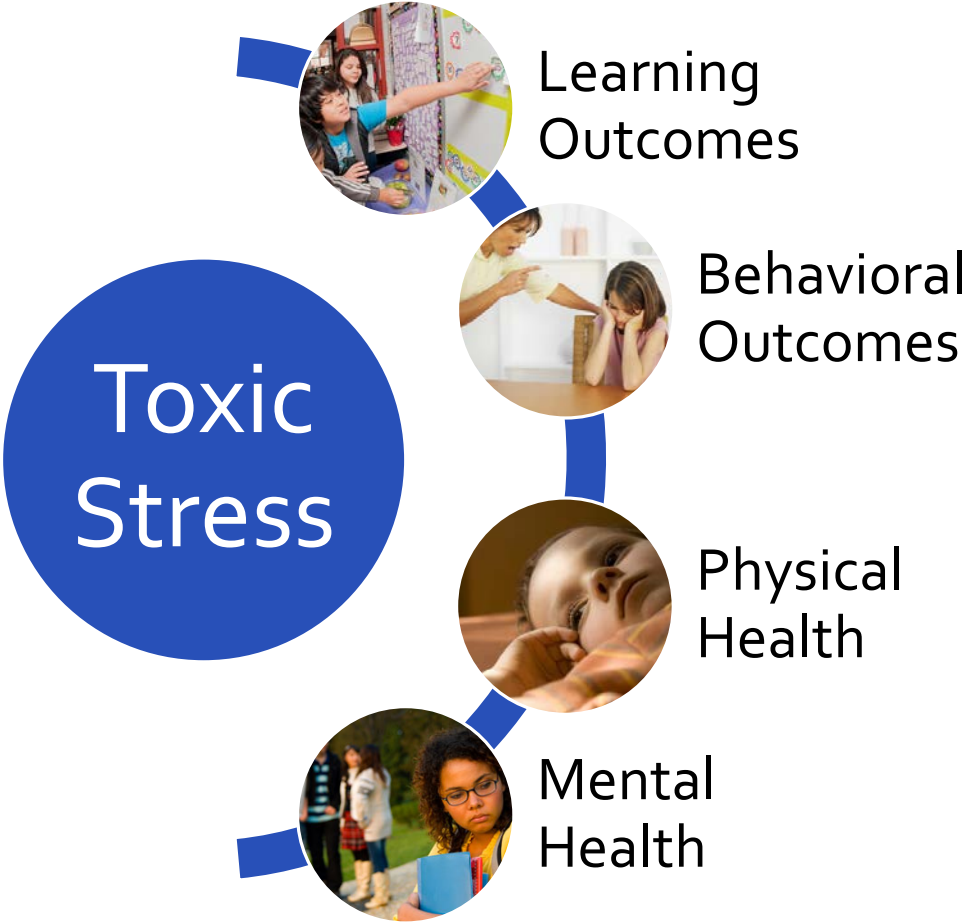
- “a result of more severe, longer-lasting difficulties, such as the loss of a loved one”

## Toxic Stress

- “strong, frequent, and prolonged adversity, such as physical or emotional abuse. . . or the burdens of family economic hardship”



# Toxic Stress Impacts Childhood Wellbeing



A Whole Slide Just To Say the Name. . .

**American Community Survey**

**Public Use Micro Sample**

**(PUMS) Data**



# About the ACS – Two Files



Samples, Weights, and Replicates! Oh My!

1%-5%



# The PUMA Geography

- Each PUMA contains approximately 10,000 people
- Typically follows major physical and political boundaries
- Can be “reassembled” to form larger geo-political entities



# Some Toxic Stress Risk Factors in the Census

Housing  
Distressed

Parental  
Unemployment

Deep Poverty

No  
Transportation





# Some More Toxic Stress Risk Factors in the Census

Housing  
Distressed

Parental  
Unemployment

Single Parent  
Household

Overcrowded  
Household

Deep Poverty

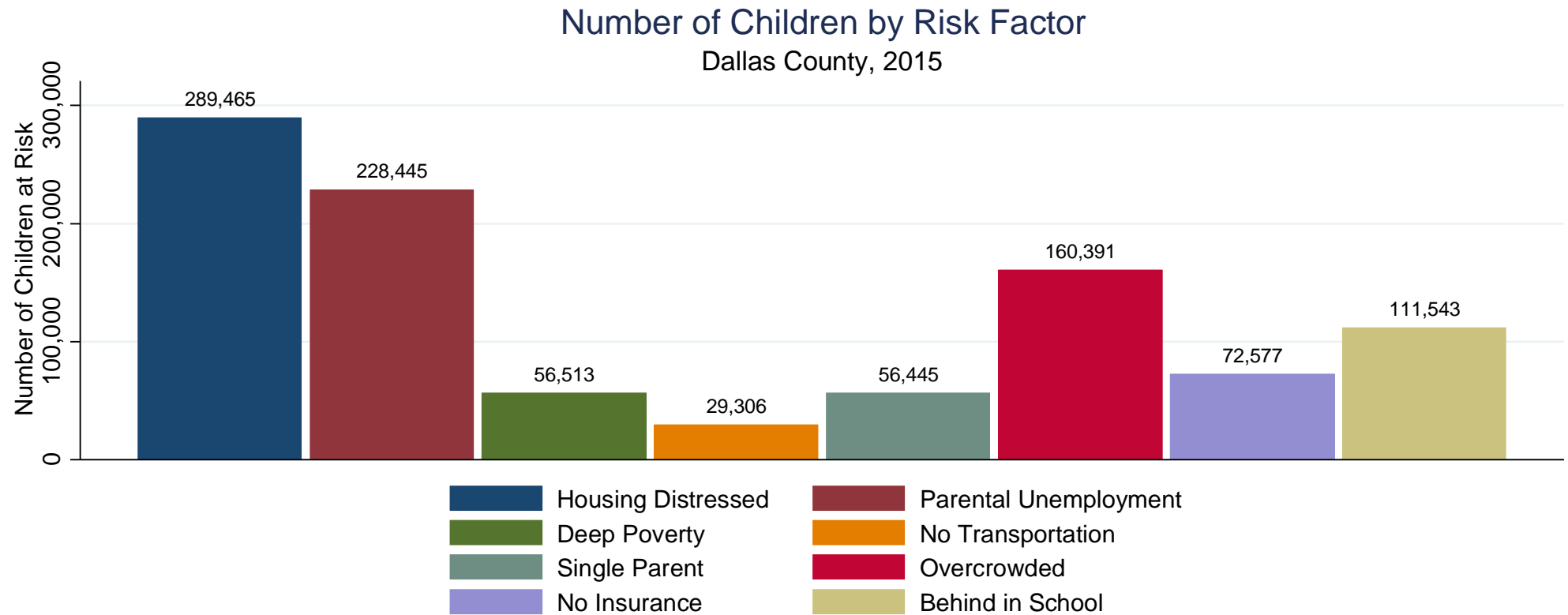
No  
Transportation

No Insurance

Behind in  
School



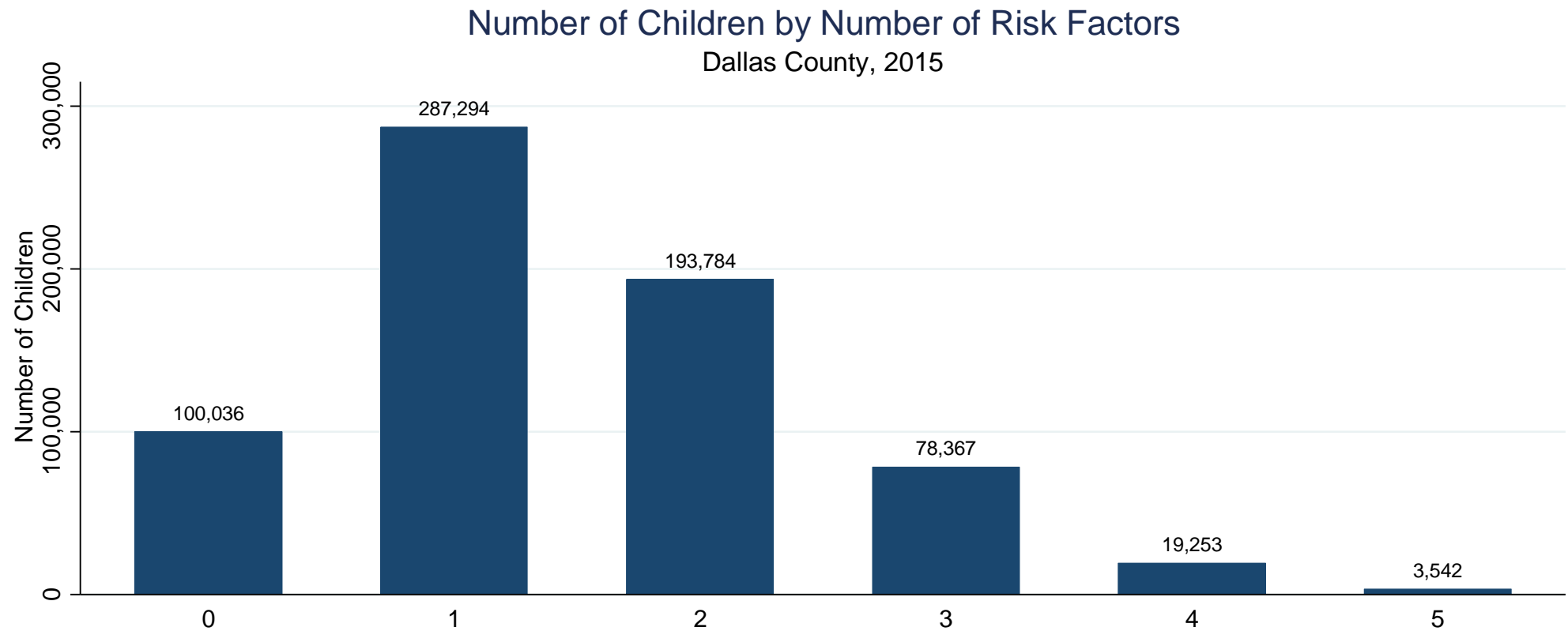
# Prevalence by Risk Factor



Source: IUPR Analysis of 2015 American Community Survey Public Use Microsample Data



# Prevalence by Number of Risk Factors



Source: IUPR Analysis of 2015 American Community Survey Public Use Microsample Data



# Survey Generated Estimates

Risk Factor	Number of Children at Risk	95% Margin of Error
Housing Distressed	271,328	(±16,265)
Parental Unemployment	225,354	(±15,356)
Deep Poverty	52,072	(±9,067)
No Transportation	27,697	(±5,939)
Single Parent Household	51,190	(±7,318)
Overcrowded Housing	147,932	(±13,838)
No Insurance	68,767	(±8,902)
Behind Grade Level	111,242	(±9,887)
One or More Risk Factors	555,602	(±20,715)



# Survey Generated Relative Risk Estimates

Indicator	Percent of Children at Risk	95% Margin of Error
Housing Distressed	42%	(±2.2%)
Parental Unemployment	35%	(±2.1%)
Deep Poverty	8%	(±1.3%)
No Transportation	4%	(±0.9%)
Single Parent Household	8%	(±1.1%)
Overcrowded Housing	23%	(±1.9%)
No Insurance	11%	(±1.4%)
Behind Grade Level	17%	(±1.5%)
One or More Risk Factors	85%	(±1.5%)



# Conclusion



## For More Information

Dr. Timothy M. Bray  
Anthony Galvan

Institute for Urban Policy Research  
The University of Texas at Dallas

800 West Campbell Road, WT20  
Richardson, Texas 75080

V: 972-883-5430

F: 972-883-5431

[timothy.bray@utdallas.edu](mailto:timothy.bray@utdallas.edu)  
[anthony.Galvan@utdallas.edu](mailto:anthony.Galvan@utdallas.edu)  
<http://iupr.utdallas.edu>



@timothy\_bray



SlideShare [www.slideshare.net/TimothyBray](http://www.slideshare.net/TimothyBray)

