Correlation of Adverse Childhood Experiences with Children in Poverty and Concentrated Disadvantage at the State Level

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Background

Adverse childhood experiences (ACEs) are stressful or traumatic events that can have a lasting impact on health and well-being into adulthood. Children who experience multiple ACEs are at increased risk of negative health outcomes.

We examined the prevalence of multiple levels of ACEs across states and the correlation with the percentage of children in poverty and concentrated disadvantage, two measures that can negatively impact physical and mental health throughout the life course.

Methodology

- ACEs (0-17 years): 2017 National Survey of Children's Health at 2 or more (2+) and 3 or more (3+) of 9 experiences (Table 1)
- Children in poverty (<18 years): 2017 American
 Community Survey (ACS) 1-year estimates file
- Concentrated disadvantage (households): 2017
 ACS 5-year estimates file based upon the Life
 Course Indicators Tip Sheet (LC-06) published by
 the Association of Maternal & Child Health
 Programs (Table 2)
- Spearman rank-order correlation coefficients (rs) were calculated based on state rankings

Table 1. Nine adverse childhood experiences (ACEs)

Hard to get by on family's income-cannot afford basics
Parent or guardian divorced or separated

Parent or guardian died

Parent or guardian served time in jail

Witnessed domestic violence

Victim or witness of neighborhood violence

Lived with anyone who was mentally ill, suicidal, or severely depressed

Lived with anyone who had a problem with alcohol or drugs

Treated or judged unfairly because of his/her race or ethnic group

Table 2. Five components of concentrated disadvantage

Percent of individuals below the poverty line
Percent of individuals receiving public assistance
Percent of female-headed households with children (less than age 18)
Percent unemployed (age 16 and older)
Percent less than age 18

Results

Children in poverty

- 18.4% of children lived below the poverty threshold (Table 3)
- Ranges from 10.3% in New Hampshire to 28.0% in Louisiana

ACEs

- 19.3% of children had 2+ and 10.0% had 3+ (Table 3)
- New Jersey had the lowest prevalence and
 Oklahoma had the highest prevalence at both 2+ and
 3+ ACEs levels

Concentrated disadvantage

- 27.0% of households were located in areas of concentrated disadvantage (Table 3)
- Ranges from 2.5% in Vermont to 45.5% in Mississippi

Children in poverty was moderately positively correlated with 2+ and 3+ ACEs at the state level (Table 4). A few states were outliers to this trend:

- Montana and Alaska have a lower percentage of children in poverty (14.7% and 14.9%, respectively), yet a higher prevalence of ACEs at each level
- Texas has a higher percentage of children in poverty (20.9%), yet a lower prevalence of ACEs at each level
- South Carolina is in the bottom 10 for children in poverty (22.6%), yet is in the top 10 for 2+ ACEs (16.7%)

Concentrated disadvantage had negligible correlation with ACEs at any level (Table 4), however, was highly positively correlated with children in poverty (rs=0.79).

Table 3. Children in poverty, multiple adverse childhood experiences (ACEs), and					
concentrated disadvantage shaded by quintile					

Utah 10.7 18.8 7.6 16.7 16.8 17.6 16.7 17.5 1		Children in Poverty (%)	ACEs 2+ (%)	ACEs 3+ (%)	Concentrated Disadvantage (%)
North Dakota Hawaii 11.5 15.0 6.6 14.8 Minnesota 11.8 17.6 11.8 17.6 11.8 10.3 Colorado 12.0 Maryland 12.0 15.9 7.7 17.6 Maryland 12.0 15.9 7.7 17.6 Maine 13.1 20.4 10.5 Maine 13.1 20.4 10.5 Massachusetts Wyoming 14.8 24.2 11.9 3.9 Massachusetts Wyoming 14.8 22.2 13.0 13.0 3.8 20.2 Wirginia 14.0 20.5 14.8 Mashington 14.1 18.0 12.0 10.7 Wisconsin 14.5 23.0 12.2 11.5 Montana 14.7 25.8 15.6 7.3 Montana 14.7 25.8 15.6 7.3 Alaska 14.0 24.4 13.7 11.7 12.4 daho 15.8 Mohode Island 16.5 16.5 24.1 11.2 25.4 Coregon 16.5 24.1 11.2 25.4 Colifornia 18.1 18.0 18.2 18.1 18.2 18.3 18.4 18.4 18.5 18.5 Missouri 18.6 24.7 14.9 18.2 Michigan 19.7 25.8 15.6 37.3 Arizona 20.8 24.0 11.8 35.1 Texas Conditiona 21.2 23.7 12.4 26.6 Coluisiana 24.6 24.9 11.7 25.5 26.1 Mississippi New York 27.2 24.4 14.3 25.5 Colulationa 26.6 27.2 24.2 24.7 13.5 28.1 Arkansas 24.6 24.7 13.5 28.1 28.1 Arkansas 24.6 24.7 13.5 28.1 Arkansas 2	New Hampshire	10.3	17.3	6.7	3.9
Hawaii 11.5 15.0 6.6 14.5 Minnesota 11.8 17.6 11.8 10.3 Colorado 12.0 17.9 10.2 13.1 10.5 Colorado 12.0 17.9 10.2 13.1 10.5 Connecticut 12.6 17.3 9.5 19.9 Maine 13.1 20.4 10.5 6.2 Myoming 13.1 20.4 10.5 6.2 11.9 3.9 Massachusetts Vermont 10.4 23.0 11.1 2.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10	Utah	10.7	18.3	7.6	16.7
Minnesota	North Dakota	10.9	19.5	11.0	9.7
Colorado	Hawaii	11.5	15.0	6.6	14.5
Maryland owa 12.3 17.4 9.3 10.5 Connecticut 12.6 17.8 9.4 10.5 6.2 Myoming 13.1 20.4 10.5 6.2 Myoming 13.2 24.2 11.9 3.9 Massachusetts 16.8 15.4 7.0 17.9 Mermont 16.8 15.4 7.0 17.9 Mermont 16.8 15.4 7.0 17.9 Mermont 17.0 17.0 17.9 Mermont 17.0 17.0 17.9 Mermont 17.0 17.0 17.0 17.9 Mermont 17.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0	Minnesota	11.8	17.6	11.8	10.3
12.3 17.2 9 6 10.5 10.5 10.5 12.6 17.5 8 6 19.9 10.5 17.5 8 6 19.9 10.5 17.5 8 6 19.9 10.5 17.5 8 6 19.9 10.5 17.5 18.6 19.9 10.5 17.9 17.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 24.2 11.9 3.9 18.8 20.2 11.1 2.5 18.8 20.2 11.1 2.5 18.8 20.2 11.1 2.5 18.8 20.2 11.1 2.5 18.8 20.2 11.1 2.0 10.7 18.8 18.9 12.0 10.7 18.8 18.8 18.9 12.0 10.7 18.8 18.8 18.9 18.8 18.9 18.8 18.9 18.8 18.9 18.8 18.9 18.8 18.9 18.8 18.9 18.8 18.8	Colorado	12.0	17.9	10.2	13.1
Connecticut Maine 13.1 20.4 10.5 6.2 Mynyming Myssachusetts Mynyming Massachusetts Mynyming Mynymin	Maryland	12.0	15.9	7.7	17.6
Maine 13.1 20.4 10.5 6.2 Myoming 13.3 24.2 11.9 3.9 Massachusetts Vermont 13.8 24.2 11.9 3.9 Massachusetts Virginia 15.4 7.0 17.9 Vermont 13.8 23.0 11.1 2.5 New Jersey 13.9 13.0 3.8 20.2 Virginia 14.0 20.5 3.8 13.8 20.2 Myoshington 14.0 12.0 10.7 Myoshington 14.3 17.5 11.4 16.1 Myisconsin 14.5 23.0 12.2 13.3 Montana 14.7 25.8 15.6 7.3 Kansas 14.8 19.8 3.4 12.2 Kansas 14.8 19.3 18.8 10.2 2.9 4 12.2 Kansas 14.8 19.3 10.2 Kansas 14.8 19.3 10.2 Kansas 14.8 19.3 10.9 12.2 Kansas 14.8 12.3 Kansas 14.8 12.3 10.9 12.2 Kansas 14.8 12.3 10.5 12.1 11.8 12.3 11.1 11.3 11.3 11.3 11.3 11.3 11.3	owa	12.3	17.2	9.3	10.5
Wyoming 18.3 24.2 11.9 3.9 Massachusetts 13.5 15.4 7.0 17.9 Vermont 18.8 23.0 11.1 2.5 New Jersey 13.9 13.0 3.8 20.2 Virginia 14.0 20.5 8.8 13.8 Nebraska 14.1 18.0 12.0 10.7 Washington 14.3 17.5 11.4 16.1 Wisconsin 14.5 23.0 12.2 11.3 Wontana 14.7 25.8 15.6 7.3 Kansas 14.8 19.9 5.4 12.2 Alaska 14.9 24.4 13.7 17.7 Idaho 15.3 18.8 10.2 29.4 Oregon 16.5 24.1 11.3 25.4 Rhode Island 16.6 14.9 5.4 25.5 South Dakota 16.6 19.3 9.8 8.7 Illinois 17.0 17.2	Connecticut	12.6	17.3	8.6	19.9
Massachusetts Vermont 13.8 23.0 11.1 2.5 New Jersey 13.9 13.0 3.8 20.2 Viriginia 14.0 20.5 8.8 13.8 13.8 Vebraska 14.1 18.0 12.0 10.7 Washington 14.3 Visconsin 14.5 23.0 12.2 13.3 Visconsin 14.5 23.0 12.2 13.3 Visconsin 14.7 25.8 15.6 7.3 Alaska 14.9 24.4 13.7 17.7 Idaho 15.3 16.8 10.2 29.4 Oregon 16.5 24.1 11.3 25.4 Rhode Island South Dakota 16.6 14.9 5.4 25.5 South Dakota 16.6 14.9 16.7 7.5 24.8 Pennsylvania 17.0 16.7 7.5 24.8 Pennsylvania 18.1 13.3 7.2 35.7 Indiana 18.4 20.3 10.9 22.2 Viscouri 18.6 24.7 14.9 18.2 Viscouri 18.6 24.7 14.9 37.3 Arizona 20.8 24.0 11.8 35.1 16.8 20.9 21.0 22.5 3.1 24.4 26.0 27.8 Viscouri 28.6 28.4 29.3 21.7 22.5 28.1 28.1 28.1 28.1 28.1 28.1 28.1 28.2 28.3 28.3 28.3 28.3 28.3 28.3 28.3	Maine	13.1	20.4	10.5	6.2
Vermont 18.6 23.0 11.1 2.5 New Jersey 13.3 13.0 3.8 20.2 Virginia 14.0 20.5 4.6 13.4 Nebraska 14.1 18.0 12.0 10.7 Washington 14.1 17.5 11.4 16.1 16.1 Wisconsin 14.5 23.0 12.2 13.3 Montana 14.7 25.8 15.6 7.3 Xansas 14.6 19.9 9.4 12.2 Alaska 14.9 24.4 13.7 17.7 Alaska 16.5 24.1 11.3 25.4 Alaska 16.5 24.1 11.3 25.4 25.5 South Dakota 16.6 14.9 5.4 25.5 South Dakota 16.6 19.3 5.9 8.7 Willinois 17.0 16.7 7.5 24.8 Pennsylvania 27.0 17.2 10.2 17.6 27.7 Milsouri 18.1 13.3 7.2 35.7 27.7 Milsouri 18.6 24.7 14.9 18.2 27.7 Milsouri 18.6 24.7 14.9 18.2 27.7 Milsouri 19.7 22.3 10.5 22.1 22.1 Milsouri 20.1 23.1 11.8 23.1 23.1 23.1 24.2 24.2 24.2 24.3 25.5 25.3 25.9 24.9 25.5 25.3 25.9	Wyoming	13.3	24.2	11.9	3.9
New Jersey Virginia 14.0 20.5 18.8 13.8 Nebraska 14.1 18.0 12.0 10.7 Washington 14.5 17.5 11.4 16.1 Wisconsin 14.7 25.8 15.6 7.3 Montana 14.7 25.8 15.6 7.3 Massas 14.8 19.9 0.4 12.2 Alaska 14.9 24.4 13.7 17.7 Idaho Dregon 16.5 24.1 11.3 25.4 Eventual 16.6 19.3 19.9 3.7 Idiniana 16.6 19.3 19.9 3.7 Idiniana 18.4 20.3 10.9 22.2 20.2 Idiniana 18.6 20.3 10.9 22.2 20.2 Idiniana 18.6 24.7 14.9 18.2 Virginia 19.7 Visconsin 18.6 24.7 14.9 18.2 Virginia 19.7 16.5 18.8 26.4 20.3 20.9 20.1 21.0 22.5 20.1 21.1 23.1 25.9 26.4 26.4 26.4 26.6 26.4 27.1 28.1 28.1 28.2 29.3 20.9 20.1 20.1 21.1 21.2 23.5 20.9 20.8 24.0 21.8 25.9 21.9 21.0 22.5 23.8 24.0 25.5 26.0 27.7 28.8 28.1 28.1 28.2 29.3 29.3 20.9 20.1 20.1 20.3 25.9 20.9 20.1 20.1 20.3 25.9 20.9 20.6 20.7 20.8 20.9 20.6 20.9 20.7 20.8 20.9 20.6 20.9 20.6 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.7 20.8 20.9 20.9 20.7 20.8 20.9 20.9 20.9 20.9 20.9 20.9 20.9 20.9	Massachusetts	13.5	15.4	7.0	17.9
Virginia 14.0 20.5 8.8 13.4 Nebraska 14.1 18.0 12.0 10.7 Washington 14.3 17.5 11.4 16.1 Wisconsin 14.5 23.0 12.2 13.3 Montana 14.7 25.8 15.6 7.3 Kansas 14.8 19.9 9.4 12.2 Alaska 14.9 24.4 13.7 17.7 Idaho 15.3 18.8 10.2 29.4 Oregon 16.5 24.1 11.3 25.4 Rhode Island 16.6 14.9 5.4 25.5 Benduth Dakota 16.6 14.9 5.4 25.5 Pennsylvania 17.0 16.7 7.5 24.8 Pennsylvania 17.0 17.2 10.2 17.6 California 18.4 20.3 10.9 22.2 20.2 Delaware 18.5 21.3 10.2 26.2 20.2	Vermont	13.8	23.0	11.1	2.5
Nebraska	New Jersey	13.9	13.0	3.8	20.2
Washington Wisconsin 14.5 23.0 12.2 13.3 Montana 14.7 25.8 15.6 7.3 Kansas 14.8 19.9 34 12.2 Alaska 14.9 24.4 13.7 17.7 Alaska 16.6 Dregon 16.5 24.1 11.3 25.4 Rhode Island 16.6 14.9 5.4 25.5 South Dakota 16.6 19.3 9,9 8.7 Illinois 17.0 16.7 7.5 24.8 Pennsylvania 27.0 28.1 Illinois 17.0 17.2 10.2 17.6 California 18.1 13.3 7.2 35.7 Indiana 18.4 20.8 10.9 22.2 Nevada 18.5 21.3 10.2 26.2 Nevada 18.5 23.8 13.0 27.7 Missouri 18.6 24.7 14.9 18.2 Michigan 19.7 22.3 10.5 22.1 New York 19.7 16.5 3.8 26.4 Dhio 20.1 23.1 11.8 23.1 Florida 20.8 24.0 11.8 35.1 Fexas 20.9 16.0 7.8 41.6 Georgia 21.0 22.5 3.3 42.0 North Carolina 21.2 23.5 10.5 29.3 34.0 North Carolina 21.2 23.5 24.4 14.3 25.5 South Carolina 22.6 24.7 11.5 28.1 Arkansas 22.5 24.4 14.3 25.5 South Carolina 24.6 24.7 11.5 28.1 Arkansas 25.9 29.2 17.5 21.3 Missispipi 26.9 23.7 11.4 25.9 New Wexico 27.2 24.2 14.1 38.6 West Virginia 25.9 29.2 17.5 21.3 Mississippi 26.9 23.7 13.4 45.5 New Mexico 27.2 24.2 14.1 38.6 United States 18.4 19.3 10.0 27.0	Virginia	14.0	20.5	8.8	13.8
Wisconsin Montana Mont	Nebraska	14.1	18.0	12.0	10.7
Montana Mon	Washington	14.3	17.5	11.4	16.1
Alaska Al	Wisconsin	14.5	23.0	12.2	13.3
Alaska Idaho Iban Idaho Iban Iban Iban Iban Iban Iban Iban Iban	Montana	14.7	25.8	15.6	7.3
Idaho 15.3 18.8 10.2 29.4 Oregon 16.5 24.1 11.3 25.4 Rhode Island 16.6 14.9 5.4 25.5 South Dakota 16.6 19.3 9.0 8.7 Illinois 17.0 16.7 7.5 24.8 Pennsylvania 17.0 17.2 10.2 17.6 California 18.1 13.3 7.2 35.7 Indiana 18.4 20.3 10.9 22.2 Delaware 18.5 21.3 10.2 26.2 Nevada 18.5 23.8 13.0 27.7 Missouri 18.6 24.7 14.9 18.2 Michigan 19.7 22.3 10.5 22.1 New York 19.7 16.5 8.8 26.4 Ohio 20.1 23.1 11.8 23.1 Florida 20.3 25.9 14.9 37.3 Arizona 20.8 24.0 11.8 35.1 Fexas 20.9 16.0	Kansas	14.8	19.9	9.4	12.2
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Rhode Island South Dakota South Carolina South	daho	15.3	18.8	10.2	29.4
South Dakota If in it is	Oregon	16.5	24.1	11.3	25.4
Illinois	Rhode Island	16.6		5.4	25.5
Pennsylvania				9.9	
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Table 4. Correlation of children in poverty and concentrated disadvantage with multiple adverse childhood experiences (ACEs) ACEs 2+ ACEs 3+ Children in poverty 0.50 0.44 Concentrated disadvantage 0.15 0.07

Conclusions

Nationally the percentage of children in poverty and the prevalence of 2+ ACEs was nearly 20%, while the percentage of households in areas of concentrated disadvantage approached 30%.

Children in poverty correlated more with 2+ ACEs than 3+ ACEs at the state level; it was also highly correlated with concentrated disadvantage.

Further analysis of individual ACEs by state may help shed light on the correlation between multiple ACEs and children in poverty.

Limitations

Aggregated data cannot be used to make inferences at the individual level.

Spearman rank correlation indicates only whether two variables are monotonically related.

Concentrated disadvantage is a 5-year average, while ACEs and children in poverty are 1-year estimates. This difference could have masked any correlation with ACEs, however, concentrated disadvantage was highly correlated with children in poverty.



Acknowledgments

We thank the advisory committee, who provided guidance in the development of the *Health of Women and Children Report*, and United Health Foundation for their continued support of this project.

Disclosure

Arundel Metrics receives funding from United Health Foundation to produce America's Health Rankings. Arundel Metrics (arundelmetrics.com) is a small, data-driven consulting firm specializing in public health measurement and index generation.

