

By Christina D. Bethell, Narangerel Gombojav, and Robert C. Whitaker

Family Resilience And Connection Promote Flourishing Among US Children, Even Amid Adversity

DOI: 10.1377/hlthaff.2018.05425
HEALTH AFFAIRS 38,
NO. 5 (2019): 729–737
This open access article is
distributed in accordance with the
terms of the Creative Commons
Attribution (CC BY 4.0) license.

ABSTRACT The outcome of flourishing and its predictors have not been well documented among US children, especially those who face adversity. Using data for 2016 and 2017 from the National Survey of Children's Health, we determined the prevalence and predictors of flourishing among US children ages 6–17. A three-item index included indicators of flourishing: children's interest and curiosity in learning new things, persistence in completing tasks, and capacity to regulate emotions. The national prevalence of flourishing was 40.3 percent (29.9–45.0 percent across states). At each level of adverse childhood experiences, household income, and special health care needs, the prevalence of flourishing increased in a graded fashion with increasing levels of family resilience and connection. Across the sectors of health care, education, and human services, evidence-based programs and policies to increase family resilience and connection could increase flourishing in US children, even as society addresses remediable causes of childhood adversity.

Christina D. Bethell (cbethell@jhu.edu) is a professor in the Department of Population, Family, and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, in Baltimore, Maryland.

Narangerel Gombojav is an assistant scientist in the Department of Population, Family, and Reproductive Health, Johns Hopkins Bloomberg School of Public Health.

Robert C. Whitaker is director of research and research education at the Columbia-Bassett Program of the Columbia University Vagelos College of Physicians and Surgeons, in New York, New York, and the Bassett Medical Center, in Cooperstown, New York. He is also affiliated with the Bassett Research Institute at the Bassett Medical Center, in Cooperstown.

Flourishing and its predictors and links to health outcomes are well documented in adults, including among those facing adversities.^{1–6} Less is known about flourishing and its correlates among children, especially those who face circumstances such as adverse childhood experiences (ACEs), chronic illness, or poverty. Studies show that flourishing is distinct from an absence of physical or mental illness and other adversities; that flourishing can and does exist amid these circumstances; and that health outcomes vary widely among individuals exposed to similar levels of adversity.^{4,6} Understanding the factors that promote flourishing amid adversity is an important public health need for children and families.

A recent systematic review⁷ of human flourishing models identified six overlapping positive attributes used to define *flourishing*: meaning, engagement, positive relationships, competence (or accomplishment), positive emotion, and

self-esteem (or self-worth). Among these six attributes, meaning and engagement in life were common to each flourishing model. Positive emotions were least consistently included in definitions of *flourishing*.

There is a robust literature on flourishing, its specific attributes, and how it is measured and relates to other concepts such as well-being.^{1–9} In terms of the six attributes listed above, flourishing is similar to measures of subjective well-being, such as those used by the World Health Organization¹⁰ and the Organization for Economic Cooperation and Development.¹¹ However, flourishing is distinct from other comprehensive measures of well-being, such as the Gallup measure,¹² which includes reflective evaluations of life satisfaction, having financial and social needs met, and experiencing physical vitality; the United Nations Children's Fund child well-being measure,¹³ which includes objective measures related to material, educational, health, safety, housing, and environmental

resources and health behaviors and risks; and a recently developed population well-being measure to explain disparities in life expectancy.¹⁴

Attributes of flourishing identified in research on adults are reflective of goals for promoting the healthy development of children, as set forth in research¹⁵ and national frameworks and guidelines.^{16–18} This includes healthy social and emotional development and cultivating an open and engaged approach to learning. Because of children's developmental status and reliance on parent or teacher reports of children's attributes for measurement validity reasons, measuring flourishing for children typically focuses on parents' or other adults' reports of observable attributes of children.^{19–22} In contrast, adult measures of flourishing typically rely on self-reports.

Flourishing constructs for children that are amenable to parent-reported measurement have been set forth.^{19–22} Emphasized are indicators of whether children show interest and curiosity in learning new things, are able to regulate emotions and behaviors in challenging situations, and can focus and persist to achieve goals. Studies using attributes of child flourishing such as these document associations with reductions in risky health behaviors and mental health problems in children and youth,^{23–25} as well as reductions in physical, mental, and social health problems as adults.^{25,26}

Beginning with its 2011–12 administration, the National Survey of Children's Health (NSCH) included items developed to assess flourishing among children ages 6 months to 5 years and ages 6–17 years. These items were formulated by an expert panel sponsored by the Health Resources and Services Administration and facilitated by the Child and Adolescent Health Measurement Initiative in partnership with Child Trends. The issues were selected to optimize validity for parent report (tested using cognitive interviewing), align with published models of child flourishing, consider children's developmental status, and minimize survey burden. We focused on children ages 6–17 in this study, since key variables of interest are not available in the NSCH for younger children. The NSCH flourishing items for children ages 6–17 asked parents how well each of three items describes their child: “shows interest and curiosity in learning new things,” “works to finish tasks he or she starts,” and “stays calm and in control when faced with a challenge.”

Studies using data from the 2011–12 NSCH found that fewer than 50 percent of US children ages 6–17 were flourishing.^{27–30} After adjustments, modest or insignificant variations were found in flourishing by race, ethnicity, and poverty level and significant, but also modest, asso-

ciations between flourishing and obesity, neighborhood and school safety, and parenting practices such as limiting television watching or sharing family meals.^{28–30} The studies also revealed lower rates of flourishing for children exposed to ACEs.³⁰ However, children with two or more ACEs whose parent or guardian reported that their child “stays calm and in control when faced with a challenge” were substantially less likely to be identified as having an emotional, mental, or behavioral health condition.³¹ Such children were also more likely to be engaged in school.^{32,33} In addition, one study found that a higher proportion of children exhibited this resilience attribute of flourishing when their parent reported that they “can share about ideas and talk about things that really matter” with their child and thought they were handling the day-to-day demands of raising children “very well.”³¹ Studies have also shown strong evidence of a link between the attributes of child flourishing, such as resilience, with nurturing parenting and parental coping.^{34–40} To date, no studies have assessed how the parenting and family factors included in the NSCH promote child flourishing across subgroups of children according to their level of adversity, such as exposure to ACEs, poverty, or the presence of special health care needs. Knowledge about this is important for efforts to promote systems of care to improve positive outcomes for children, such as the new Integrated Care for Kids Model advanced by the Centers for Medicare and Medicaid Services.⁴¹

Beginning with the 2016 administration of the NSCH, four new items were added to assess family resilience, and large changes were made to the sampling frame and mode of administration that prevent comparisons with prior years of the NSCH.⁴² These changes require the establishment of a new baseline prevalence of flourishing among children for the US and by state. In addition, they provide an opportunity to examine population-level associations between child flourishing and attributes of family resilience and connection that research suggests foster child flourishing, for all children and those facing adversities.^{34–40}

This study used 2016 and 2017 NSCH data for US children ages 6–17 to address four objectives: establish the construct validity of a three-item child flourishing index (CFI) by examining its association with school engagement, describe the national and state prevalences of flourishing, determine whether higher scores on a created six-item family resilience and connection index (FRCI) are associated with a greater prevalence of flourishing, and determine whether the strength of the association between FRCI scores and the prevalence of flourishing varies accord-

ing to children's level of adversity (ACEs, household income, and presence of special health care needs).

Addressing these objectives will advance efforts to measure and promote child flourishing and to mitigate the ongoing adversities facing US children.

Study Data And Methods

DATA AND POPULATION The National Survey of Children's Health is funded and directed by the Health Resources and Services Administration's Maternal and Child Health Bureau and is fielded by the Census Bureau.⁴² The 2016 and 2017 NSCH used address-based sampling and was self-administered (on paper or online) by the parent or guardian of a randomly selected child in a sampled household. In this article, "parent" refers to parent or guardian.

This study focused on children ages 6–17. Combined, the 2016–17 NSCH data included 71,811 completed questionnaires, of which 51,156 were completed for children ages 6–17. Data were weighted to be representative of the nation and each state's population and adjusted for the complex sampling design. All analyses were conducted using SPSS, version 24. (See online appendix A1 for additional information on the NSCH data used in this study.)⁴³

KEY MEASURES Below is a summary of the key measures used in this study. (See appendixes A2, A3, and B for additional information on the measures, including psychometric properties of key measures.)⁴³

► **CHILD FLOURISHING INDEX:** We used three items in the NSCH, described above, to create a child flourishing index for children ages 6–17. The CFI assigns one point for each parent response of "definitely true" (versus "somewhat or not true") to each item, with the score ranging from 0 to 3. Children with a score of 3 were classified as flourishing.

► **FAMILY RESILIENCE AND CONNECTION INDEX:** A four-item family resilience index (FRI) asked parents, "When your family faces problems, how often are you likely to": "talk together about what to do," "work together to solve our problems," "know we have strengths to draw on," and "stay hopeful even in difficult times." Additionally, two items in the survey asked parents how well they "can share ideas or talk about things that really matter" with their child (parent-child connection) and how well they think they are "handling the day-to-day demands of raising children" (parent coping). We created a six-item FRCI for this study. First, one point was assigned for each time a parent respondent answered "all of the time" to one of the four FRI

items. Second, one point was assigned for each time a parent responded "very well" to the two additional items listed above.

► **SCHOOL ENGAGEMENT:** Children were classified as meeting criteria for school engagement if their parents reported "definitely true" for both of the following items: their child "cares about doing well in school" and "does all required homework."

► **SOCIODEMOGRAPHIC FACTORS, SPECIAL HEALTH CARE NEEDS, AND ADVERSE CHILDHOOD EXPERIENCES:** Child age, sex, race and ethnicity, and household income (as a percentage of the federal poverty level) were measured using standard NSCH categories.⁴⁴ Children's special health care needs status was assessed, and ACEs measures were created using validated methods documented elsewhere.^{45,46} Children with special health care needs are classified as "more complex" when they meet more than the first of the five criteria in the Children with Special Health Care Needs Screener.⁴⁶

ANALYTIC METHODS

► **CHILD FLOURISHING INDEX CONSTRUCT VALIDITY:** Multivariable logistic regression models were used to assess the construct validity of the CFI. These models used school engagement as the outcome (dependent) variable, the CFI items or scores as the predictor variables, and ACEs, special health care needs status, and sociodemographic variables as covariates. A separate regression model was developed for each CFI item, using its response levels as predictors. For the CFI score, the categories of 0 or 1, 2, and 3 were used as predictors.

► **STATE PREVALENCES OF CHILD FLOURISHING:** Nested *t*-tests were used to assess the statistical significance of the difference between each state's prevalence of child flourishing (using CFI criteria) and the national prevalence.

► **ASSOCIATIONS BETWEEN INDEXES ACROSS CHILD ADVERSITY CATEGORIES:** Chi-square tests were used to assess the significance of differences in the prevalence of child flourishing across levels of exposure to ACEs (0, 1, 2 or 3, and 4 or more), household income (four levels, expressed as a percentage of the federal poverty level), special health care needs status ("more complex needs," "less complex needs," and "no special health care needs"), and other sociodemographic characteristics. Multivariable logistic regression analysis was employed to calculate adjusted odds of flourishing by levels of the FRCI score (0 or 1, 2 or 3, and 4–6), after other variables (including ACEs) were controlled for. Finally, the strength of the association between FRCI scores and the prevalence of flourishing was separately evaluated for subgroups of children who faced different levels of adversity as

measured by ACEs, household income, and the presence of special health care needs.

LIMITATIONS Our study had several limitations. First, this study was cross-sectional and could not establish causal relationships between flourishing and family resilience and connection.

Second, the flourishing measure used in this study was not meant to be definitive and may have overestimated flourishing, since reporting bias among parents tends to be positive and only three items are used in the NSCH to operationalize the measurement of flourishing. If additional items and dimensions were assessed, a lower prevalence of flourishing likely would result, because some children would fail to meet the additional criteria. Additional research is needed—especially to determine measures of flourishing among children with disabilities, for whom the three items in the CFI might not be as meaningfully applied.

Third, the CFI and FRCI have not yet been evaluated for clinical applications, nor are child self-report versions available.

Fourth, the ACEs measure included in the NSCH did not explicitly ask about child sexual abuse or neglect. Research suggests that the experiences that are assessed are likely to co-occur with these unassessed ACEs. Thus, we do not expect children with such experiences to be

missed by the NSCH ACEs cumulative risk measure,⁴⁶ though some may be.

Study Results

VALIDITY OF THE CHILD FLOURISHING INDEX We found a significant graded relationship between greater flourishing as shown on the CFI score and the prevalence of school engagement. There was a 56.2-percentage-point difference in school engagement between children meeting zero or one versus meeting all three CFI criteria (33.2 percent versus 89.4 percent) (exhibit 1). Compared to children meeting zero or one CFI criteria, the adjusted odds of school engagement were 14.19 times greater for children meeting all three criteria and 4.97 times greater for children meeting two criteria. A significant graded relationship was also found between parent endorsement of each CFI item (from “not true” to “somewhat true” to “definitely true”) and the prevalence of school engagement, but there was a stronger graded relationship between school engagement and levels of the CFI score. (See appendix D for detailed regression findings.)⁴³

NATIONAL AND STATE PREVALENCES OF CHILD FLOURISHING The prevalence of flourishing among US children ages 6–17 was 40.3 percent (exhibit 2). This ranged from 29.9 percent to 45.0 percent across states. (See appendix exhibits C1 and C2 for findings for each state.)⁴³

VARIATIONS IN PREVALENCE OF FLOURISHING BY CHILD CHARACTERISTICS The prevalence of flourishing varied by about 5 percentage points across age and sex categories, with a higher prevalence observed in older children and females (exhibit 2). Prevalence varied by about 12 percentage points across income categories, with the highest prevalence among children living in households with incomes 400 percent of or higher than the federal poverty level (46.9 percent). Prevalence of flourishing varied about 7 percentage points across racial and ethnic groups. After other factors were adjusted for, race and ethnicity were not significantly associated with flourishing. Prevalence varied most (by 33.2 percentage points) across subgroups of children with special health care needs and second-most (by 27.3 percentage points) by children’s level of exposure to ACEs.

ASSOCIATION OF FAMILY RESILIENCE AND CONNECTION WITH FLOURISHING The FRCI and each of its components showed a graded association with child flourishing. Compared to children with a FRCI score of 0 or 1, those with scores of 2 or 3 and 4–6 had 2.11 times and 3.71 times greater odds of flourishing, respectively, after covariates were adjusted for (exhibit 3). Specifically, a 30.0-percentage-point difference in

EXHIBIT 1

Percent of US children ages 6–17 who were engaged in school and adjusted odds ratios, by child flourishing index (CFI) score and score items, 2016–17

	Percent	Adjusted odds ratio	95% CI
CFI score			
3	89.4	14.19	12.42, 16.21
2	73.6	4.97	4.39, 5.61
0 or 1	33.2	Ref	
CFI score items			
Shows interest and curiosity in learning new things			
Definitely true	75.0	5.98	5.24, 6.83
Somewhat true or not true	28.7	Ref	
Works to finish tasks he or she starts			
Definitely true	84.9	9.02	8.12, 10.03
Somewhat true or not true	34.9	Ref	
Stays calm and in control when faced with a challenge			
Definitely true	82.8	3.98	3.58, 4.43
Somewhat true or not true	51.4	Ref	

SOURCE Authors’ analysis of data for 2016 and 2017 from the National Survey of Children’s Health. **NOTES** All percentages are weighted to represent the US population of children ages 6–17. The percentage of children who engaged in school differed significantly ($p < 0.001$ using chi-square tests) across each level of the CFI score and within each level of the CFI score item. Adjusted odds ratios controlled for age, sex, race/ethnicity, household income, special health care needs status, and adverse childhood experiences (ACEs) status.

EXHIBIT 2
Percent of US children ages 6–17 who were flourishing and adjusted odds ratios, by child and family characteristics, 2016–17

	Percent with characteristic	Flourishing (“Definitely true” response to all 3 CFI items)			“Definitely true” response for each CFI item: ^a		
		Percent	Adjusted odds ratio ^b	95% CI	Interested and curious in learning new things	Works to finish tasks started	Stays calm and in control when faced with a challenge
All children	100.0%	40.3	— ^c	— ^c	83.1%	64.4%	50.3%
Child’s age (years) ^d							
6–11	50.0	38.7	Ref		88.6	64.5	46.4
12–14	24.8	40.4	1.26	1.12, 1.41	79.1	63.1	51.6
15–17	25.1	43.6	1.51	1.35, 1.68	76.0	65.6	56.8
Child’s sex ^{****}							
Male	51.1	37.4	0.81	0.74, 0.89	80.5	59.8	48.0
Female	48.9	43.4	Ref		85.8	69.3	52.8
Child’s race/ethnicity ^e							
Non-Hispanic white	50.9	40.6	Ref		85.1	65.2	49.3
Non-Hispanic black	13.8	35.6	0.93	0.80, 1.08	78.0	57.9	49.5
Non-Hispanic other	10.0	42.8	1.13	0.99, 1.28	83.6	65.1	52.6
Hispanic	25.3	41.5	1.05	0.92, 1.21	81.6	66.2	51.8
Household income (percent of FPL) ^{****}							
0–99%	21.1	35.2	0.71	0.61, 0.82	77.9	58.9	46.5
100–199%	22.1	37.2	0.73	0.64, 0.84	80.1	60.7	47.7
200–399%	26.5	39.6	0.77	0.70, 0.85	84.3	64.0	49.7
400% or more	30.3	46.9	Ref		87.7	71.5	55.4
Child has special health care needs ^{****}							
Yes (more complex needs)	15.8	12.8	Ref		65.4	35.1	19.1
Yes (less complex needs)	6.9	40.7	4.04	3.36, 4.85	84.9	63.0	51.8
No	77.3	46.0	4.64	4.03, 5.34	86.5	70.6	56.6
Number of adverse childhood experiences ^{****}							
4 or more	7.3	20.6	Ref		71.6	44.5	30.0
2 or 3	17.5	30.6	1.32	1.04, 1.68	76.5	54.4	41.8
1	25.3	37.8	1.62	1.28, 2.06	82.0	60.3	49.0
0	49.9	47.9	2.10	1.67, 2.65	87.9	73.1	56.6
FRCI score ^{f ****}							
0 or 1	25.5	21.5	Ref		68.6	45.9	31.3
2 or 3	26.5	38.1	2.11	1.86, 2.39	85.1	64.8	48.9
4–6	48.0	51.5	3.71	3.31, 4.15	89.7	74.1	61.0
Family resilience index score ^{g ****}							
0 or 1	45.1	30.4	Ref		76.7	55.6	40.4
2 or 3	21.0	40.7	1.55	1.36, 1.75	86.5	66.3	51.9
4	33.9	53.1	2.55	2.30, 2.83	89.6	75.0	62.1
Parent-child connection ^{h ****}							
Not very well or not at all	4.4	5.3	Ref		36.7	21.8	12.8
Somewhat well	27.1	23.4	3.90	2.56, 5.92	70.6	48.6	34.0
Very well	68.5	49.9	12.55	8.32, 18.93	91.1	73.6	59.1
Parent coping ^{i ****}							
Not very well or not at all	1.4	16.4	Ref		61.3	32.9	21.7
Somewhat well	32.7	24.5	1.32	0.72, 2.43	74.7	50.3	34.6
Very well	65.9	48.7	3.56	1.94, 6.53	87.9	72.3	58.7
Engaged in school ^{j****}							
No	32.9	13.1	Ref		63.2	29.5	26.4
Yes	67.1	54.2	6.64	5.88, 7.50	92.8	81.5	61.9

SOURCE Authors’ analysis of data for 2016 and 2017 from the National Survey of Children’s Health. **NOTES** All percentages are weighted to represent the US population ages 6–17. Statistical significance refers to chi-square tests comparing the percentage of children who are flourishing or have “definitely true” responses to child flourishing index (CFI) items across levels of each characteristic. CI is confidence interval. FPL is federal poverty level. FRCI is family resilience and connection index. ^aCFI items are given in full in exhibit 1. ^bAdjusted odds ratios controlled for age, sex, race/ethnicity, income, adverse childhood experiences (ACEs), and special health care needs status. ^cNot applicable. ^dDifferences in percentages by age category are all significant ($p < 0.001$) except for “works to finish tasks started” ($p > 0.10$). ^eDifferences in percentages by race/ethnicity category are all significant ($p < 0.001$) except for flourishing, which is significant ($p < 0.05$), and “stays calm and in control when faced with a challenge” which is not significant ($p > 0.10$). ^fSix-item score (0–6) with one point for each “all of the time” response to the four family resilience index items, and one point for each “very well” response to the parent-child connection and parent coping items. ^gFour-item score (0–4) with one point for each “all of the time” response. ^hBased on response to a single item: “How well can you and this child share ideas or talk about things that really matter?” ⁱBased on response to a single item: “How well do you think you are handling the daily demands of raising children?” ^j**** $p < 0.001$

EXHIBIT 3

Percent of US children ages 6–17 who were flourishing and adjusted odds of flourishing, by family resilience and connection index (FRCI) score and score components, 2016–17

	Percent	Adjusted odds ratio ^a	95% CI
FRCI score			
0 or 1	21.5	Ref	
2 or 3	38.1	2.11	1.87, 2.39
4–6	51.5	3.71	3.31, 4.15
FRCI components 1–4:			
Family resilience index score			
0 or 1	30.4	Ref	
2 or 3	40.7	1.55	1.36, 1.75
4	53.1	2.55	2.30, 2.83
FRCI component 5:			
Parent-child connection			
Not very well or not at all	5.3	Ref	
Somewhat well	23.4	3.90	2.56, 5.92
Very well	49.9	12.55	8.32, 18.93
FRCI component 6:			
Parent coping			
Not very well or not at all	16.4	Ref	
Somewhat well	24.5	1.32	0.72, 2.43
Very well	48.7	3.56	1.94, 6.53

SOURCE Authors' analysis of data from the combined 2016 and 2017 National Survey of Children's Health. **NOTES** Parent-child connection and parent coping items are explained in the notes to exhibit 2. *Flourishing* is defined as having a "definitely true" response to all 3 items in the child flourishing index (index score = 3). All percentages are weighted to represent the US population ages 6–17. Statistical significance refers to chi-square tests comparing the percentage of children who were flourishing across the levels of FRCI score or components. CI is confidence interval. ^aAdjusted odds ratios controlled for age, sex, race/ethnicity, income, adverse childhood experiences (ACEs), and special health care needs status.

flourishing was found between children in the highest FRCI category and those in the lowest (51.5 percent versus 21.5 percent). A 16.6-percentage-point difference was observed between children with an FRCI score of 2 or 3 and those with a score of 0 or 1 (38.1 percent versus 21.5 percent).

Across FRCI components, the association with child flourishing was strongest for the parent-child connection component. The adjusted odds of flourishing were 12.55 times greater for children whose parents reported "very well" (versus "not very well or not at all) to the item "how well can you and this child share ideas or talk about things that really matter." The adjusted odds were 3.90 times greater for children whose parents reported "somewhat well." (See appendix F for regression details.)⁴³

Despite the significant association between ACEs and flourishing (exhibit 2), there were only small changes in the adjusted odds of child flourishing associated with FRCI scores before or after adjusting for ACEs, which indicates that the FRCI is associated with flourishing independent of ACEs. (See appendix exhibit C3 for regression details.)⁴³

ASSOCIATION OF FAMILY RESILIENCE AND CONNECTION WITH FLOURISHING ACROSS LEVELS OF ADVERSITY For groups of children within each level of exposure to ACEs, household income, or special health care needs, there was a similar graded association between flourishing and FRCI scores, with a greater prevalence of flourishing at higher levels of family resilience and connection. Overall, the adjusted odds of flourishing were three to four times greater for children with an FRCI score of 4–6 (compared to a score of 0 or 1) within groups of children at all four levels of exposure to ACEs and at all four levels of household income (exhibit 4). Adjusted odds of flourishing for those with a score of 2 or 3 versus that of 0 or 1 were smaller but also significant.

More specifically, the adjusted odds of flourishing for children with a score of 4–6 versus a score of 0 or 1 within the categories of ACEs ranged from 3.15 to 3.88. For children's household income level, this range was 3.67–3.86.

Among children with "more complex" special health care needs, the adjusted odds of flourishing for those with an FRCI score of 4–6 were 3.69 times greater than for those with a score of 0 or 1. The same comparisons within two other groups of children—those with "less complex" needs and those without any special health care needs—produced similar results. (See appendix E for regression details.)⁴³

Discussion

Approximately 40 percent of school-age children in the US meet criteria for flourishing, as operationalized by an index derived from three items designed to assess flourishing in the National Survey of Children's Health. With only four in ten US children meeting flourishing criteria, populationwide approaches to promoting attributes of flourishing are suggested, even as targeted efforts address the needs of children exposed to adversity. The promising news is that the prevalence of flourishing was associated in a graded fashion with greater levels of family resilience and connection, and the strength of this association was similar across groups of children defined by varying levels of adversity—as measured by exposure to ACEs, household income as a percentage of the federal poverty level, and the presence of special health care needs.

The especially strong association between flourishing and the parent-child connection component of the family resilience and connection index score is consistent with the science showing the primacy of safe, stable, and nurturing relationships to optimal child development. Such relationships are advanced through the

EXHIBIT 4

Percent of US children ages 6–17 who were flourishing and adjusted odds of flourishing, by family resilience and connection index (FRCI) score, stratified by number of adverse childhood experiences (ACEs), household income, and special health care needs status, 2016–17

	Percent flourishing, by FRCI score ^a			Adjusted odds of flourishing, by FRCI score (ref: 0 or 1)			
	0 or 1	2 or 3	4–6	2 or 3		4–6	
				Adjusted odds ratio ^b	95% CI	Adjusted odds ratio ^b	95% CI
All children	21.5	38.1	51.5	2.11	1.87, 2.39	3.71	3.31, 4.15
Number of ACEs							
0	26.8	44.3	57.6	2.06	1.74, 2.44	3.74	3.20, 4.38
1	20.1	36.6	48.4	2.24	1.75, 2.87	3.88	3.08, 4.88
2 or 3	16.8	30.6	40.8	2.15	1.61, 2.88	3.73	2.88, 4.82
4–9	11.9	21.6	30.5	1.91	1.12, 3.26	3.15	1.94, 5.12
Household income (% of FPL)							
0–99%	16.0	37.1	43.7	2.96	1.98, 4.44	3.86	2.70, 5.52
100–199%	18.2	31.3	49.8	1.85	1.35, 2.55	3.84	2.84, 5.19
200–399%	21.3	35.5	51.5	1.92	1.57, 2.35	3.72	3.08, 4.51
400% or more	27.4	45.4	58.9	2.06	1.76, 3.42	3.67	3.17, 4.26
Child has special health care needs							
Yes (more complex needs)	5.7	14.7	18.9	2.84	2.08, 3.88	3.69	2.75, 4.95
Yes (less complex needs)	17.6	43.2	52.4	3.86	2.69, 5.53	5.70	4.05, 8.03
No	27.4	41.9	56.4	1.95	1.70, 2.24	3.58	3.15, 4.07

SOURCE Authors’ analysis of data from the combined 2016 and 2017 National Survey of Children’s Health. **NOTES** All percentages are weighted to represent the US population of children ages 6–17. *Flourishing* is defined as having a “definitely true” response to all 3 items in the child flourishing index (index score = 3). All percentages are weighted to represent the US population ages 6–17. CI is confidence interval. FPL is federal poverty level. ^aWithin each level of ACEs, household income, and special health care needs status, the percentage of children who were flourishing differed significantly ($p < 0.001$) both within and across the three FRCI scores. ^bAdjusted odds ratios controlled for age, sex, race/ethnicity, household income, ACEs, and special health care needs; the exception is that when one of these variables is the dependent variable (for example, ACEs, household income, special health care needs), that variable was not included in the model as an independent variable.

Centers for Disease Control and Prevention’s Essentials for Childhood framework¹⁸ and the national Bright Futures Guidelines.¹⁶

Across the US, efforts are emerging to identify the concrete approaches and resources required to improve resilience and connection within families.^{47–50} Many of these strategies, such as those advanced in the Institute of Medicine report on family-focused interventions,⁴⁷ focus on families as the key social unit for increasing child flourishing and mitigating the negative effects of adversities. These strategies also emphasize the broader social factors that influence family resilience and connection by including family supports related to housing, jobs, transportation, neighborhood safety, social support, and access to resources.

Across the sectors of health care, education, and human services, evidence-based programs and policies to increase family resilience and connection could increase flourishing in US children, even as society addresses remediable causes of childhood adversity. Efforts such as the emerging national Integrated Care for Kids Model⁴¹ seek to promote well-being and value in children’s health care and assessing and tracking

child flourishing and family resilience and connection may support these goals. Similarly, assessing child flourishing and family resilience and connection in the context of emerging initiatives to screen for and address ACEs, as in California’s Medicaid program,⁵¹ may help target and assess the outcomes of efforts to prevent and mitigate the negative effects of ACEs.

People trying to successfully engage families and children in this process must make them partners and give them a voice.^{48,52} Success will also require efforts to increase flourishing among people who provide health care, social, or educational services so that they have sustained meaning and engagement in their work with families.^{53,54}

Promoting the specific aspects of flourishing assessed here could increase the level of meaning and engagement that children have in their relationships and activities in their homes, schools, and neighborhoods. Success relies on people who wish to create safe, stable, and nurturing relationships with children and families as the basis for intergenerational flourishing in the face of aging, disease, and other unavoidable challenges across the life span. ■

Partial findings from this study using only 2016 National Survey of Children's Health data were presented at the AcademyHealth Annual Research Meeting in Seattle, Washington, June 26, 2018. A presentation on this study was presented at Pediatric Academic Societies Meeting in Baltimore, Maryland, April 29, 2019. The authors

thank the Robert Wood Johnson Foundation and the Health Resources and Services Administration of the Department of Health and Human Services for their support of this study. The viewpoints represented in this article are those of the authors and do not represent those of the funding agencies of this work. This is an open

access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) license, which permits others to distribute, remix, adapt, and build upon this work, for commercial use, provided the original work is properly cited. See <https://creativecommons.org/licenses/by/4.0/>.

NOTES

- 1 Agenor C, Conner N, Aroian K. Flourishing: an evolutionary concept analysis. *Issues Ment Health Nurs*. 2017;38(11):915–23.
- 2 Ryff CD, Krueger RF. Approaching human health as an integrative challenge: introduction and overview. In: Ryff CD, Krueger RF, editors. *The Oxford handbook of integrative health science*. New York (NY): Oxford University Press; 2018. p. 3–22.
- 3 VanderWeele TJ. On the promotion of human flourishing. *Proc Natl Acad Sci U S A*. 2017;114(31):8148–56.
- 4 Keyes CL, Simoes EJ. To flourish or not: positive mental health and all-cause mortality. *Am J Public Health*. 2012;102(11):2164–72.
- 5 Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi D, Oishi S, et al. New measures of well-being: flourishing and positive and negative feelings. *Soc Indic Res*. 2010;39:247–66.
- 6 Boehm JK. The road to positive health: behavioral and biological pathways linking positive psychological functioning with health outcomes. In: Ryff CD, Krueger RF, editors. *The Oxford handbook of integrative health science*. New York (NY): Oxford University Press; 2018. p. 333–42.
- 7 Kern ML, Waters LE, Adler A, White MA. A multidimensional approach to measuring well-being in students: application of the PERMA framework. *J Posit Psychol*. 2015;10(3):262–71.
- 8 Huta V, Waterman AS. Eudaimonia and its distinction from hedonia: developing a classification and terminology for understanding conceptual and operational definitions. *J Happiness Stud*. 2014;15(6):1425–56.
- 9 Ryan RM, Deci EL. On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annu Rev Psychol*. 2001;52:141–66.
- 10 Topp CW, Østergaard SD, Søndergaard S, Bech P. The WHO-5 Well-Being Index: a systematic review of the literature. *Psychother Psychosom*. 2015;84(3):167–76.
- 11 Organization for Economic Cooperation and Development. OECD guidelines on measuring subjective well-being. Paris: OECD; 2013.
- 12 Sears LE, Agrawal S, Sidney JA, Castle PH, Rula EY, Coberley CR, et al. The Well-Being 5: development and validation of a diagnostic instrument to improve population well-being. *Popul Health Manag*. 2014;17(6):357–65.
- 13 Adamson P. Child well-being in rich countries: a comparative overview [Internet]. Florence (Italy): UNICEF Office of Research; 2013 [cited 2019 Mar 28]. Available from: https://www.unicef-irc.org/publications/pdf/rc11_eng.pdf
- 14 Stengård E, Appelqvist-Schmidlechner K. Mental health promotion in young people—an investment for the future [Internet]. Copenhagen: World Health Organization; 2010 [cited 2019 Mar 28]. Available from: http://www.euro.who.int/__data/assets/pdf_file/0013/121135/E94270.pdf
- 15 Lerner RM, editor. *Handbook of child psychology and developmental science*. Vol. 3: Socioemotional processes. 7th ed. Lamb ME, editor. Hoboken (NJ): John Wiley and Sons; 2015.
- 16 Hagan JF, Shaw JS, Duncan PM, editors. *Bright futures: guidelines for health supervision of infants, children, and adolescents*. 4th ed. Elk Grove Village (IL): American Academy of Pediatrics; 2017.
- 17 Schor EL. Family pediatrics: report of the Task Force on the Family. *Pediatrics*. 2003;111(6 Pt 2):1541–71.
- 18 Centers for Disease Control and Prevention. *Essentials for childhood: steps to create safe, stable, nurturing relationships and environments* [Internet]. Atlanta (GA): CDC; 2014 Aug [cited 2019 Mar 28]. Available from: https://www.cdc.gov/violenceprevention/pdf/essentials_for_childhood_framework.pdf
- 19 Howell AJ, Keyes CLM, Passmore H-A. Flourishing among children and adolescents: structure and correlates of positive mental health, and interventions for its enhancement. In: Proctor C, Linley PA, editors. *Research, applications, and interventions for children and adolescents: a positive psychology perspective*. New York (NY): Springer; 2013. p. 59–79.
- 20 Lippman LH, Moore KA, McIntosh H. Positive indicators of child well-being: a conceptual framework, measures, and methodological issues. *Appl Res Qual Life*. 2011;6(4):425–49.
- 21 Moore KA, Bethell CD, Murphey D, Martin MC, Beltz M. Flourishing from the start: what is it and how can it be measured? [Internet]. Bethesda (MD): Child Trends; 2017 Mar [cited 2019 Mar 28]. (Research Brief). Available from: <https://www.childtrends.org/wp-content/uploads/2017/03/2017-16-FlourishingFromTheStart-1.pdf>
- 22 Forrest CB, Blackwell CK, Camargo CA Jr. Advancing the science of children's positive health in the National Institutes of Health Environmental Influences on Child Health Outcomes (ECHO) research program. *J Pediatr*. 2018;196:298–300.
- 23 Butler A, Patte KA, Ferro MA, Leatherdale ST. Interrelationships among depression, anxiety, flourishing, and cannabis use in youth. *Addict Behav*. 2019;89:206–15.
- 24 Schotanus-Dijkstra M, Ten Have M, Lamers SMA, de Graaf R, Bohlmeijer ET. The longitudinal relationship between flourishing mental health and incident mood, anxiety, and substance use disorders. *Eur J Public Health*. 2017;27(3):563–8.
- 25 Jones DE, Greenberg M, Crowley M. Early social-emotional functioning and public health: the relationship between kindergarten social competence and future wellness. *Am J Public Health*. 2015;105(11):2283–90.
- 26 Vergunst F, Tremblay RE, Nagin D, Algan Y, Beasley E, Park J, et al. Association of behavior in boys from low socioeconomic neighborhoods with employment earnings in adulthood. *JAMA Pediatr*. 2019 Feb 11. [Epub ahead of print].
- 27 Health Resources and Services Administration. *Child health USA 2014* [Internet]. Rockville (MD): HRSA; 2015 Mar [cited 2019 Mar 28]. Available from: <https://mchb.hrsa.gov/chusa14/dl/chusa14.pdf>
- 28 Kandasamy V, Hirai AH, Ghandour RM, Kogan MD. Parental perception of flourishing in school-aged chil-

- dren: 2011–2012 National Survey of Children's Health. *J Dev Behav Pediatr*. 2018;39(6):497–507.
- 29 Kim TE, Jang CY. The relationship between children's flourishing and being overweight. *J Exerc Rehabil*. 2018;14(4):598–605.
 - 30 Kwong TY, Hayes DK. Adverse family experiences and flourishing amongst children ages 6–17 years: 2011/12 National Survey of Children's Health. *Child Abuse Negl*. 2017;70:240–6.
 - 31 Bethell C, Gombojav N, Solloway M, Wissow L. Adverse childhood experiences, resilience, and mindfulness-based approaches: common denominator issues for children with emotional, mental, or behavioral problems. *Child Adolesc Psychiatr Clin N Am*. 2016;25(2):139–56.
 - 32 Bethell CD, Newacheck P, Hawes E, Halfon N. Adverse childhood experiences: assessing the impact on health and school engagement and the mitigating role of resilience. *Health Aff (Millwood)*. 2014;33(12):2106–15.
 - 33 Bethell CD, Newacheck PW, Fine A, Strickland BB, Antonelli RC, Wilhelm CL, et al. Optimizing health and health care systems for children with special health care needs using the life course perspective. *Matern Child Health J*. 2014;18(2):467–77.
 - 34 Hillis SD, Anda RF, Dube SR, Felitti VJ, Marchbanks PA, Macaluso M, et al. The protective effect of family strengths in childhood against adolescent pregnancy and its long-term psychosocial consequences. *Perm J*. 2010;14(3):18–27.
 - 35 Banyard V, Hamby S, Grych J. Health effects of adverse childhood events: identifying promising protective factors at the intersection of mental and physical well-being. *Child Abuse Negl*. 2017;65:88–98.
 - 36 Chen Y, Kubzansky LD, VanderWeele TJ. Parental warmth and flourishing in mid-life. *Soc Sci Med*. 2019;220:65–72.
 - 37 Schaefer LM, Howell KH, Schwartz LE, Bottomley JS, Crossnine CB. A concurrent examination of protective factors associated with resilience and posttraumatic growth following childhood victimization. *Child Abuse Negl*. 2018;85:17–27.
 - 38 Schofield TJ, Lee RD, Merrick MT. Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: a meta-analysis. *J Adolesc Health*. 2013;53(4, Suppl):S32–8.
 - 39 Masten AS. Resilience theory and research on children and families: past, present, and promise. *J Fam Theory Rev*. 2018;10(1):12–31.
 - 40 Walsh F. Applying a family resilience framework in training, practice, and research: mastering the art of the possible. *Fam Process*. 2016;55(4):616–32.
 - 41 Levi J, Fukuzawa DD, Sim S-C, Simpson P, Standish M, Kong CW, et al. Developing a common framework for assessing accountable communities for health. *Health Affairs Blog [blog on the Internet]*. 2018 Oct 24 [cited 2019 Mar 28]. Available from: <https://www.healthaffairs.org/doi/10.1377/hblog20181023.892541/full/>
 - 42 Ghandour RM, Jones JR, Lebrun-Harris LA, Minnaert J, Blumberg SJ, Fields J, et al. The design and implementation of the 2016 National Survey of Children's Health. *Matern Child Health J*. 2018;22(8):1093–102.
 - 43 To access the appendix, click on the Details tab of the article online.
 - 44 Data Resource Center for Child and Adolescent Health. 2016–2017 National Survey of Children's Health (2 years combined data set), SPSS codebook for data users, child and family health measures, national performance and outcome measures, and subgroups, version 1.0 [Internet]. Baltimore (MD): Child and Adolescent Health Measurement Initiative; 2019 Jan [cited 2019 Apr 11]. Available from: https://www.childhealthdata.org/docs/default-source/nsch-docs/spss-codebook_-2016-2017nsch_drcv1_01-11-19.pdf
 - 45 Bethell CD, Blumberg SJ, Stein RE, Strickland B, Robertson J, Newacheck PW. Taking stock of the CSHCN screener: a review of common questions and current reflections. *Acad Pediatr*. 2015;15(2):165–76.
 - 46 Bethell CD, Carle A, Hudziak J, Gombojav N, Powers K, Wade R, et al. Methods to assess adverse childhood experiences of children and families: toward approaches to promote child well-being in policy and practice. *Acad Pediatr*. 2017;17(7S):S51–69.
 - 47 Institute of Medicine, National Research Council. Strategies for scaling effective family-focused prevention interventions to promote children's cognitive, affective, and behavioral health: workshop summary. Washington (DC). National Academies Press; 2014.
 - 48 Kato N, Yanagawa T, Fujiwara T, Morawska A. Prevalence of children's mental health problems and the effectiveness of population-level family interventions. *J Epidemiol*. 2015;25(8):507–16.
 - 49 Boat TF, Land ML, Leslie LK, Hoagwood KE, Hawkins-Walsh E, McCabe MA, et al. Workforce development to enhance the cognitive, affective, and behavioral health of children and youth: opportunities and barriers in child health care training. Washington (DC): National Academy of Medicine; 2016 Nov 29.
 - 50 Leslie LK, Mehus CJ, Hawkins JD, Boat T, McCabe MA, Barkin S, et al. Primary health care: potential home for family-focused preventive interventions. *Am J Prev Med*. 2016;51(4, Suppl 2):S106–18.
 - 51 California Pan-Ethnic Health Network. Governor Newsom's budget makes important investments in health equity and prevention [Internet]. Oakland (CA): CPEHN; 2019 Jan 11 [cited 2019 Mar 28]. Available from: <https://cpehn.org/blog/201901/governor-newsom%E2%80%99s-budget-makes-important-investments-health-equity-and-prevention>
 - 52 Cené CW, Johnson BH, Wells N, Baker B, Davis R, Turchi R. A narrative review of patient and family engagement: the “foundation” of the medical “home.” *Med Care*. 2016;54(7):697–705.
 - 53 Epstein RM. What's the opposite of burnout? *J Gen Intern Med*. 2017;32(7):723–4.
 - 54 Murray M, Murray L, Donnelly M. Systematic review of interventions to improve the psychological well-being of general practitioners. *BMC Fam Pract*. 2016;17:36.

Appendix

Table of Contents

Appendix A: Methods Notes.

A1: Details about the 2016 and 2017 NSCH (2 years combined) sample size and response rate

A2: Mapping of Child Flourishing Index (CFI) and Family Resilience and Connection Index (FRCI) items to research based models and attributes for each concept.

A conceptual crosswalk between the Child Flourishing Index items and attributes of flourishing included in research models of flourishing

A conceptual crosswalk between Family Resilience and Connection Index items and attributes of family resilience and connection included in models in research

A3: Overview of psychometric analysis conducted on key variables

A4: Overview of multivariate logistic regression analyses conducted to assess the stability, sensitivity, of adjusted odds ratios

Appendix B: Definition of Measures.

Child Flourishing Index, age 6-17 years

Family Resilience Index (FRI)

Family Resilience and Connection Index (FRCI)

Adverse Childhood Experiences (ACEs) assessed in the National Survey of Children's Health (NSCH-ACEs)

School Engagement, 6-17 years

Children with Special Health Care Needs (CSHCN)

Appendix C: Findings.

Appendix Exhibit C1: State by state prevalence of flourishing in US children age 6-17 years and results of nested t-tests comparing each state to the nation

Appendix Exhibit C2: Prevalence of Child Flourishing Index and items by the Family Resilience and Connection Index scores and, age 6-17 years

Appendix Exhibit C3: Results of Sensitivity Analysis: Association between child flourishing (age 6-17 years) and adverse childhood experiences (ACEs) when the Family Resilience and Connection Index (FRCI) is or is not included in the model and when ACEs is or is not included in the model.

Appendix Exhibit C4: Distribution of US children age 6-17 years across nine categories defined by the Child Flourishing Index and Family Resilience and Connection Index (FRCI) Score

Appendix D: Regression Analysis Details: School Engagement by Child Flourishing Index Key Independent Variable.

Appendix Exhibit D1: Logistic regression analysis output: Dependent Variable: Engaged in school ("definitely true to both items"), age 6-17 years. Key Independent Variable: Child Flourishing Index

Appendix Exhibit D2: Logistic regression analysis output: Dependent Variable: Engaged in school ("definitely true to both items"), age 6-17 years. Key Independent Variable: Child Flourishing Index Items

Appendix E: Stratified Regression Analysis Details: Child Flourishing by Family Resilience and Connection Index by ACEs, Poverty, CSHCN Status

Appendix Exhibit E1: Stratified logistic regression analysis output: by Adverse Childhood Experiences. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Appendix Exhibit E2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Appendix Exhibit E3: Stratified logistic regression analysis output: by Federal Poverty Level, Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Appendix F: Stratified Regression Analysis Details: 'Parent-Child Connection' ("share ideas/talk really matter") by ACEs, Poverty, CSHCN Status

Appendix Exhibit F1: Stratified logistic regression analysis output: by Adverse Childhood Experiences (ACEs). Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Appendix Exhibit F2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Appendix Exhibit F3: Stratified logistic regression analysis output: by Federal Poverty Level Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Appendix G: Stratified Regression Analysis Details: Parent Coping ("handling the day-to-day demands of raising children") by ACEs, Poverty, CSHCN Status

Appendix Exhibit G1: Stratified logistic regression analysis output: by Adverse Childhood Experiences (ACEs). Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 Years. Key Independent Variable: Parental coping

Appendix Exhibit G2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parental coping

Appendix Exhibit G3: Stratified logistic regression analysis output: by Federal Poverty Level. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parental coping

Appendix A: Methods Notes

A1: Details about the 2016 and 2017 NSCH (2 years combined): sample size and response rate

The 2016 and 2017 NSCH used address-based sampling and was self-administered (paper or online) by the parent or guardian of a randomly selected child in a sampled household. Between July 2016 and February 2017, the 2016 NSCH sampled 364,150 households, resulting in 50,212 completed questionnaires for children ages 0-17. Between August 2017 and February 2018, the 2017 NSCH sampled 156,675 households, resulting in 21,599 completed questionnaires. Combined, the 2016-2017 NSCH data includes 71,811 completed questionnaires, of which 51,156 were completed for children ages 6-17 years. This study focuses on school age children age 6-17. For the 2016 NSCH, the weighted response rate was 40.7% and the interview completion rate, defined as the probability that a household initiating the survey will complete it, was 69.7%. For the 2017 NSCH, the weighted response rate was 37.4%, and the interview completion rate was 70.9%.

A2: Mapping of Child Flourishing Index (CFI) and Family Resilience and Connection Index (FRCI) items to research based models and attributes for each concept.

Table 1: A conceptual crosswalk between the Child Flourishing Index items and attributes of flourishing included in research models of flourishing.^{1-9, 16-18} See paper references.

Summary of six overlapping attributes of flourishing included across four researched models consulted and adapted for children’s developmental status and parent report in the selection of CFI Items ^{1-9, 16-18}	NSCH Child Flourishing Index (CFI) Items. Check mark indicate if item reflects (R), <i>contributes to</i> (C) or is a <i>precursor for</i> (P) each flourishing attribute		
	Curious & interest to learn new things	Persists - works to finish tasks begun	Regulates emotions-calm, control with challenges
Positive Emotion: e.g. happiness, optimism, hope, confidence, courage, curiosity, compassion, delight, etc.	✓ R	✓ P	✓ C
Engagement: e.g., present and actively participates in daily life activities & relationships, stays engaged with challenges	✓ R	✓ R	✓ P
Positive Relationships: e.g. seeks & sustains positive, mutual, empathic, positive social and emotional connections	✓ C	✓ C	✓ P
Meaning: e.g. maintains a sense that life has meaning, has aspirations, purpose, agency	✓ R	✓ R	✓ P
Accomplishment: e.g. builds competence, works toward goals, works to overcome challenges, strives toward purpose	✓ R	✓ R	✓ P
Self-esteem: Healthy, innate value of one’s self	✓ P	✓ P	✓ P

Table 2: A conceptual crosswalk between Family Resilience and Connection Index items and attributes of family resilience and connection included in models in research. ³⁴⁻⁴⁰ See paper references.

Summary of attributes of family resilience and connection included in researched family resilience, strengths and protective factors definitions and frameworks used in selection of FRCI Items ³⁴⁻⁴⁰	Family Resilience and Connection Index Items. Check marks indicate if an FRCI item is reflective of (R), contributes to (C) or is a precursor for (P) each framework attribute.					
	Parent copes with day to day demands	Parent-child share together well	Talk as family about problems	Know have strengths to draw on	Stay hopeful in hard times	Work together to solve problems
Parental resilience	✓ R	✓ P	✓ C	✓ R	✓ R	✓ C
Social connections	✓ C	✓ R	✓ R	✓ C	✓ C	✓ C
Parenting & child development knowledge	✓ R	✓ P	✓ C	✓ R	✓ P	✓ C
Seeks support needed	✓ C	✓ C	✓ C	✓ R	✓ R	✓ C
Collaborative problem solving	✓ C	✓ C	✓ R	✓ P	✓ P	✓ R
Open emotional expression & sense/meaning making	✓ C	✓ R	✓ R	✓ P	✓ P	✓ R

A3: Overview of psychometric analysis conducted on key variables

Even though the Child Flourishing Index (CFI) and Family Resilience and Connection Index (FRCI) are indices, and not construed as latent variables, we conducted psychometric testing typically done for scales assessing a single underlying construct. Below is a summary of findings.

Child Flourishing Index (CFI): Internal consistency (Cronbach’s alpha) of the 3-item flourishing index was .67. Principle components factor analysis resulted in a single Eigenvalue greater than 1.0 (1.87) that explained 62.5% of variance.

Family Resilience Index (FRI): Psychometric analysis shows an internal consistency (Cronbach alpha) of .89 for the four FRI items. Principle components factor analysis resulted in a single Eigenvalue greater than 1.0 (3.02) that explained 75.6% of variance.

Family Resilience and Connection Index (FRCI): Internal consistency (Cronbach’s alpha) of the 6 item FRCI was .84. Principle components factor analysis resulted in a single Eigenvalue greater than 1.0 (3.43) that explained 57.3% of variance. A second factor with an Eigenvalue of 1.00 explained an additional 16.7% of variance.

A4: Overview of multivariable logistic regression analyses conducted to assess the stability, sensitivity, of adjusted odds ratios

Logistic regression analysis was used to calculate adjusted odds ratios (AORs) estimating the relative odds of flourishing according to each variable category, adjusting for other variables. Sequential logistic regression models were conducted to assess the sensitivity of these associations to the inclusion of

other variables. Phase one included child socio-demographics. Subsequent phases included CSHCN status, FRCI, and ACEs, sequentially. Given the formative nature of the FRCI, regression models on flourishing were separately run to calculate AORs for each component of the FRCI. Finally, to assess the stability of associations between the prevalence of child flourishing and the FRCI across various subgroups, these associations were examined in stratified regressions conducted for each level of ACEs, household income assessed by Federal Poverty Level, and CSHCN status.

Appendix B: Definition of Measures

<p>Child Flourishing Index, age 6-17 years</p>	<p>This index was constructed based on the number of "definitely true" responses by parents to three survey items (possible score 0-3). Parents are asked how well each of the three items describes their child: "shows interest and curiosity in learning new things," "works to finish tasks he or she starts," and "stays calm and in control when faced with a challenge." Those children with an index of 3 were classified as flourishing ("definitely true" for all three descriptions). More information is available at the CAHMI's Data Resource Center's website http://childhealthdata.org/browse/survey?s=2&y=24&r=1</p>
<p>Family Resilience Index (FRI)</p>	<p>This index was constructed based on the number of "all of the time" responses by parents to four survey items (possible score 0-4). These items ask how often the child's family members do certain things when the family faces problems: "talk together about what to do," "work together to solve problems," "know they have strengths to draw on," and "stay hopeful even in difficult times."</p>
<p>Family Resilience and Connection Index (FRCI)</p>	<p>This index was constructed from six items (possible score 0-6). One point was assigned for each "all of the time" response by parents to the four Family Resilience Index items. Another point was assigned for each "very well" response to two additional items that asked parents how well they "share ideas or talk about things that really matter" with their child (parent-child connection) and how well they are "handling the day-to-day demands of raising children" (parental coping).</p>
<p>Adverse Childhood Experiences (ACEs)</p>	<p>Count of categories of exposure to adverse childhood experiences based on nine items assessed in the National Survey of Children's Health (NSCH): very hard to get by on income (somewhat often or very often); parent/guardian divorced or separated; parent/guardian died; parent/guardian served time in jail; child saw or heard physical violence in the home; child was a victim of violence or witnessed neighborhood violence; child lived with anyone who was mentally ill, suicidal, or severely depressed; child lived with anyone who had a problem with alcohol or drugs; and child treated or judged unfairly because of his/her race/ethnicity.⁴⁶</p>

<p>School Engagement, 6-17 years</p>	<p>Children are considered to be engaged in school if their parents reported "definitely true" reported "definitely true" to both of the following items: their child "cares about doing well in school" and "does all required homework."⁴⁴</p>
<p>Children with Special Health Care Needs (CSHCN)</p>	<p>Using the validated Children with Special Health Care Needs (CSHCN) Screener, children are classified as having an ongoing condition requiring more than routine health services.⁴⁵ The 5-item CSHCN Screener identifies children with special health needs based on the definition provided by the federal Maternal and Child Health Bureau (MCHB). CSHCN are classified as "more complex" if they qualify on one or more of the four screening criteria addressing elevated need or use of specialized services, therapies, or functional limitations. Children in this group may need or use prescription medications, but also meet one of the four other CSHCN Screener criteria. CSHCN with "less complex" needs experience chronic health conditions that are managed primarily through prescription medication.</p>

Appendix Exhibit C1: State by state prevalence of flourishing in US children age 6-17 years and results of nested t-tests comparing each state to the nation.

Nationwide: 40.3%; State Range: 29.9%-45.0%

US Prevalence (%)		40.3
LOWER than US; Statistically Significant	Mississippi	29.9
	Utah	32.0
	West Virginia	32.1
	Oklahoma	32.7
	Alaska	33.5
	Missouri	33.6
	Montana	33.9
	Idaho	34.2
	New Mexico	34.6
	Oregon	35.7
	Maine	35.7
	Indiana	35.9 ^a
	LOWER than US; Not Significant	Wyoming
Arkansas		35.8 ^a
Kentucky		35.9 ^a
Louisiana		36.1
Ohio		36.3
Michigan		37.0
Delaware		37.4
Wisconsin		37.6
South Carolina		37.7
South Dakota		37.8
Nebraska		37.9
North Dakota		38.0
New Hampshire		38.2
Colorado	38.7	

LOWER than US; Not Significant	North Carolina	38.8
	District of Columbia	38.9
	Hawaii	39.0
	Virginia	39.4
	Washington	39.4
	Vermont	39.5
	Kansas	39.5
	Rhode Island	39.8
	Iowa	40.0
	HIGHER than US; Not Significant	Georgia
Alabama		40.5
Massachusetts		40.7
Illinois		40.8
Minnesota		40.9
Arizona		41.1
Florida		41.9
Pennsylvania		42.0
Connecticut		42.1
Texas		42.1
Tennessee		42.9
New York		43.3
Maryland		44.5
Nevada	44.6	
New Jersey	44.8	
HIGHER than US; Significant	California	45.0

Source: Author's analysis of the combined 2016 and 2017 National Survey of Children's Health

^aSome state estimates of the prevalence of flourishing are not significantly different from the national prevalence while other state estimates of similar or equal size are significantly different from the national prevalence due to sample sizes in those states (e.g. Indiana vs. Kentucky).

Notes: Higher % = better performance. Statistical significance: $p < 0.05$

Appendix Exhibit C2: Prevalence of Child Flourishing Index and items by the Family Resilience and Connection Index scores and items, age 6-17 years

Children's characteristics	All children, 6-17 years, %	Child Flourishing			Prevalence of Individual Flourishing Items		
		Definitely true to 0-1 Child Flourishing Index Items, %	"Definitely true" to all 3 Child Flourishing Index Items, %		Interested and curious in learning new things, %	Works to finish tasks started, %	Stays calm and in control when faced with a challenge, %
			National, %	State range, %			
All Children, age 6-17 years (n=51,156)	100	32.6	40.3	29.9-45.0	83.1	64.4	50.3
Family Resilience and Connection Index (FRCI) [score 0-6] ('all of the time' response to each of 4 Family Resilience Index items; and 'very well' response to parent-child connection and parent coping items)****, ^a							
Met 0-1 items (n=14,501)	25.5	53.6	21.5	11.2-31.2	68.6	45.9	31.3
Met 2-3 items (n=14,355)	26.5	31.9	38.1	25.2-48.0	85.1	64.8	48.9
Met 4-6 items (n=21,966)	48.0	21.9	51.5	38.2-59.0	89.7	74.1	61.0
Family Resilience Index (FRI) ('all of the time' responses to each of 4 items)****, ^b							
All of the time to 0-1 items (n=25,510)	45.1	42.4	30.4	20.1-40.2	76.7	55.6	40.4
All of the time to 2-3 items (n=10,185)	21.0	29.3	40.7	26.4-51.2	86.5	66.3	51.9
All of the time to all 4 items (n=14,782)	33.9	21.6	53.1	38.5-61.0	89.6	75.0	62.1
Family Resilience Index (FRI) ('all or most of the time' responses to 4 items)****, ^c							
All or most of the time to 0-1 items (n=4,111)	8.6	57.0	20.2	N/A-N/A	62.4	43.5	30.3
All or most of the time to 2-3 items (n=6,888)	13.4	46.3	27.0	12.2-41.1	74.6	52.0	37.0
All or most of the time to all 4 items (n=39,478)	78.0	27.6	44.7	34.5-50.2	86.9	68.9	54.6
FRI Item #1: Family members talk together about what to do when the family faces problems****							
All of the time (n=20,749)	46.2	24.8	48.7	37.3-57.2	88.0	72.0	57.9
Most of the time (n=22,599)	39.7	34.7	36.5	24.3-43.7	83.0	61.8	47.0
None/some of the time (n=6,943)	14.1	52.8	23.2	11.9-35.0	67.5	46.5	33.6

FRI Item #2: Family members work together about what to do when the family faces problems****							
All of the time (n=20,464)	46.6	23.4	50.3	37.4-60.1	88.6	73.0	59.8
Most of the time (n=22,911)	39.8	36.3	35.1	24.6-43.9	82.5	60.7	45.3
None/some of the time (n=6,790)	13.6	53.7	21.0	7.7-34.0	66.8	46.0	31.2
FRI Item #3: Family knows they have strengths to draw on when the family faces problems****							
All of the time (n=24,223)	52.0	24.2	49.1	37.6-55.1	88.7	72.1	58.7
Most of the time (n=20,218)	36.3	37.1	34.0	22.7-46.9	81.1	59.9	44.4
None/some of the time (n=5,680)	11.7	56.3	20.0	N/A-38.3	64.4	43.7	29.8
FRI Item #4: Family stays hopeful even in difficult times when the family faces problems****							
All of the time (n=24,836)	55.6	25.2	48.2	36.0-53.4	87.6	71.1	58.2
Most of the time (n=21,954)	37.3	38.8	32.7	22.1-41.1	80.9	58.9	42.4
None/some of the time (n=3,507)	7.0	59.4	16.5	NA	59.6	39.7	27.1
Parent-Child Connection (parents and children share ideas or talk about things that really matter)****							
Very well (n=33,880)	68.5	21.8	49.9	37.9-55.2	91.1	73.6	59.1
Somewhat well (n=14,116)	27.1	49.8	23.4	13.0-29.9	70.6	48.6	34.0
Not very well or not at all well (n=2,102)	4.4	79.1	5.3		36.7	21.8	12.8
Parent Coping (how well parents handle the day to day demands of raising children)****							
Very well (n=32,932)	65.9	24.5	48.7	35.9-56.0	87.9	72.3	58.7
Somewhat well (n=17,041)	32.7	47.3	24.5	12.8-32.9	74.7	50.3	34.6
Not very well or not at all well (n=701)	1.4	65.9	16.4		61.3	32.9	21.7

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health. All estimates weighted to present the US child population* ages 6-17 years. NA: Sample size insufficient to reliably estimate difference across states for this variable.

****p<.0001 for differences in prevalence within subgroups based on chi square tests of independence

^a Family Resilience and Connection Index (FRCI) (0-6) was constructed based "all of the time" responses to each of the 4 family resilience index (0-4) questions plus 2 additional points for the following item responses: "very well" responses to "parents and children share ideas or talk about things that really matter" (parent-child connection) and "parents handle daily demands of raising children" (parental coping). See Technical Appendix B for more information on how each component of the FRCI.⁴³

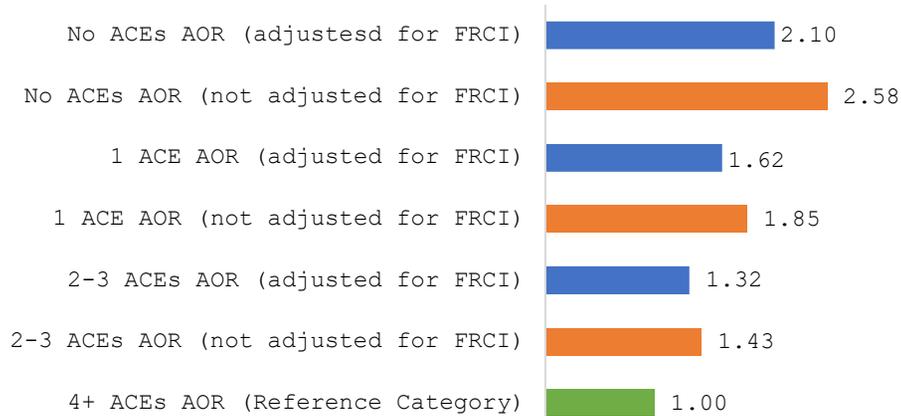
^b Family resilience index (0-4) was constructed based on the number of "all of the time" responses to four survey items. These items ask how often the child's family members do certain things when the family faces problems: talk together about what to do, work together about what to do, knows they have strengths to draw on, stay hopeful even in difficult times.

^c Family resilience index is scored based on the number of "all of the time or most of the time" responses to four survey items.

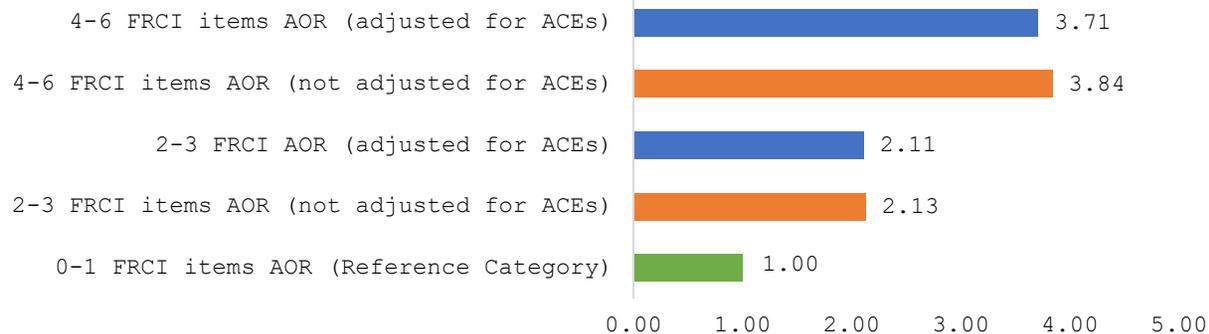
Appendix Exhibit C3: Results of Sensitivity Analysis: Association between child flourishing (age 6-17 years) and adverse childhood experiences (ACEs) when the Family Resilience and Connection Index (FRCI) is or is not included in the model and when ACEs is or is not included in the model.

AOR: Adjusted Odds Ratios. All AORs significant based on 95% confidence intervals

**AORs Flourishing by of Adverse Childhood Experiences (ACEs)
(with and without adjustment for FRCI)**



**AORs of Flourishing by Family Resilience and Connection Index (FRCI)
(with and without adjustment for ACEs)**



Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health. All AORs are statistically significant after adjusting for age, sex, race/ethnicity, income and ACEs or FRCI (where appropriate).

Appendix Exhibit C4: Distribution of the US children age 6-17 years across nine categories defined by the Child Flourishing Score and Family Resilience and Connection Index (FRCI) Score

Nine Population Subgroups (Flourishing by Family Resilience and Connection Index Score) (n) ^a	% All children age 6-17	% of children with more complex special needs ⁴⁵	% of children below Federal Poverty Level	Count of Adverse Childhood Experiences			
				None %	1 %	2-3 %	4-9 %
All Children, Age 6-17 (n=51,156)	100	12.8	21.1	49.9	25.3	17.5	7.3
Flourishing Index Score = 0-1 (n=16,585)	32.6	63.6	37.7	24.9	35.5	42.0	52.4
1. and FRCI = 0-1 (n=7,512)	13.7	30.1	15.4	9.4	14.8	18.9	24.8
2. and FRCI = 2-3 (n=4,262)	8.5	14.7	8.0	6.3	9.4	10.5	14.6
3. and FRCI = 4-6 (n=4,698)	10.5	18.8	14.3	9.2	11.3	12.5	13.0
Flourishing Index Score = 2 (n=13,419)	27.0	23.6	27.1	27.2	26.7	27.4	27.0
4. and 0-1 FRCI (n=3,758)	6.4	6.6	5.3	5.9	6.0	6.9	10.0
5. and 2-3 FRCI (n=4,077)	7.9	5.6	7.3	7.6	8.1	8.3	8.2
6. and 4-6 FRCI (n=4,077)	12.8	11.4	14.5	13.8	12.6	12.3	8.9
Flourishing Index Score = 3 (n=21,046)	40.3	12.7	35.3	47.9	37.8	30.6	20.6
7. and 0-1 FRCI (n=3,202)	5.5	2.2	3.9	5.6	5.2	5.2	4.7
8. and 2-3 FRCI (n=5,990)	10.1	3.5	9.0	11.1	10.1	8.3	6.3
9. and 4-6 FRCI (n=11,698)	24.7	7.0	22.4	31.2	22.5	17.1	9.6
Total %	100	100	100	100	100	100	100

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health.

^aTotal unweighted n for all children age 6-17 is shown only. Note unshaded cell within a column add to 100%.

Appendix Exhibit D1: Logistic regression analysis output: Dependent Variable: Engaged in school ("definitely true to both items"), age 6-17 years. Key Independent Variable: Child Flourishing Index

Independent variables	All children, age 6-17 years (%)	Engaged in school ("definitely true to both items")	
		Weighted Percent	Adjusted Odds Ratio
Age			
6-11 years (n=21,539)	50.0	71.4	REF
12-14 years (n=13,182)	24.8	64.8	0.70 (0.61 - 0.79)
15-17 years (n=16,435)	25.1	60.8	0.51 (0.45 - 0.57)
Sex			
Male (n=26,124)	51.1	60.2	0.53 (0.48 - 0.59)
Female (n=25,032)	48.9	74.4	REF
Race/Ethnicity			
Hispanic (n=5,718)	25.3	69.3	1.15 (0.98 - 1.34) ^{ns}
Black-Non-Hispanic (n=3,161)	13.8	60.3	0.96 (0.82 - 1.14) ^{ns}
Other Non-Hispanic (n=6,470)	10.0	71.0	1.22 (1.06 - 1.40)
White, Non-Hispanic (n=35,807)	50.9	67.1	REF
Household Income (Federal Poverty Level-FPL)			
0%-99% FPL (n=5,424)	21.1	61.1	0.80 (0.68 - 0.93)
100%-199% FPL (n=7,971)	22.1	64.7	0.90 (0.77 - 1.04) ^{ns}
200%-399% FPL (n=15,452)	26.5	66.2	0.84 (0.75 - 0.94)
400%+ FPL (n=22,309)	30.3	73.4	REF
Children with Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status			
Non-CSHCN (n=37,276)	77.3	72.8	1.78 (1.56 - 2.04)
CSHCN with less complex needs (n=4,569)	6.9	66.5	1.65 (1.35 - 2.01)
CSHCN with more complex needs (n=9,311)	15.8	39.8	REF
Adverse Childhood Experiences (ACEs)			
No ACEs (n=27,630)	49.9	75.4	1.93 (1.59 - 2.36)
1 ACE (n=11,694)	25.3	64.4	1.47 (1.20 - 1.80)
2-3 ACEs (n=7,966)	17.5	56.2	1.22 (1.00 - 1.50)
4-9 (4+) ACEs (n=3,179)	7.3	45.5	REF
Child Flourishing Index (CFI) Scores			
Definitely true to all 3 items (n=21,046)	40.3	89.4	14.19 (12.42 - 16.21)
Definitely true to 2 items (n=13,419)	27.0	73.6	4.97 (4.39 - 5.61)
Definitely true to 0-1 items (n=16,585)	32.6	33.2	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit D2: Logistic regression analysis output: Dependent Variable: Engaged in school (“definitely true to both items”), age 6-17 years. Key Independent Variable: Child Flourishing Index Items

Independent variables	Adjusted odds ratio (AOR)		
	Interested and curious in learning new things	Works to finish tasks started	Stays calm and in control when faced with a challenge
Age			
6-11 years (n=21,539)	REF	REF	REF
12-14 years (n=13,182)	0.89 (0.79 - 1.01)	0.69 (0.61 - 0.79)	0.67 (0.59 - 0.75)
15-17 years (n=16,435)	0.78 (0.70 - 0.88)	0.51 (0.45 - 0.58)	0.50 (0.44 - 0.56)
Sex			
Male (n=26,124)	0.53 (0.48 - 0.58)	0.54 (0.49 - 0.60)	0.50 (0.45 - 0.55)
Female (n=25,032)	REF	REF	REF
Race/Ethnicity			
Hispanic (n=5,718)	1.27 (1.09 - 1.47)	1.15 (0.98 - 1.35) ^{ns}	1.14 (0.99 - 1.32) ^{ns}
Black-Non-Hispanic (n=3,161)	1.06 (0.90 - 1.25) ^{ns}	1.04 (0.89 - 1.23) ^{ns}	0.95 (0.81 - 1.13) ^{ns}
Other Non-Hispanic (n=6,470)	1.24 (1.09 - 1.42)	1.26 (1.09 - 1.45)	1.15 (1.01 - 1.31)
White, Non-Hispanic (n=35,807)	REF	REF	REF
Household Income (Federal Poverty Level-FPL)			
0%-99% FPL (n=5,424)	0.80 (0.69 - 0.93)	0.79 (0.67 - 0.92)	0.74 (0.64 - 0.86)
100%-199% FPL (n=7,971)	0.85 (0.74 - 0.98)	0.88 (0.76 - 1.02)	0.80 (0.70 - 0.92)
200%-399% FPL (n=15,452)	0.80 (0.72 - 0.90)	0.85 (0.75 - 0.95)	0.80 (0.72 - 0.90)
400%+ FPL (n=22,309)	REF	REF	REF
Children with Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status			
Non-CSHCN (n=37,276)	2.78 (2.44 - 3.18)	2.09 (1.83 - 2.40)	2.32 (2.03 - 2.64)
CSHCN with less complex needs (n=4,569)	2.27 (1.87 - 2.75)	1.95 (1.61 - 2.38)	2.02 (1.67 - 2.44)
CSHCN with more complex needs (n=9,311)	REF	REF	REF
Adverse Childhood Experiences (ACEs)			
No ACEs (n=27,630)	2.46 (2.04 - 2.98)	1.99 (1.63 - 2.43)	2.13 (1.75 - 2.58)
1 ACE (n=11,694)	1.66 (1.37 - 2.02)	1.56 (1.27 - 1.92)	1.47 (1.20 - 1.79)
2-3 ACEs (n=7,966)	1.34 (1.10 - 1.64)	1.24 (1.01 - 1.52)	1.23 (1.00 - 1.51)
4-9 (4+) ACEs (n=3,179)	REF		REF
Child Flourishing Index Items			
Definitely true	5.98 (5.24 - 6.83)	9.02 (8.12 - 10.03)	3.98 (3.58 - 4.43)
Somewhat true or not true	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit E1: Stratified logistic regression analysis output: by Adverse Childhood Experiences. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)			
			No ACEs	1 ACE	2-3 ACES	4 or more (4-9) ACES
Age						
6-11 years (n=21,539)	50.0	REF	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.26 (1.12 - 1.41)	1.25 (1.07 - 1.46)	1.15 (0.90 - 1.45)	1.45 (1.11 - 1.90)	1.43 (0.85 - 2.42)
15-17 years (n=16,435)	25.1	1.51 (1.35 - 1.68)	1.50 (1.30 - 1.73)	1.38 (1.10 - 1.74)	1.63 (1.26 - 2.11)	1.93 (1.21 - 3.07)
Sex						
Male (n=26,124)	51.1	0.81 (0.74 - 0.89)	0.79 (0.70 - 0.90)	0.82 (0.68 - 1.00)	0.86 (0.69 - 1.08)	0.81 (0.54 - 1.22)
Female (n=25,032)	48.9	REF	REF	REF	REF	REF
Race/Ethnicity						
Hispanic (n=5,718)	25.3	1.05 (0.92 - 1.21)	1.02 (0.84 - 1.25)	0.91 (0.69 - 1.19)	1.24 (0.92 - 1.67)	1.80 (1.06 - 3.08)
Black-Non-Hispanic (n=3,161)	13.8	0.93 (0.80 - 1.08)	0.93 (0.73 - 1.18)	0.94 (0.72 - 1.24)	0.94 (0.70 - 1.27)	0.85 (0.49 - 1.49)
Other Non-Hispanic (n=6,470)	10.0	1.13 (0.99 - 1.28)	1.14 (0.98 - 1.33)	0.90 (0.69 - 1.18)	1.54 (1.04 - 2.27)	1.16 (0.63 - 2.15)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)						
0%-99% FPL (n=5,424)	21.1	0.71 (0.61 - 0.82)	0.77 (0.60 - 0.98)	0.64 (0.48 - 0.85)	0.65 (0.47 - 0.88)	0.99 (0.49 - 2.00)
100%-199% FPL (n=7,971)	22.1	0.73 (0.64 - 0.84)	0.77 (0.63 - 0.93)	0.71 (0.55 - 0.91)	0.57 (0.41 - 0.77)	1.33 (0.65 - 2.74)
200%-399% FPL (n=15,452)	26.5	0.77 (0.70 - 0.85)	0.76 (0.67 - 0.87)	0.70 (0.57 - 0.87)	0.88 (0.67 - 1.16)	0.81 (0.40 - 1.64)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status						
Non-CSHCN (n=37,276)	77.3	4.64 (4.03 - 5.34)	4.36 (3.57 - 5.33)	4.95 (3.66 - 6.69)	4.46 (3.30 - 6.01)	6.47 (3.98 - 10.52)
CSHCN with less complex needs (n=4,569)	6.9	4.04 (3.36 - 4.85)	3.86 (2.98 - 5.00)	4.60 (3.11 - 6.81)	3.46 (2.28 - 5.25)	5.58 (2.75 - 11.33)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)						
No ACEs (n=27,630)	49.9	2.10 (1.67 - 2.65)	N/A	N/A	N/A	N/A
1 ACE (n=11,694)	25.3	1.62 (1.28 - 2.06)	N/A	N/A	N/A	N/A
2-3 ACEs (n=7,966)	17.5	1.32 (1.04 - 1.68)	N/A	N/A	N/A	N/A
4-9 (4+) ACEs (n=3,179)	7.3	REF	N/A	N/A	N/A	N/A
Family Resilience and Connection (all of the time response to 4 family resilience items, share ideas very well, and parents cope very well)						
Met 4-6 items (n=21,966)	48.0	3.71 (3.31 - 4.15)	3.74 (3.20 - 4.38)	3.88 (3.08 - 4.88)	3.72 (2.88 - 4.82)	3.15 (1.94 - 5.12)
Met 2-3 items (n=14,355)	26.5	2.11 (1.87 - 2.39)	2.06 (1.74 - 2.44)	2.24 (1.75 - 2.87)	2.15 (1.61 - 2.88)	1.91 (1.12 - 3.26)
Met 0-1 items (n=14,501)	25.5	REF	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit E2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)		
			CSHCN with more complex needs	CSHCN with less complex needs	Non-CSHCN
Age					
6-11 years (n=21,539)	50.0	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.26 (1.12 - 1.41)	1.50 (1.07 - 2.11)	1.32 (0.95 - 1.82)	1.24 (1.09 - 1.41)
15-17 years (n=16,435)	25.1	1.51 (1.35 - 1.68)	1.53 (1.16 - 2.01)	1.99 (1.51 - 2.62)	1.48 (1.31 - 1.68)
Sex					
Male (n=26,124)	51.1	0.81 (0.74 - 0.89)	0.70 (0.54 - 0.91)	0.68 (0.53 - 0.87)	0.84 (0.75 - 0.93)
Female (n=25,032)	48.9	REF	REF	REF	REF
Race/Ethnicity					
Hispanic (n=5,718)	25.3	1.05 (0.92 - 1.21)	0.71 (0.48 - 1.06)	3.12 (2.08 - 4.70)	1.00 (0.86 - 1.17)
Black-Non-Hispanic (n=3,161)	13.8	0.93 (0.80 - 1.08)	0.81 (0.51 - 1.27)	1.37 (0.91 - 2.04)	0.91 (0.77 - 1.08)
Other Non-Hispanic (n=6,470)	10.0	1.13 (0.99 - 1.28)	1.18 (0.84 - 1.65)	1.51 (1.03 - 2.21)	1.10 (0.96 - 1.27)
White, Non-Hispanic (n=35,807)	50.9	REF			
Household Income (Federal Poverty Level-FPL)					
0%-99% FPL (n=5,424)	21.1	0.71 (0.61 - 0.82)	0.76 (0.50 - 1.14)	0.64 (0.43 - 0.97)	0.71 (0.60 - 0.84)
100%-199% FPL (n=7,971)	22.1	0.73 (0.64 - 0.84)	0.74 (0.49 - 1.11)	0.56 (0.38 - 0.82)	0.75 (0.65 - 0.87)
200%-399% FPL (n=15,452)	26.5	0.77 (0.70 - 0.85)	0.82 (0.61 - 1.11)	0.71 (0.54 - 0.95)	0.77 (0.69 - 0.86)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status					
Non-CSHCN (n=37,276)	77.3	4.64 (4.03 - 5.34)	N/A	N/A	N/A
CSHCN with less complex needs (n=4,569)	6.9	4.04 (3.36 - 4.85)	N/A	N/A	N/A
CSHCN with more complex needs (n=9,311)	15.8	REF	N/A	N/A	N/A
Adverse Childhood Experiences (ACEs)					
No ACEs (n=27,630)	49.9	2.10 (1.67 - 2.65)	2.99 (1.86 - 4.82)	2.41 (1.23 - 4.72)	1.98 (1.50 - 2.62)
1 ACE (n=11,694)	25.3	1.62 (1.28 - 2.06)	2.06 (1.23 - 3.45)	1.81 (0.91 - 3.60)	1.54 (1.16 - 2.05)
2-3 ACEs (n=7,966)	17.5	1.32 (1.04 - 1.68)	1.87 (1.15 - 3.07)	1.24 (0.61 - 2.53)	1.26 (0.94 - 1.69)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF
Family Resilience and Connection (all of the time response to 4 family resilience items, share ideas very well, and parents cope very well)					
Met 4-6 items (n=21,966)	48.0	3.71 (3.31 - 4.15)	3.69 (2.75 - 4.95)	5.70 (4.05 - 8.03)	3.58 (3.15 - 4.07)
Met 2-3 items (n=14,355)	26.5	2.11 (1.87 - 2.39)	2.84 (2.08 - 3.88)	3.86 (2.69 - 5.53)	1.95 (1.70 - 2.24)
Met 0-1 items (n=14,501)	25.5	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit E3: Stratified logistic regression analysis output: by Federal Poverty Level, Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Family Resilience and Connection Index (FRCI)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)			
			0-99% FPL	100-199% FPL	200-399% FPL	400% or more FPL
Age						
6-11 years (n=21,539)	50.0	REF	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.26 (1.12 - 1.41)	1.11 (0.82 - 1.50)	1.03 (0.76 - 1.38)	1.66 (1.34 - 2.06)	1.27 (1.09 - 1.46)
15-17 years (n=16,435)	25.1	1.51 (1.35 - 1.68)	1.27 (0.93 - 1.74)	1.17 (0.89 - 1.53)	1.76 (1.45 - 2.14)	1.73 (1.51 - 1.99)
Sex						
Male (n=26,124)	51.1	0.81 (0.74 - 0.89)	0.98 (0.75 - 1.27)	0.90 (0.71 - 1.14)	0.71 (0.60 - 0.84)	0.76 (0.67 - 0.85)
Female (n=25,032)	48.9	REF	REF	REF	REF	REF
Race/Ethnicity						
Hispanic (n=5,718)	25.3	1.05 (0.92 - 1.21)	1.15 (0.85 - 1.56)	0.97 (0.72 - 1.29)	1.08 (0.83 - 1.42)	1.10 (0.87 - 1.39)
Black-Non-Hispanic (n=3,161)	13.8	0.93 (0.80 - 1.08)	0.90 (0.67 - 1.22)	1.13 (0.83 - 1.54)	0.90 (0.70 - 1.18)	0.82 (0.61 - 1.09)
Other Non-Hispanic (n=6,470)	10.0	1.13 (0.99 - 1.28)	1.22 (0.83 - 1.79)	1.27 (0.93 - 1.75)	1.03 (0.83 - 1.27)	1.10 (0.93 - 1.31)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)						
0%-99% FPL (n=5,424)	21.1	0.71 (0.61 - 0.82)	N/A	N/A	N/A	N/A
100%-199% FPL (n=7,971)	22.1	0.73 (0.64 - 0.84)	N/A	N/A	N/A	N/A
200%-399% FPL (n=15,452)	26.5	0.77 (0.70 - 0.85)	N/A	N/A	N/A	N/A
400%+ FPL (n=22,309)	30.3	REF	N/A	N/A	N/A	N/A
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status						
Non-CSHCN (n=37,276)	77.3	4.64 (4.03 - 5.34)	4.79 (3.35 - 6.84)	5.15 (3.53 - 7.53)	4.50 (3.56 - 5.70)	4.50 (3.70 - 5.48)
CSHCN with less complex needs (n=4,569)	6.9	4.04 (3.36 - 4.85)	4.90 (3.01 - 7.97)	3.97 (2.43 - 6.49)	3.79 (2.76 - 5.18)	3.85 (2.99 - 4.96)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)						
No ACEs (n=27,630)	49.9	2.10 (1.67 - 2.65)	2.09 (1.36 - 3.22)	1.58 (1.01 - 2.49)	2.71 (1.92 - 3.84)	2.94 (1.58 - 5.46)
1 ACE (n=11,694)	25.3	1.62 (1.28 - 2.06)	1.44 (0.93 - 2.22)	1.24 (0.78 - 1.97)	2.06 (1.43 - 2.97)	2.46 (1.31 - 4.59)
2-3 ACEs (n=7,966)	17.5	1.32 (1.04 - 1.68)	1.23 (0.80 - 1.88)	0.81 (0.51 - 1.30)	2.06 (1.42 - 2.99)	1.95 (1.02 - 3.72)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF	REF
Family Resilience and Connection (all of the time response to 4 family resilience items, share ideas very well, and parents cope very well)						
Met 4-6 items (n=21,966)	48.0	3.71 (3.31 - 4.15)	3.86 (2.70 - 5.52)	3.84 (2.84 - 5.19)	3.72 (3.08 - 4.51)	3.67 (3.17 - 4.26)
Met 2-3 items (n=14,355)	26.5	2.11 (1.87 - 2.39)	2.96 (1.98 - 4.44)	1.85 (1.35 - 2.55)	1.92 (1.57 - 2.35)	2.06 (1.76 - 2.42)
Met 0-1 items (n=14,501)	25.5	REF	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit F1: Stratified logistic regression analysis output: by Adverse Childhood Experiences (ACEs). Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI), 6-17 years		
			No ACEs	1 ACE	2 or more (2-9) ACEs
Age					
6-11 years (n=21,539)	50.0	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.31 (1.17 - 1.47)	1.29 (1.10 - 1.51)	1.19 (0.94 - 1.51)	1.52 (1.20 - 1.93)
15-17 years (n=16,435)	25.1	1.68 (1.51 - 1.87)	1.64 (1.42 - 1.89)	1.59 (1.27 - 2.00)	1.88 (1.50 - 2.36)
Sex					
Male (n=26,124)	51.1	0.84 (0.76 - 0.92)	0.82 (0.72 - 0.93)	0.86 (0.71 - 1.04)	0.84 (0.69 - 1.02)
Female (n=25,032)	48.9	REF	REF	REF	REF
Race/Ethnicity					
Hispanic (n=5,718)	25.3	1.15 (1.00 - 1.32)	1.16 (0.95 - 1.42)	0.97 (0.74 - 1.27)	1.37 (1.05 - 1.79)
Black-Non-Hispanic (n=3,161)	13.8	1.03 (0.89 - 1.20)	1.03 (0.80 - 1.31)	1.07 (0.81 - 1.40)	0.99 (0.76 - 1.30)
Other Non-Hispanic (n=6,470)	10.0	1.18 (1.04 - 1.34)	1.22 (1.04 - 1.43)	0.96 (0.75 - 1.23)	1.36 (0.97 - 1.90)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)					
0%-99% FPL (n=5,424)	21.1	0.77 (0.66 - 0.90)	0.85 (0.66 - 1.09)	0.70 (0.52 - 0.92)	0.74 (0.55 - 0.97)
100%-199% FPL (n=7,971)	22.1	0.77 (0.68 - 0.88)	0.81 (0.67 - 0.98)	0.78 (0.60 - 1.01)	0.65 (0.49 - 0.87)
200%-399% FPL (n=15,452)	26.5	0.78 (0.70 - 0.86)	0.77 (0.68 - 0.88)	0.73 (0.59 - 0.91)	0.84 (0.65 - 1.08)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status					
Non-CSHCN (n=37,276)	77.3	4.04 (3.51 - 4.65)	3.83 (3.13 - 4.69)	4.36 (3.20 - 5.95)	4.32 (3.38 - 5.53)
CSHCN with less complex needs (n=4,569)	6.9	3.38 (2.81 - 4.07)	3.22 (2.49 - 4.17)	3.76 (2.54 - 5.58)	3.51 (2.47 - 5.01)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)					
No ACEs (n=27,630)	49.9	2.32 (1.86 - 2.91)	N/A	N/A	N/A
1 ACE (n=11,694)	25.3	1.72 (1.36 - 2.16)	N/A	N/A	N/A
2-3 ACEs (n=7,966)	17.5	1.35 (1.06 - 1.70)	N/A	N/A	N/A
4-9 (4+) ACEs (n=3,179)	7.3	REF	N/A	N/A	N/A
Parents and children share ideas or talk about things that really matter					
Very well (n=33,880)	68.5	12.55 (8.32 - 18.93)	11.75 (7.20 - 19.16)	8.40 (3.76 - 18.74)	29.59 (13.40 - 65.32)
Somewhat well (n=14,116)	27.1	3.90 (2.56 - 5.92)	3.78 (2.28 - 6.25)	2.43 (1.07 - 5.52)	8.97 (4.02 - 20.02)
Not very well or not at all well (n=2,102)	4.4	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit F2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)		
			CSHCN with more complex needs	CSHCN with less complex needs	Non-CSHCN
Age					
6-11 years (n=21,539)	50.0	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.31 (1.17 - 1.47)	1.57 (1.11 - 2.22)	1.30 (0.94 - 1.78)	1.29 (1.14 - 1.47)
15-17 years (n=16,435)	25.1	1.68 (1.51 - 1.87)	1.62 (1.22 - 2.13)	2.09 (1.59 - 2.77)	1.66 (1.46 - 1.87)
Sex					
Male (n=26,124)	51.1	0.84 (0.76 - 0.92)	0.79 (0.61 - 1.03)	0.70 (0.54 - 0.90)	0.85 (0.77 - 0.95)
Female (n=25,032)	48.9	REF	REF	REF	REF
Race/Ethnicity					
Hispanic (n=5,718)	25.3	1.15 (1.00 - 1.32)	0.80 (0.53 - 1.20)	3.31 (2.22 - 4.93)	1.10 (0.94 - 1.28)
Black-Non-Hispanic (n=3,161)	13.8	1.03 (0.89 - 1.20)	0.94 (0.60 - 1.46)	1.44 (0.96 - 2.18)	1.01 (0.85 - 1.20)
Other Non-Hispanic (n=6,470)	10.0	1.18 (1.04 - 1.34)	1.17 (0.82 - 1.69)	1.33 (0.91 - 1.95)	1.17 (1.01 - 1.34)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)					
0%-99% FPL (n=5,424)	21.1	0.77 (0.66 - 0.90)	0.80 (0.53 - 1.21)	0.66 (0.44 - 1.00)	0.78 (0.66 - 0.93)
100%-199% FPL (n=7,971)	22.1	0.77 (0.68 - 0.88)	0.74 (0.49 - 1.12)	0.63 (0.43 - 0.91)	0.79 (0.68 - 0.92)
200%-399% FPL (n=15,452)	26.5	0.78 (0.70 - 0.86)	0.81 (0.60 - 1.09)	0.73 (0.55 - 0.97)	0.78 (0.70 - 0.88)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status					
CSHCN with more complex needs (n=9,311)	15.8	4.04 (3.51 - 4.65)	N/A	N/A	N/A
CSHCN with less complex needs (n=4,569)	6.9	3.38 (2.81 - 4.07)	N/A	N/A	N/A
Non-CSHCN (n=37,276)	77.3	REF	N/A	N/A	N/A
Adverse Childhood Experiences (ACEs)					
No ACEs (n=27,630)	49.9	2.32 (1.86 - 2.91)	3.09 (1.90 - 5.02)	2.08 (1.10 - 3.96)	2.24 (1.72 - 2.93)
1 ACE (n=11,694)	25.3	1.72 (1.36 - 2.16)	2.08 (1.23 - 3.52)	1.46 (0.75 - 2.83)	1.66 (1.26 - 2.19)
2-3 ACEs (n=7,966)	17.5	1.35 (1.06 - 1.70)	1.87 (1.14 - 3.07)	1.05 (0.53 - 2.07)	1.30 (0.98 - 1.72)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF
Parents and children share ideas or talk about things that really matter					
Very well (n=33,880)	68.5	12.55 (8.32 - 18.93)	19.11 (9.47 - 38.57)	20.25 (8.46 - 48.46)	10.72 (6.46 - 17.78)
Somewhat well (n=14,116)	27.1	3.90 (2.56 - 5.92)	4.59 (2.23 - 9.43)	4.05 (1.64 - 10.01)	3.53 (2.11 - 5.90)
Not very well or not at all well (n=2,102)	4.4	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit F3: Stratified logistic regression analysis output: by Federal Poverty Level Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parent-Child Connection (share ideas/talk very well)

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI), 6-17 years			
			0-99% FPL	100-199% FPL	200-399% FPL	400% or more FPL
Age						
6-11 years (n=21,539)	50.0	REF	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.31 (1.17 - 1.47)	1.11 (0.81 - 1.52)	1.07 (0.80 - 1.43)	1.71 (1.37 - 2.13)	1.34 (1.16 - 1.55)
15-17 years (n=16,435)	25.1	1.68 (1.51 - 1.87)	1.44 (1.05 - 1.98)	1.25 (0.96 - 1.63)	1.94 (1.60 - 2.37)	1.95 (1.70 - 2.24)
Sex						
Male (n=26,124)	51.1	0.84 (0.76 - 0.92)	0.99 (0.76 - 1.30)	0.94 (0.75 - 1.18)	0.74 (0.62 - 0.87)	0.77 (0.68 - 0.87)
Female (n=25,032)	48.9	REF	REF	REF	REF	REF
Race/Ethnicity						
Hispanic (n=5,718)	25.3	1.15 (1.00 - 1.32)	1.25 (0.91 - 1.70)	1.07 (0.81 - 1.42)	1.17 (0.88 - 1.55)	1.19 (0.94 - 1.51)
Black-Non-Hispanic (n=3,161)	13.8	1.03 (0.89 - 1.20)	1.01 (0.75 - 1.37)	1.14 (0.83 - 1.56)	0.99 (0.76 - 1.28)	0.99 (0.74 - 1.33)
Other Non-Hispanic (n=6,470)	10.0	1.18 (1.04 - 1.34)	1.27 (0.85 - 1.89)	1.30 (0.94 - 1.81)	1.11 (0.89 - 1.37)	1.16 (0.99 - 1.37)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)						
0%-99% FPL (n=5,424)	21.1	0.77 (0.66 - 0.90)	N/A	N/A	N/A	N/A
100%-199% FPL (n=7,971)	22.1	0.77 (0.68 - 0.88)	N/A	N/A	N/A	N/A
200%-399% FPL (n=15,452)	26.5	0.78 (0.70 - 0.86)	N/A	N/A	N/A	N/A
400%+ FPL (n=22,309)	30.3	REF	N/A	N/A	N/A	N/A
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status						
Non-CSHCN (n=37,276)	77.3	4.04 (3.51 - 4.65)	3.98 (2.79 - 5.67)	4.41 (2.98 - 6.53)	3.97 (3.12 - 5.04)	4.00 (3.30 - 4.85)
CSHCN with less complex needs (n=4,569)	6.9	3.38 (2.81 - 4.07)	3.78 (2.33 - 6.14)	3.46 (2.10 - 5.68)	3.26 (2.37 - 4.50)	3.25 (2.54 - 4.16)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)						
No ACEs (n=27,630)	49.9	2.32 (1.86 - 2.91)	2.35 (1.56 - 3.53)	1.90 (1.21 - 3.00)	2.85 (2.02 - 4.02)	3.02 (1.68 - 5.42)
1 ACE (n=11,694)	25.3	1.72 (1.36 - 2.16)	1.50 (0.99 - 2.27)	1.45 (0.91 - 2.32)	2.10 (1.47 - 3.00)	2.36 (1.30 - 4.27)
2-3 ACEs (n=7,966)	17.5	1.35 (1.06 - 1.70)	1.28 (0.86 - 1.91)	0.87 (0.54 - 1.40)	1.99 (1.39 - 2.86)	1.88 (1.02 - 3.49)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF	REF
Parents and children share ideas or talk about things that really matter						
Very well (n=33,880)	68.5	12.55 (8.32 - 18.93)	25.12 (11.29 - 55.87)	24.35 (9.32 - 63.64)	10.03 (5.55 - 18.13)	7.63 (3.83 - 15.17)
Somewhat well (n=14,116)	27.1	3.90 (2.56 - 5.92)	8.02 (3.48 - 18.49)	7.05 (2.65 - 18.75)	3.11 (1.70 - 5.68)	2.41 (1.20 - 4.82)
Not very well or not at all well (n=2,102)	4.4	REF	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit G1: Stratified logistic regression analysis output: by Adverse Childhood Experiences (ACEs). Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 Years. Key Independent Variable: Parental coping

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI), 6-17 years		
			No ACEs	1 ACE	2 or more (2-9) ACEs
Age					
6-11 years (n=21,539)	50.0	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.18 (1.05 - 1.32)	1.19 (1.02 - 1.38)	1.05 (0.83 - 1.33)	1.35 (1.06 - 1.72)
15-17 years (n=16,435)	25.1	1.37 (1.23 - 1.52)	1.35 (1.17 - 1.56)	1.23 (0.98 - 1.55)	1.57 (1.25 - 1.97)
Sex					
Male (n=26,124)	51.1	0.82 (0.74 - 0.90)	0.81 (0.71 - 0.91)	0.81 (0.67 - 0.99)	0.85 (0.70 - 1.03)
Female (n=25,032)	48.9	REF	REF	REF	REF
Race/Ethnicity					
Hispanic (n=5,718)	25.3	1.13 (0.98 - 1.30)	1.10 (0.90 - 1.34)	0.99 (0.75 - 1.30)	1.41 (1.08 - 1.84)
Black-Non-Hispanic (n=3,161)	13.8	0.98 (0.85 - 1.14)	1.00 (0.78 - 1.28)	0.97 (0.75 - 1.27)	0.98 (0.75 - 1.28)
Other Non-Hispanic (n=6,470)	10.0	1.16 (1.02 - 1.31)	1.16 (1.00 - 1.36)	0.90 (0.69 - 1.17)	1.44 (1.03 - 2.00)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)					
0%-99% FPL (n=5,424)	21.1	0.70 (0.60 - 0.81)	0.71 (0.56 - 0.90)	0.68 (0.51 - 0.90)	0.67 (0.50 - 0.89)
100%-199% FPL (n=7,971)	22.1	0.74 (0.65 - 0.85)	0.78 (0.64 - 0.95)	0.74 (0.57 - 0.96)	0.66 (0.50 - 0.88)
200%-399% FPL (n=15,452)	26.5	0.78 (0.71 - 0.87)	0.78 (0.68 - 0.89)	0.73 (0.59 - 0.90)	0.85 (0.66 - 1.11)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status					
Non-CSHCN (n=37,276)	77.3	4.53 (3.94 - 5.22)	4.12 (3.39 - 5.00)	5.06 (3.69 - 6.94)	4.94 (3.85 - 6.33)
CSHCN with less complex needs (n=4,569)	6.9	3.81 (3.17 - 4.58)	3.45 (2.67 - 4.45)	4.44 (3.00 - 6.57)	3.99 (2.80 - 5.70)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)^{d*}					
No ACEs (n=27,630)	49.9	2.11 (1.68 - 2.65)	N/A	N/A	N/A
1 ACE (n=11,694)	25.3	1.64 (1.30 - 2.08)	N/A	N/A	N/A
2-3 ACEs (n=7,966)	17.5	1.34 (1.05 - 1.70)	N/A	N/A	N/A
4-9 (4+) ACEs (n=3,179)	7.3	REF	N/A	N/A	N/A
Parental coping with daily demands of raising children					
Very well (n=32,932)	65.9	3.56 (1.94 - 6.53)	1.85 (0.71 - 4.81)	3.21 (1.50 - 6.83)	22.86 (9.90 - 52.83)
Somewhat well (n=17,041)	32.7	1.32 (0.72 - 2.43)	0.61 (0.23 - 1.59)	1.25 (0.58 - 2.70)	9.86 (4.23 - 22.97)
Not very well or not at all well (n=701)	1.4	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit G2: Stratified logistic regression analysis output: by Children with Special Health Care Needs (CSHCN) Status. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parental coping

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)		
			CSHCN with more complex needs	CSHCN with less complex needs	Non-CSHCN
Age					
6-11 years (n=21,539)	50.0	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.18 (1.05 - 1.32)	1.46 (1.05 - 2.03)	1.26 (0.92 - 1.74)	1.16 (1.02 - 1.31)
15-17 years (n=16,435)	25.1	1.37 (1.23 - 1.52)	1.39 (1.05 - 1.85)	1.70 (1.29 - 2.24)	1.35 (1.19 - 1.52)
Sex					
Male (n=26,124)	51.1	0.82 (0.74 - 0.90)	0.68 (0.52 - 0.87)	0.67 (0.52 - 0.86)	0.84 (0.76 - 0.94)
Female (n=25,032)	48.9	REF	REF	REF	REF
Race/Ethnicity					
Hispanic (n=5,718)	25.3	1.13 (0.98 - 1.30)	0.78 (0.51 - 1.20)	3.20 (2.15 - 4.78)	1.08 (0.92 - 1.26)
Black-Non-Hispanic (n=3,161)	13.8	0.98 (0.85 - 1.14)	0.87 (0.56 - 1.36)	1.47 (0.98 - 2.22)	0.96 (0.81 - 1.13)
Other Non-Hispanic (n=6,470)	10.0	1.16 (1.02 - 1.31)	1.23 (0.88 - 1.73)	1.56 (1.08 - 2.24)	1.13 (0.98 - 1.30)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)					
0%-99% FPL (n=5,424)	21.1	0.70 (0.60 - 0.81)	0.73 (0.49 - 1.08)	0.61 (0.40 - 0.93)	0.70 (0.59 - 0.83)
100%-199% FPL (n=7,971)	22.1	0.74 (0.65 - 0.85)	0.66 (0.44 - 1.01)	0.54 (0.37 - 0.81)	0.77 (0.67 - 0.90)
200%-399% FPL (n=15,452)	26.5	0.78 (0.71 - 0.87)	0.80 (0.60 - 1.08)	0.74 (0.56 - 0.98)	0.79 (0.70 - 0.88)
400%+ FPL (n=22,309)	30.3	REF	REF	REF	REF
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status					
Non-CSHCN (n=37,276)	77.3	4.53 (3.94 - 5.22)	N/A	N/A	N/A
CSHCN with less complex needs (n=4,569)	6.9	3.81 (3.17 - 4.58)	N/A	N/A	N/A
CSHCN with more complex needs (n=9,311)	15.8	REF	N/A	N/A	N/A
Adverse Childhood Experiences (ACEs)					
No ACEs (n=27,630)	49.9	2.11 (1.68 - 2.65)	2.92 (1.82 - 4.70)	1.90 (1.01 - 3.57)	2.03 (1.55 - 2.67)
1 ACE (n=11,694)	25.3	1.64 (1.30 - 2.08)	1.93 (1.14 - 3.27)	1.46 (0.76 - 2.79)	1.60 (1.20 - 2.12)
2-3 ACEs (n=7,966)	17.5	1.34 (1.05 - 1.70)	1.80 (1.10 - 2.95)	1.08 (0.54 - 2.14)	1.30 (0.97 - 1.73)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF
Parental coping with daily demands of raising children					
Very well (n=32,932)	65.9	3.56 (1.94 - 6.53)	3.92 (1.23 - 12.53)	8.27 (2.44 - 28.06)	3.27 (1.60 - 6.67)
Somewhat well (n=17,041)	32.7	1.32 (0.72 - 2.43)	1.47 (0.46 - 4.71)	2.24 (0.65 - 7.75)	1.24 (0.61 - 2.54)
Not very well or not at all well (n=701)	1.4	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Appendix Exhibit G3: Stratified logistic regression analysis output: by Federal Poverty Level. Dependent Variable: Child Flourishing Index ("met all 3 items"), age 6-17 years. Key Independent Variable: Parental coping

Independent variables	Weighted Percent	All children, age 6-17 years	Adjusted Odd Ratio (95% CI)			
			0-99% FPL	100-199% FPL	200-399% FPL	400% or more FPL
Age						
6-11 years (n=21,539)	50.0	REF	REF	REF	REF	REF
12-14 years (n=13,182)	24.8	1.18 (1.05 - 1.32)	1.04 (0.77 - 1.42)	1.01 (0.76 - 1.35)	1.54 (1.25 - 1.90)	1.14 (0.98 - 1.32)
15-17 years (n=16,435)	25.1	1.37 (1.23 - 1.52)	1.18 (0.87 - 1.59)	1.04 (0.79 - 1.37)	1.63 (1.34 - 1.99)	1.54 (1.35 - 1.77)
Sex						
Male (n=26,124)	51.1	0.82 (0.74 - 0.90)	0.93 (0.72 - 1.21)	0.90 (0.71 - 1.13)	0.75 (0.63 - 0.88)	0.77 (0.68 - 0.86)
Female (n=25,032)	48.9	REF	REF	REF	REF	REF
Race/Ethnicity						
Hispanic (n=5,718)	25.3	1.13 (0.98 - 1.30)	1.14 (0.84 - 1.54)	1.05 (0.78 - 1.40)	1.20 (0.91 - 1.59)	1.20 (0.94 - 1.54)
Black-Non-Hispanic (n=3,161)	13.8	0.98 (0.85 - 1.14)	0.91 (0.67 - 1.22)	1.17 (0.86 - 1.59)	0.94 (0.73 - 1.22)	0.91 (0.67 - 1.23)
Other Non-Hispanic (n=6,470)	10.0	1.16 (1.02 - 1.31)	1.17 (0.78 - 1.75)	1.30 (0.95 - 1.77)	1.06 (0.85 - 1.31)	1.16 (0.97 - 1.38)
White, Non-Hispanic (n=35,807)	50.9	REF	REF	REF	REF	REF
Household Income (Federal Poverty Level-FPL)						
0%-99% FPL (n=5,424)	21.1	0.70 (0.60 - 0.81)	N/A	N/A	N/A	N/A
100%-199% FPL (n=7,971)	22.1	0.74 (0.65 - 0.85)	N/A	N/A	N/A	N/A
200%-399% FPL (n=15,452)	26.5	0.78 (0.71 - 0.87)	N/A	N/A	N/A	N/A
400%+ FPL (n=22,309)	30.3	REF	N/A	N/A	N/A	N/A
Children With Special Health Care Needs (CSHCN) (met CSHCN Screener Criteria) Complexity Status						
Non-CSHCN (n=37,276)	77.3	4.53 (3.94 - 5.22)	4.64 (3.27 - 6.59)	5.48 (3.69 - 8.14)	4.41 (3.50 - 5.57)	4.16 (3.40 - 5.09)
CSHCN with less complex needs (n=4,569)	6.9	3.81 (3.17 - 4.58)	4.61 (2.83 - 7.52)	3.96 (2.40 - 6.52)	3.66 (2.69 - 4.98)	3.44 (2.67 - 4.43)
CSHCN with more complex needs (n=9,311)	15.8	REF	REF	REF	REF	REF
Adverse Childhood Experiences (ACEs)						
No ACEs (n=27,630)	49.9	2.11 (1.68 - 2.65)	2.03 (1.33 - 3.09)	1.67 (1.07 - 2.62)	2.84 (2.00 - 4.03)	2.78 (1.46 - 5.30)
1 ACE (n=11,694)	25.3	1.64 (1.30 - 2.08)	1.53 (0.99 - 2.37)	1.30 (0.82 - 2.06)	2.12 (1.47 - 3.05)	2.28 (1.19 - 4.38)
2-3 ACEs (n=7,966)	17.5	1.34 (1.05 - 1.70)	1.23 (0.81 - 1.89)	0.86 (0.54 - 1.36)	2.14 (1.48 - 3.11)	1.89 (0.96 - 3.73)
4-9 (4+) ACEs (n=3,179)	7.3	REF	REF	REF	REF	REF
Parental coping with daily demands of raising children						
Very well (n=32,932)	65.9	3.56 (1.94 - 6.53)	2.84 (0.78 - 10.26)	2.32 (0.76 - 7.05)	3.04 (1.27 - 7.29)	10.53 (5.12 - 21.65)
Somewhat well (n=17,041)	32.7	1.32 (0.72 - 2.43)	1.07 (0.29 - 3.93)	0.77 (0.25 - 2.35)	1.24 (0.52 - 2.98)	3.87 (1.87 - 8.00)
Not very well or not at all well (n=701)	1.4	REF	REF	REF	REF	REF

Source: Authors' analysis of the combined 2016 and 2017 National Survey of Children's Health

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.