

Adverse Childhood Experiences: Separate and Cumulative Effects on Adolescent Health and Well-Being

Background

- Adverse childhood experiences (ACE) are linked to depression, substance abuse, mortality, and chronic health problems in adulthood
- Few studies have examined the more proximate effects of ACE on health and well-being in adolescents
- The cumulative risk hypothesis suggests it may be the combination of multiple risk factors that is detrimental to well-being
- Most studies on ACE exposure and health assess adults' current well-being and use select, non-representative samples
- Family functioning is important for children's health and could potentially buffer or exacerbate effects of ACE exposure

Current Study

- Uses nationally representative data, the National Survey of Children's Health
- Examines ACE exposure and outcomes among adolescents (ages 12–17) rather than adults
- Examines ACE exposure in two ways
 - Each individual ACE relative to others and net of other factors
 - Cumulative ACE exposure net of other factors
- Focuses on two outcomes as reported by parents:
 - Global health
 - Emotional well-being

Data, Sample, & Methods

- 2011/2012 National Survey of Children's Health (NSCH)
 - Households with children under age 18 in all 50 states and the District of Columbia
 - One child randomly selected to be the subject of the interview
 - Parent or guardian answered questions about themselves, the family, and child
- Analytic sample
 - Respondents with adolescent children ages 12–17
 - Respondent is child's mother for 69% of the sample
 - N = 33,774 of 95,677 interviews, weighted to represent the population
- We use weighted multivariate logistic regression
- We also investigate whether level of family functioning moderates effects of ACE with interaction terms between cumulative ACE and family functioning

Co-Occurrence of ACE

Figure 1. Distribution of ACE across analytic sample

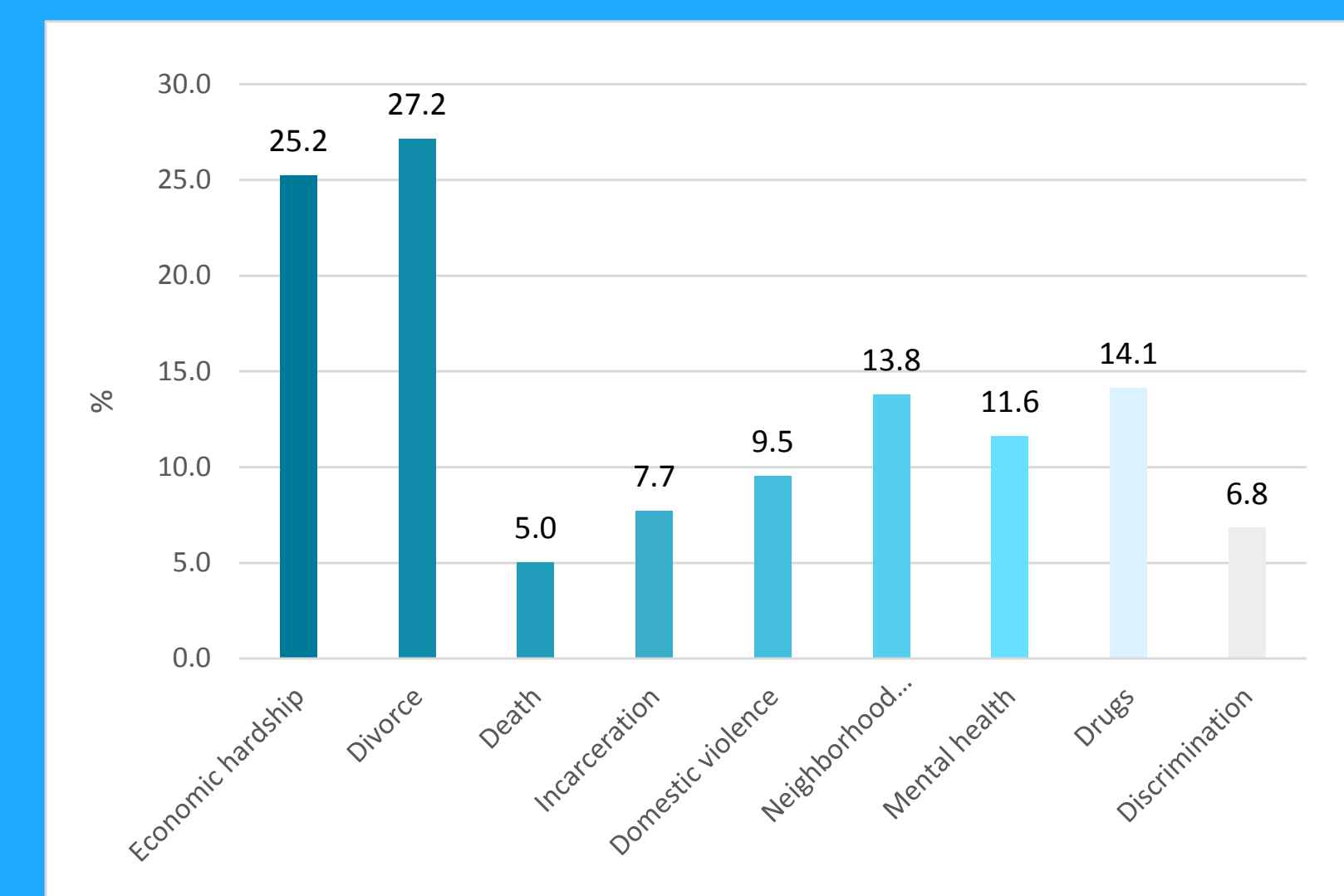


Figure 2. Percentage of adolescents with exposure to no ACE, 1 or 2 ACE, or 3 or more ACE

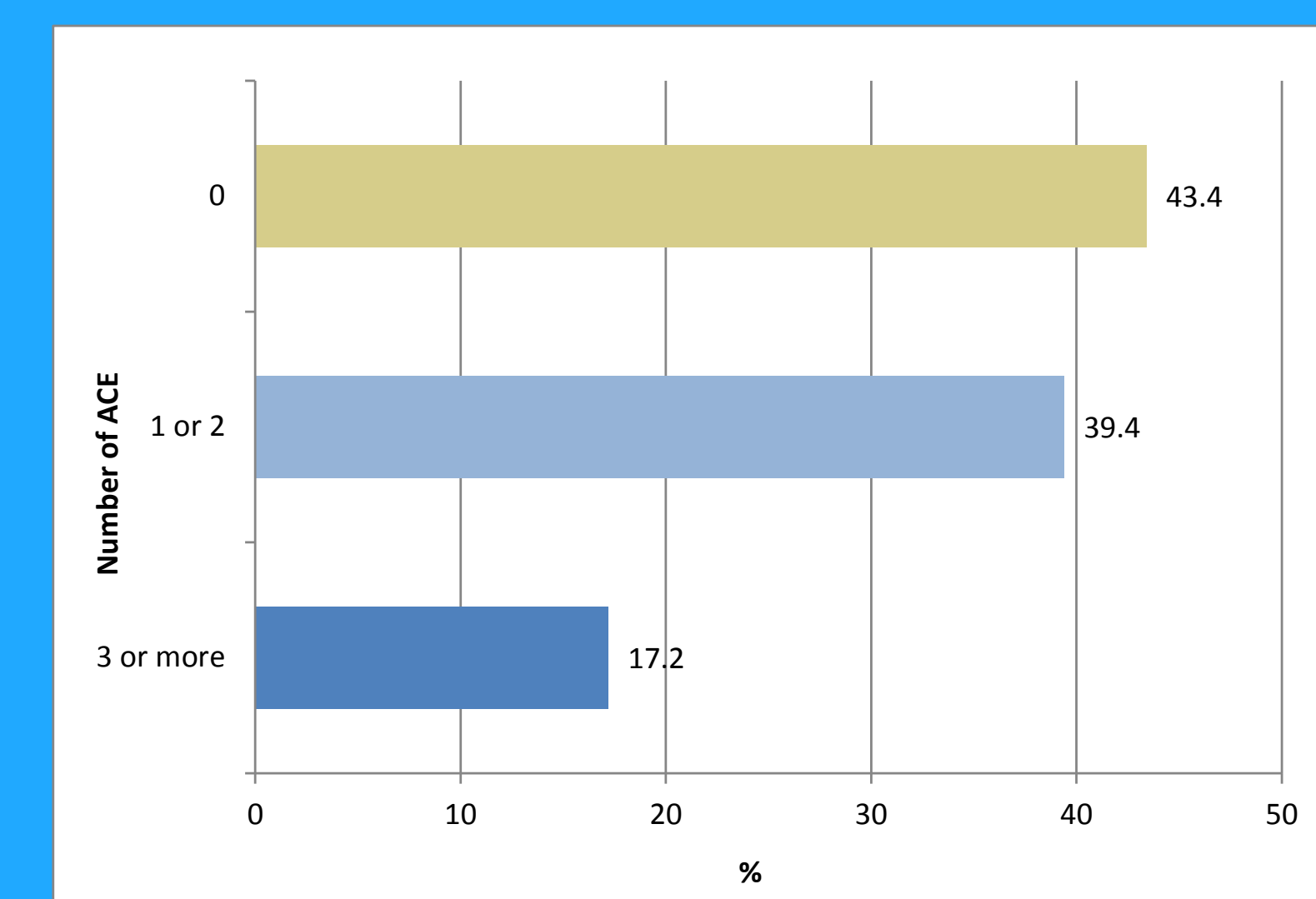


Table 1. Prevalence of individual ACE (rows) conditional on another (columns)

Adverse Childhood Experience	Weighted Percentages of Reporting Other Adverse Childhood Experiences									
	1	2	3	4	5	6	7	8	9	10
	Total Sample (n=1,908)	Economic Hardship (n=1,908)	Parents Divorced (n=1,908)	Death of Parent (n=1,908)	Jail/Prison (n=2,237)	Domestic Violence (n=2,788)	Neighborhood Violence (n=4,152)	Live with mentally ill person (n=4,008)	Live with drug/alcohol abuse (n=4,008)	Experienced discrimination (n=1,908)
	%	%	%	%	%	%	%	%	%	%
Experienced economic hardship very or somewhat often since child was born.	25.26	—	37.71	36.67	46.80	49.66	45.84	44.57	43.36	37.39
Child lived with a parent who divorced or separated after child was born.	27.16	29.45	—	37.04	56.95	62.57	46.89	47.78	57.20	32.82
Child lived with a parent who died.	5.02	4.34	5.63	—	9.79	8.34	7.79	7.46	8.20	6.40
Child lived with a parent who served time in jail or prison after child was born.	7.74	12.59	19.64	22.13	—	34.31	25.90	22.32	35.49	13.83
Child saw or heard parents or other adults slap, hit, kick, punch or beat each other up.	9.53	14.30	22.91	19.75	36.87	—	36.26	28.70	36.47	17.20
Child was a victim of violence or witnessed any violence in his or her neighborhood.	13.78	15.41	20.26	22.15	32.66	42.81	—	29.76	29.51	30.49
Child lived with someone who was mentally ill or suicidal, or severely depressed for more than a couple of weeks.	11.61	14.92	20.51	21.17	27.77	33.79	29.57	—	34.40	17.69
Child lived with someone who had a problem with drugs or alcohol.	14.14	18.04	30.40	28.77	54.69	52.34	36.04	42.41	—	19.49
Child was unfairly treated or judged because of his or her race or ethnic group.	6.82	5.89	6.62	8.57	8.08	9.43	14.36	8.29	7.37	—

Figure 3. Prevalence of each ACE among total sample and among those who have had a household member with a mental illness

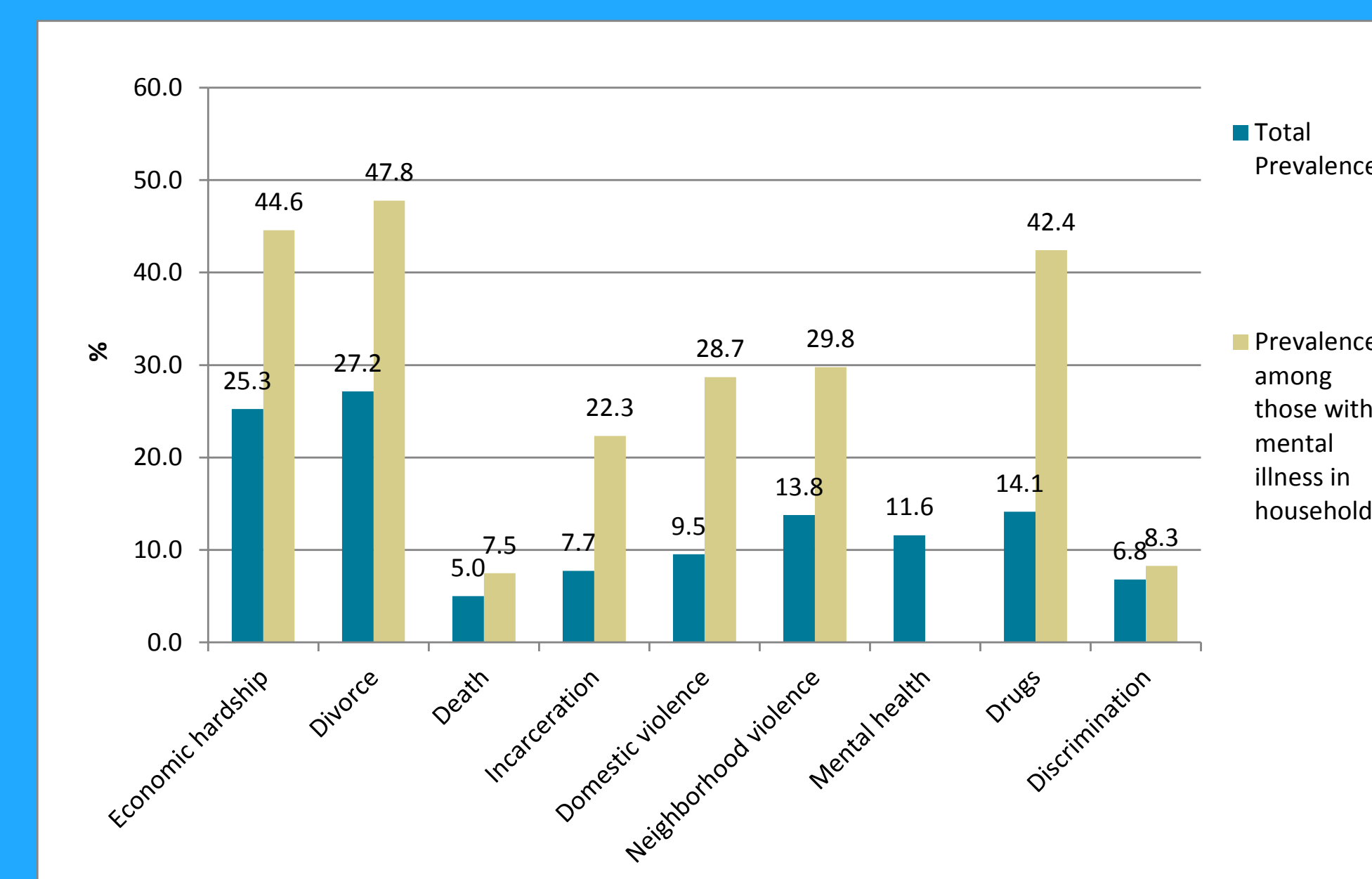


Figure 3 provides an example to help interpret Table 1 by providing a visual depiction of the results highlighted in Column 8. The figure shows the overall prevalence for each ACE, compared with the prevalence of each ACE among those adolescents who have had a household member with a mental illness.

Health & Well-Being Outcomes

Figure 4. Percentage of adolescents with poor health or poor emotional well-being, by ACE exposure

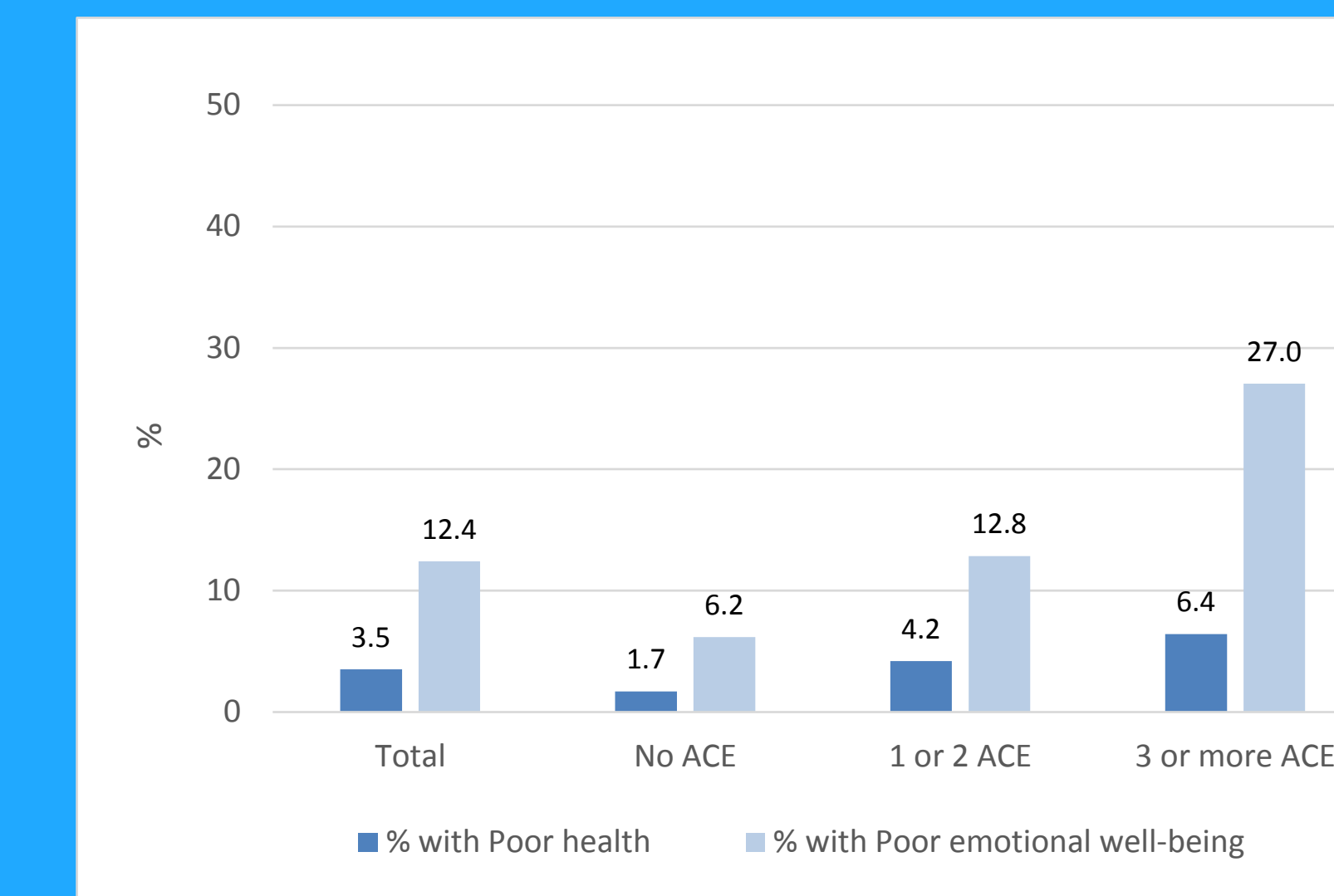


Figure 5. Adjusted odds ratios of cumulative and individual ACE predicting poor health

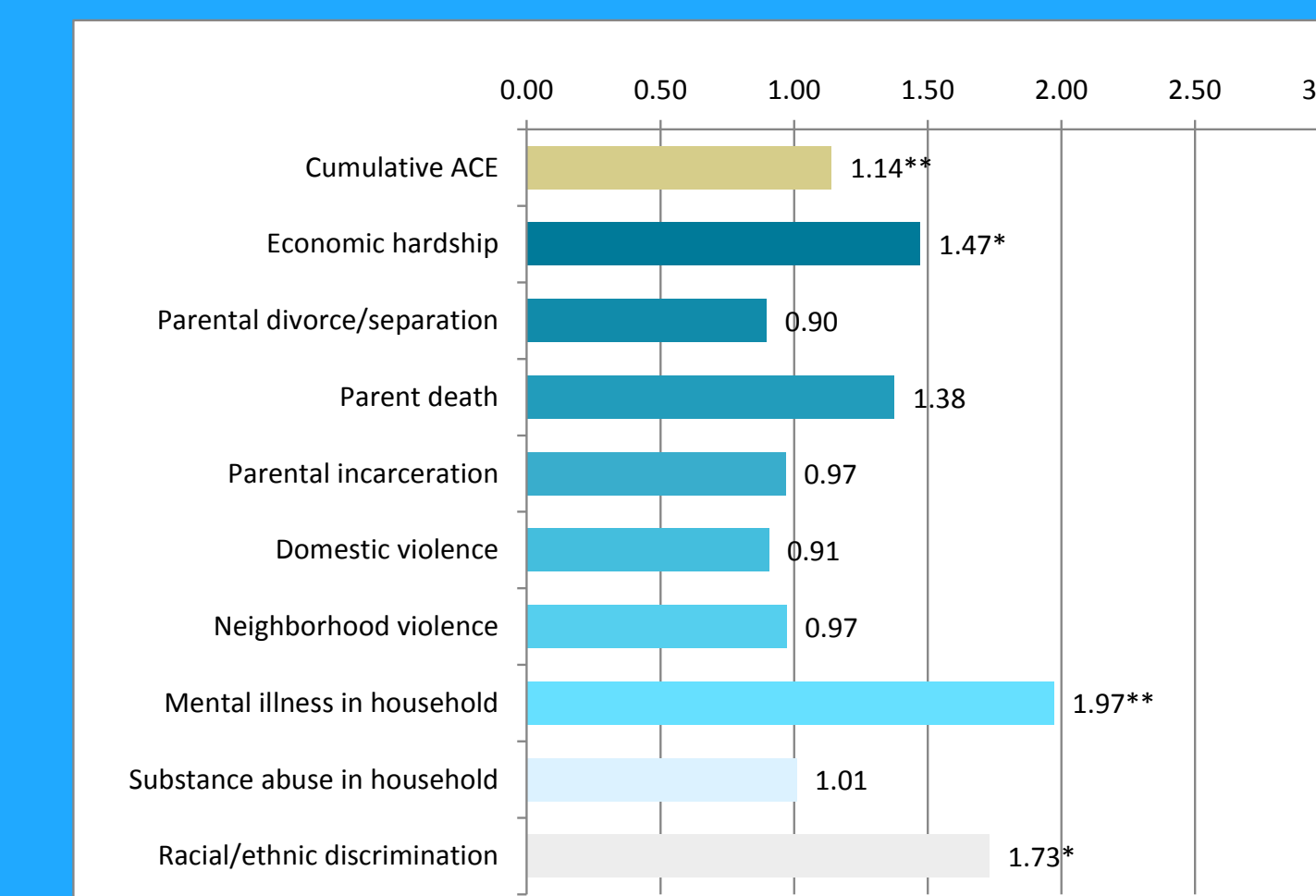


Figure 6. Adjusted odds ratios of cumulative and individual ACE predicting poor emotional well-being

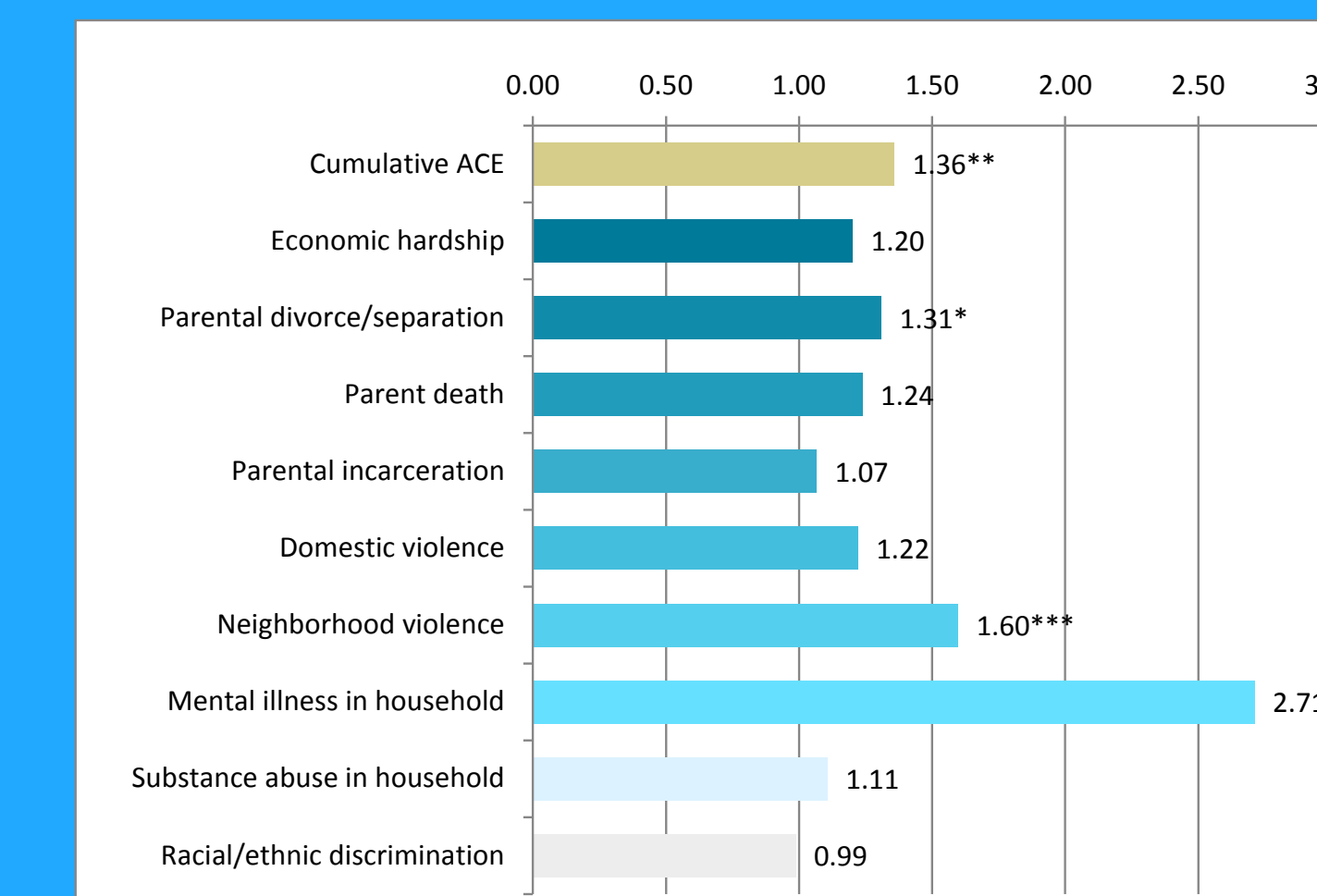
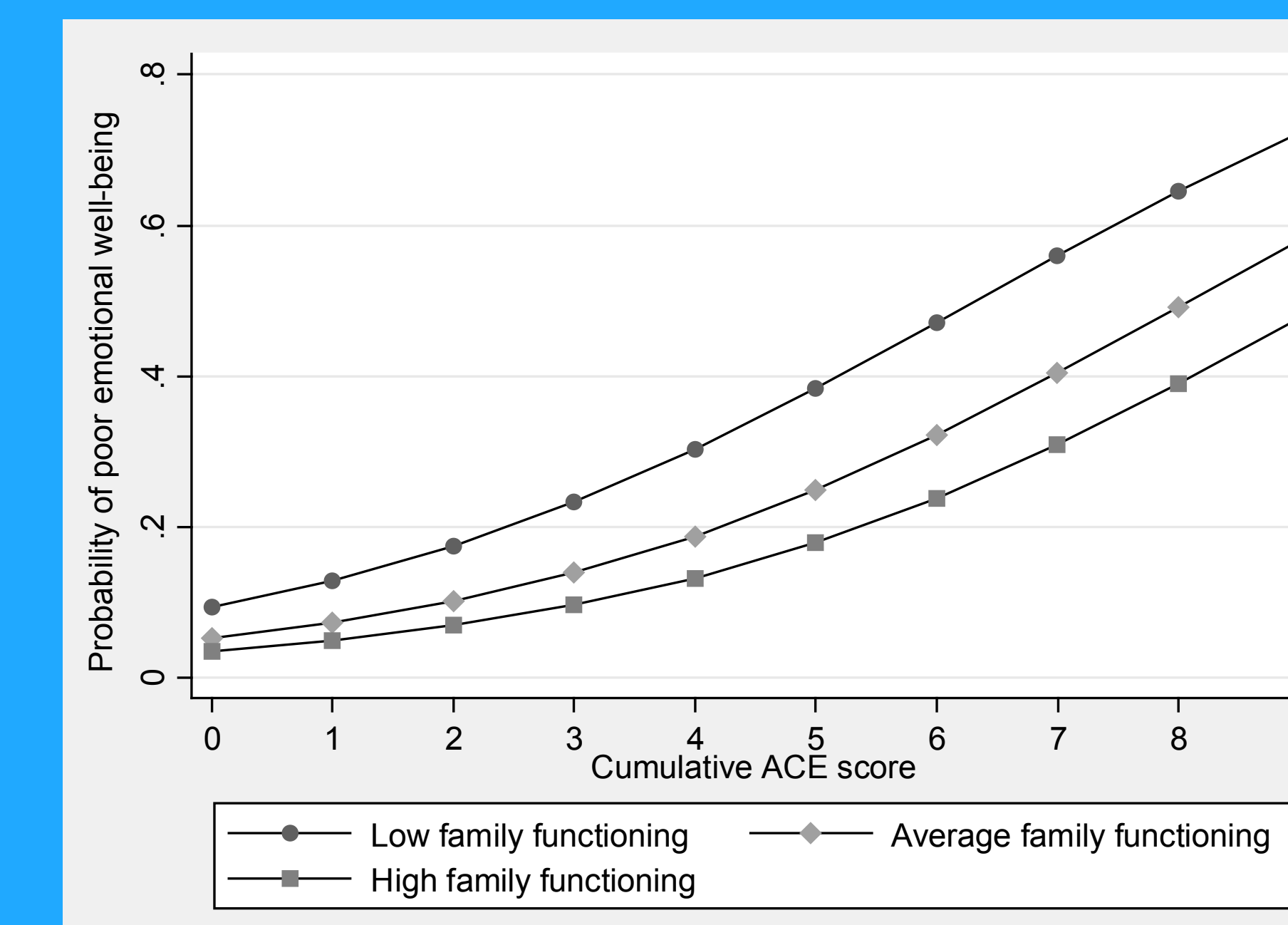


Figure 7. Predicted probabilities of poor emotional well-being by family functioning and ACE exposure



Measures

- Dependent variables**
 - Adolescent's global health, dichotomized (1 = poor health)
 - Adolescent's emotional well-being, dichotomized (1 = poor emotional well-being) derived from doctor-diagnosed depression or anxiety and caregivers' reports of child's frequency of being unhappy, sad, or depressed
- Independent variables**
 - Adverse Childhood Experiences: socioeconomic hardship; divorce/separation of parent; death of parent; parental incarceration; witness to domestic violence; victim of neighborhood violence; household member that was mentally ill or suicidal; household member had alcohol or drug problem; discrimination or unfair treatment due to race or ethnicity
 - Family functioning index, derived from frequency of family shared meals, parent-child communication, and abbreviated Parental Stress Index
- Controls**
 - Adolescent's age, gender, race/ethnicity, 4-category household poverty measure, and family structure

Results

- ACEs do not occur in isolation, and children exposed to one ACE are at greater risk of experiencing others
- Economic hardship, mental illness in the home, and discrimination were significantly associated with poor health
- Having divorced parents, being a victim of or witness to neighborhood violence, and mental illness in the home were significantly associated with low emotional well-being
- Odds of poor health increased with each additional ACE reported by 14%**; odds of poor emotional well-being by 36%**
- At higher levels of ACE exposure, higher family functioning reduced the probability of reported emotional problems among adolescents

Conclusions

- Certain groups may have compounded risk for experiencing adverse life events as well as the negative outcomes associated with them
- As findings support the cumulative risk hypothesis, a child's going from no ACE exposure to just one ACE warrants concern for future health and well-being
- Results draw attention to the importance of mental illness as both a risk factor and an outcome among adolescents
- Researchers and programs should not limit their scope to individual adverse events
- Programs and services should consider evaluating and targeting family functioning when addressing ACE and well-being