

Life Course Outcomes on Mental and Physical Health: The Impact of Foster Care on Adulthood

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More than 250 000 US children enter foster care every year and almost 20% of them reside in California.¹ Children living in foster care, compared with other children, disproportionately come from low-income families, are ethnic and racial minorities,² and have higher rates of physical, psychological, and social problems.³⁻⁶ The current literature suggests that the psychosocial concerns noted for some children who enter foster care persist as they get older and are manifested as severe social problems, including high rates of teen pregnancy, substance abuse, and arrests.^{7,8} Disproportionately high percentages of children who have a history of foster care, compared with those who do not, exhibit mental health problems.^{9,10}

At age 18 years, when adolescents “age out” or are emancipated from the foster care system, the newly independent young adults have very little support and encounter astonishingly high rates of unemployment and homelessness.^{11,12} Mental health, social, and other concerns appear to continue among children who have experienced foster care throughout their youth.

Although the idea that a childhood event could have adulthood risks and ramifications is not new, there is a resurgence of interest in this paradigm, as it may be possible to intervene and reduce or prevent adulthood sequelae.¹³ Almost a decade ago, a study using a sample drawn from a large Southern California managed care program (i.e., Kaiser Permanente’s Adverse Childhood Experiences or ACE) examined the prevalence of several adverse childhood events (e.g., psychological, physical, and sexual abuse) and household dysfunction (e.g., parental substance abuse, mental illness, incarceration, and domestic violence) and found a correlation between the number of adverse childhood events and several adulthood risk factors for death (e.g., smoking, obesity, depressed mood, alcoholism, and drug use).¹⁴

The life course approach, the idea that an event or injury occurring in childhood could

Objective. We compared the prevalence rates of mental health and physical health problems between adults with histories of childhood foster care and those without.

Methods. We used 2003–2005 California Health Interview Survey data (n=70 456) to test our hypothesis that adults with childhood histories of foster care will report higher rates of mental and physical health concerns, including those that affect the ability to work, than will those without.

Results. Adults with a history of childhood foster care had more than twice the odds of receiving Social Security Disability Insurance because they were unable to work owing to mental or physical health problems for the past year, even after stratifying by age and adjusting for demographic and socioeconomic characteristics.

Conclusions. Childhood foster care may be a sentinel event, signaling the increased risk of adulthood mental and physical health problems. A mental and physical health care delivery program that includes screening and treatment and ensures follow-up for children and youths who have had contact with the foster care system may decrease these individuals’ disproportionately high prevalence of poor outcomes throughout their adulthood. (*Am J Public Health.* 2012;102:534–540. doi:10.2105/AJPH.2011.300285)

manifest health risks and ramifications later in adulthood, notes that the timing of an event in the life trajectory is important. There are critical periods in a lifetime when a dramatic event at a point in childhood is more likely to have a serious effect in adulthood, but the same dramatic event may have lesser effects if it occurs at another time point. For example, some investigations have found that adults’ health status and morbidity and mortality rates were linked to their father’s job and education levels when they were children.¹⁵⁻¹⁷

Researchers studying homeless populations have found that childhood histories of foster care are correlated with the presence of adulthood mental disorders.¹⁸⁻²⁰ Yet, these studies used samples consisting of only homeless adults. Are these findings generalizable to all adults with histories of childhood foster care? We compared prevalence rates of mental health and physical health problems between 2 groups of adults: those with histories of childhood foster care and those without. Accordingly, we hypothesized that adults who have had childhood histories of foster care, compared with those who

have not, will report higher rates of mental and physical health concerns, including those that affect the ability to work.

METHODS

We used the adult interviews from the 2003 and 2005 waves of the biennial California Health Interview Survey (CHIS). CHIS is the largest statewide health survey administered in the United States. Responses were collected from almost 42 000 households in CHIS 2003 and more than 45 000 households in CHIS 2005. The data sets were created using a population-based random digit dialing methodology designed to provide representation of California’s noninstitutionalized population by county and state and all major racial/ethnic groups.²¹ To meet this last goal, interviews were conducted in 5 languages, including English, Spanish, Chinese (Mandarin and Cantonese), Vietnamese, and Korean. Additionally, the CHIS 2003 and CHIS 2005 data sets are ideal, not only because CHIS is a statewide representative sample, but also because each cross-sectional

sample includes interviews from more than 8000 Latinos and almost 2000 African Americans, the 2 minority groups overrepresented in the foster care system.

The 2003 and 2005 waves of CHIS used similar instruments with a wide array of variables, including health status, health conditions, health behaviors, women's health, cancer history and prevention, dental health, injury and violence, health care utilization and access, insurance, employment, income, public entitlement use and eligibility, food insecurity, and neighborhood and housing. Among these variables was the question

Thinking back to your childhood, that is, before your 18th birthday, were you ever removed from your home by the state, county, or court and sent to live with people other than your mother or father?

This question was asked of all adults except those who were born outside the United States and had arrived in the United States after their first birthday.

As the 2003 and 2005 CHIS waves used instruments that contained similar variables, we compared the demographic variables to examine whether the adults in the 2 waves were similar. Because experiencing childhood foster care is a relatively rare event, combining the 2 cross-sectional samples would ensure sufficient power for the analyses and increase the stability of the estimates. This technique has been employed in previous investigations that examined specific ethnic groups using CHIS data.^{22,23} Preliminary analyses indicated that there were no significant differences in the prevalence rates in the demographic variables between CHIS 2003 and 2005. Consequently, we combined the CHIS 2003 (n=34 508) and CHIS 2005 (n=35 948) cross-sectional samples and used the CHIS 2003–2005 sample (N=70 456).

We conducted all analyses using survey data analysis procedures such as the SVY commands available in Stata version 9.0 (StataCorp Lp, College Station, TX). As recommended by the creators of CHIS, we used the CHIS weights provided to produce accurate estimates of the California population. The CHIS weights take into account sample selection probabilities, potential undercoverage, nonresponse biases, and the nature of survey design.

We used logistic regression models to examine the association between the independent variable of interest, history of childhood foster care, and the dependent variable consisting of 1 of 3 types of morbidity: having mental health problems in the past 30 days, having physical health problems in the past 30 days, and receiving Social Security Disability Insurance (SSDI) or being unable to work as the result of mental or physical health problems for the past year.

Because we wanted to examine the impact of age after childhood foster care, we created models for each age group and morbidity. We grouped confounders for the models into 2 categories: demographic characteristics, including age, gender, and race/ethnicity; and social and economic variables, including education, marital status, having health insurance, and living at or below the federal poverty level (FPL). We used logistic regression with stepwise elimination for multivariable analyses with binary outcomes. We have presented odds ratios (ORs), 95% confidence intervals (CIs), and *P* values. Significance level is declared at *P*<.01, reduced from *P*<.05 because of our multiple comparisons.

RESULTS

In the total CHIS 2003–2005 sample (n=70 456), 3.4% of adults reported a history of foster care (Table 1). Approximately half were male and half were female. A third of the adults were aged 35 years or younger; and the majority self-identified as White, followed by Latino, other, and African American. In comparisons between groups of adults with and without a childhood history of foster care, we found differences by age and race/ethnicity.

For social and economic variables, half the sample was married. Only a tenth had less than a high school education. More than three quarters currently had insurance. A tenth reported incomes at or below 100% of the FPL. We noted significant differences between groups by childhood history of foster care in all the social and economic variables: marital status, education, insurance, and income. Comparisons between the 2 CHIS waves revealed no differences; consequently, we combined the data sets for the remaining analyses.

Morbidity was prevalent in many adults. Only about one quarter of the sample reported that their health status was excellent, more than half rated their health status as very good or good, and less than a fifth rated their health status as fair or poor (Table 2). Approximately a fifth of the sample reported health problems such as asthma, hypertension, being a current smoker, or consuming 5 or more drinks on 1 occasion. Less than a tenth revealed they had diabetes, stroke, heart disease or congestive heart failure, cancer, or epilepsy or another seizure disorder. Comparisons using CHIS 2003–2005 revealed significant and consistently higher prevalence rates of morbidity among adults with childhood histories of foster care, compared with those without, including asthma, diabetes, hypertension, epilepsy or seizure disorder, and being a current smoker. There were no differences between groups in the prevalence rate of having consumed 5 or more drinks per occasion.

We hypothesized that the variable of interest, having a childhood history of foster care, was associated with adulthood morbidity. The dependent variables we examined were mental health problems in the past 30 days, physical problems in the past 30 days, and receipt of SSDI or the inability to work in the past year as the result of mental or physical health problems.

Mental Health Problems

Results showed that the odds that mental health problems were reported at least 1 day in the past 30 days were higher among adults who had histories of childhood foster care (OR=1.62; 95% CI=1.42, 1.85) and for those living on annual incomes at or below the FPL (OR=1.25; 95% CI=1.15, 1.36) and less likely for those who were male (OR=0.59; 95% CI=0.56, 0.61), married (OR=0.66; 95% CI=0.64, 0.69), or had health insurance (OR=0.76; 95% CI=0.70, 0.81; Table 3).

There were some differences by age group. History of childhood foster care did not achieve statistical significance at the *P*<.01 level in the 2 youngest age groups of 18 to 25 and 26 to 35 years. Adults reporting their race/ethnicity as White were more likely to report having had a mental health problem in the past 30 days in the 3 youngest age groups of 18 to 25 (OR=1.45; 95% CI=1.27, 1.65), 26 to 35

TABLE 1—Comparison of Demographic Characteristics and Socioeconomic Variables of Adults by Childhood Histories of Foster Care: California Health Interview Survey, 2003 and 2005

Demographic Characteristics and Socioeconomic Variables	Total Sample (n=70 456), %	Childhood History of Foster Care, Year 2003		Childhood History of Foster Care, Year 2005	
		With (n=1188), %	Without (n=33 320), %	With (n=1167), %	Without (n=34 781), %
Has childhood history of foster care	3.4	3.5	0.0	3.3	0.0
Gender					
Female	50.8	50.9	49.0	53.9	50.6
Male	49.2	49.1	51.0	46.1	49.4
Age, y					
18-25	18.2***	24.2	18.3***	23.2	17.7**
26-35	18.8	20.7	18.6	19.7	19.0
36-45	19.9	19.3	20.1	19.9	19.7
46-55	17.2	14.1	17.4	16.6	17.2
56-65	11.8	12.7	11.5	10.1	12.2
>65	14.1	9.0	14.2	10.5	14.3
Ethnicity					
African American	7.5***	12.5	7.7***	12.6	7.0***
Latino	18.6	17.3	18.1	16.7	19.2
White	62.9	55.9	63.4	56.5	62.8
Other	11.0	14.4	10.8	14.2	10.9
Married	51.3***	38.3	51.6***	40.3	51.8***
Education					
<11th grade or no formal education	10.8***	24.0	11.9***	24.7	8.9***
12th grade or high school diploma	27.7	33.1	26.3	35.0	28.5
>high school diploma	61.5	42.9	61.8	40.3	62.6
Have health insurance	87.4***	81.5	87.4***	85.1	87.5
Income<100% of the federal poverty	9.6***	22.6	9.7***	19.7	8.6***

Note. Percentages are weighted; sample sizes are unweighted.

* $P < .05$; ** $P < .01$; *** $P < .001$.

(OR=1.16; 95% CI=1.04, 1.30), and 36 to 45 years (OR=1.26; 95% CI=1.13, 1.40). Unlike the total sample, having less than a high school education was associated with having reported a mental health problem in the past 30 days in the 2 oldest age groups of 56 to 65 (OR=1.47; 95% CI=1.16, 1.86) and older than 65 years (OR=1.40; 95% CI=1.19, 1.65). Being married was not significantly associated with having a mental health problem in the past 30 days for the older than 65 years group. Other differences included that having health insurance was not significantly related to having a mental health problem in the past 30 days at the $P < .01$ level for the groups aged 18 to 25, 26 to 35, 36 to 45, 46 to 55, 56 to 65, and older than 65 years. Having an income below the FPL was not significantly associated with having a mental health problem in the past

30 days for the groups aged 18 to 25, 26 to 35, and 56 to 65 years.

Physical Health Morbidity

As hypothesized, having a history of childhood foster care significantly increased the odds of having reported that physical health prohibited function at least 1 day in the past 30 days (OR=1.62; 95% CI=1.44, 1.82; Table 4). In addition, the odds were higher among adults who reported White ethnicity (OR=1.14; 95% CI=1.08, 1.20) or lived at or below the FPL (OR=1.40; 95% CI=1.27, 1.54) and lower for those who were male (OR=0.72; 95% CI=0.68, 0.75), married (OR=0.72; 95% CI=0.68, 0.76), or had health insurance (OR=0.91; 95% CI=0.84, 0.98).

There were differences by age group. Having a history of childhood foster care was not

significantly associated with reporting physical problems that prohibited daily function for at least 1 day in the past 30 days at the $P < .01$ level for the groups aged 56 to 65 and older than 65 years, nor was it significantly associated for adults reporting White ethnicity in the older than 65 years group. Having less than a high school education increased the odds of reporting physical problems that prohibited daily function for at least 1 day in the past 30 days for the older than 65 years group (OR=1.39; 95% CI=1.16, 1.66). Being married was not significantly related to reporting physical problems that prohibited daily function for at least 1 day in the past 30 days at the $P < .01$ level for the older than 65 years group. Having lived at or below the FPL was not significantly related to having reported physical problems that prohibited daily function for the

TABLE 2—Comparison of Health Status and Problems of Adults by Childhood Histories of Foster Care: California Health Interview Survey, 2003 and 2005

	Total Sample (n = 70 456), %	Childhood History of Foster Care	
		With (n = 2355), %	Without (n = 68 101), %
Health status			
Excellent	23.3***	16.6	23.6
Very good or good	60.8	55.6	61.0
Fair or poor	15.8	27.8	15.4
Health problems			
Asthma	14.5***	21.1	14.2
Diabetes	6.2**	8.4	6.2
Hypertension	24.5***	28.6	24.3
Stroke	1.9*	2.7	1.8
Heart disease or congestive heart failure	6.7*	8.1	6.7
Cancer	9.4	9.7	9.4
Epilepsy or other seizure disorder	1.4***	3.2	1.4
Current smoker	16.7***	33.4	16.1
Has had ≥5 drinks per occasion	14.4	15.8	14.3

Note. Percentages are weighted; sample sizes are unweighted.
*P < .05; **P < .01; ***P < .001.

groups aged 18 to 25, 26 to 35, and 56 to 65 years.

Inability to Work or Social Security Disability Insurance

As hypothesized, the odds of receiving SSDI or having the inability to work as the result of mental or physical health problems for the past year were higher among adults who had, compared with those who did not have,

a history of childhood foster care (OR = 2.47; 95% CI = 2.13, 2.86; Table 5). Additionally, the odds were higher among adults who reported White ethnicity (OR = 1.24; 95% CI = 1.12, 1.36), had less than a high school education (OR = 1.73; 95% CI = 1.53, 1.96), had health insurance (OR = 1.81; 95% CI = 1.56, 2.10), or were living at or below the FPL (OR = 2.81; 95% CI = 2.52, 3.13). The odds of receiving SSDI or having the inability to work

as the result of mental or physical health problems for the past year were lower among adults who were married (OR = 0.64; 95% CI = 0.59, 0.69).

As with previous models, there were differences among age groups. White ethnicity was not associated with the inability to work as the result of mental or physical health problems for the past year among the groups aged 18 to 25, 26 to 35, 36 to 45, 46 to 55, and older than 65 years. Not having a high school education was not associated with the inability to work as the result of mental or physical health problems for the past year among the groups aged 26 to 35 and 36 to 45 years. The odds for the inability to work as the result of mental or physical health problems for the past year among adults who were married and aged 18 to 25 years were not protective. Lack of health insurance was not associated with the inability to work as the result of mental or physical health problems for the past year for the groups aged 18 to 25, 26 to 35, older than 65 years. Among adults aged 18 to 25 years, there was no significant association between living at or below the FPL and receiving SSDI or having the inability to work as the result of mental or physical health problems for the past year.

DISCUSSION

Using the largest statewide representative sample of adults available in the United States, we found that a history of childhood foster care

TABLE 3—Logistic Regression Models Representing Association With Mental Health Not Good at Least 1 Day in the Past 30 Days by Age Group: California Health Interview Survey, 2003 and 2005

Variables	Total Sample (n = 70 456), OR (95% CI)	Aged 18-25 Years (n = 6573), OR (95% CI)	Aged 26-35 Years (n = 9571), OR (95% CI)	Aged 36-45 Years (n = 13 317), OR (95% CI)	Aged 46-55 Years (n = 14 464), OR (95% CI)	Aged 56-65 Years (n = 11 615), OR (95% CI)	Aged > 65 Years (n = 14 916), OR (95% CI)
Foster care	1.62*** (1.42, 1.85)	1.41* (1.02, 1.94)	1.32 (0.98, 1.77)	1.64** (1.23, 2.20)	2.10*** (1.60, 2.76)	1.47** (1.11, 1.95)	1.64** (1.18, 2.29)
Male	0.59*** (0.56, 0.61)	0.49*** (0.43, 0.56)	0.61*** (0.55, 0.68)	0.53*** (0.48, 0.58)	0.57*** (0.52, 0.62)	0.54*** (0.48, 0.60)	0.56*** (0.50, 0.63)
White	0.99 (0.94, 1.04)	1.45*** (1.27, 1.65)	1.16** (1.04, 1.30)	1.26*** (1.13, 1.40)	1.11* (1.01, 1.22)	1.08 (0.94, 1.25)	0.91 (0.78, 1.07)
<high school education	1.05 (0.96, 1.14)	1.12 (0.89, 1.41)	0.98 (0.80, 1.20)	1.30* (1.06, 1.60)	1.21 (0.94, 1.55)	1.47** (1.16, 1.86)	1.40*** (1.19, 1.65)
Married	0.66*** (0.64, 0.69)	0.74** (0.61, 0.90)	0.66*** (0.58, 0.74)	0.63*** (0.56, 0.70)	0.65*** (0.59, 0.71)	0.66*** (0.59, 0.73)	0.90 (0.80, 1.02)
Has health insurance	0.76*** (0.70, 0.81)	1.02 (0.88, 1.18)	0.84 (0.71, 1.00)	0.87 (0.73, 1.03)	0.79* (0.66, 0.95)	0.97 (0.79, 1.19)	3.31 (0.37, 29.95)
<100% of the federal poverty level	1.25*** (1.15, 1.36)	1.05 (0.89, 1.24)	1.02 (0.82, 1.27)	1.49*** (1.21, 1.85)	1.74*** (1.39, 2.19)	1.20 (0.93, 1.54)	1.37** (1.12, 1.67)

*P < .05; **P < .01; ***P < .001.

TABLE 4—Logistic Regression Models Representing Association With at Least 1 Day in the Past 30 Days When Health Prohibited Regular Daily Function by Age Group: California Health Interview Survey, 2003 and 2005

Variables	Total Sample (n = 70 456), OR (95% CI)	Aged 18–25 Years (n = 6573), OR (95% CI)	Aged 26–35 Years (n = 9571), OR (95% CI)	Aged 36–45 Years (n = 13 317), OR (95% CI)	Aged 46–55 Years (n = 14 464), OR (95% CI)	Aged 56–65 Years (n = 11 615), OR (95% CI)	Aged >65 Years, (n = 14 884), OR (95% CI)
Foster care	1.62*** (1.44, 1.82)	1.54** (1.14, 2.07)	1.50** (1.12, 2.01)	1.83*** (1.40, 2.39)	1.69*** (1.32, 2.16)	1.35 (1.00, 1.82)	1.33 (0.91, 1.93)
Male	0.72*** (0.68, 0.75)	0.65*** (0.56, 0.75)	0.65*** (0.58, 0.74)	0.73*** (0.65, 0.82)	0.68*** (0.62, 0.75)	0.72*** (0.63, 0.81)	0.87 (0.76, 1.00)
White	1.14*** (1.08, 1.20)	1.27** (1.11, 1.46)	1.23** (1.10, 1.39)	1.24*** (1.10, 1.40)	1.16* (1.03, 1.30)	1.09 (0.92, 1.29)	1.09 (0.92, 1.28)
<high school education	1.04 (0.96, 1.13)	1.08 (0.88, 1.34)	0.87 (0.68, 1.10)	0.97 (0.78, 1.19)	1.30* (1.01, 1.67)	1.32* (1.03, 1.71)	1.39*** (1.16, 1.66)
Married	0.72*** (0.68, 0.76)	0.76* (0.61, 0.93)	0.70*** (0.62, 0.80)	0.61*** (0.54, 0.68)	0.72*** (0.64, 0.80)	0.65*** (0.58, 0.74)	0.85* (0.75, 0.97)
Has health insurance	0.91* (0.84, 0.98)	1.07 (0.90, 1.26)	0.81* (0.68, 0.96)	1.01 (0.86, 1.19)	0.85 (0.71, 1.01)	1.15 (0.92, 1.45)	...
<100% of the federal poverty level	1.40*** (1.27, 1.54)	1.13 (0.94, 1.35)	1.02 (0.82, 1.26)	2.09*** (1.69, 2.58)	1.93*** (1.55, 2.41)	1.57 (1.23, 2.00)	1.64*** (1.29, 2.07)

Note. CI = confidence interval; OR = odds ratio.
*P < .05; **P < .01; ***P < .001.

demonstrated a strong association with chronic health problems (as indicated by receipt of SSDI or being unable to work for the past year) and with acute health problems (as indicated by having physical and mental health concerns during the past month), even after stratifying by age and adjusting for demographic, social, and economic characteristics. Usually, adults aged 25 to 55 years are firmly entrenched in the US workforce; however, adults with histories of childhood foster care were almost 3 times more likely to miss an entire year of work (or receive SSDI) compared with adults without histories of childhood foster care. Adults with, compared with those without, histories of

childhood foster care also were approximately 1.5 times more likely to experience physical or mental health problems in the past 30 days. Moreover, adults with a history of childhood foster care, compared with those without, consistently reported lower socioeconomic status (e.g., being unmarried, less educated, or uninsured, living in poverty), poorer health status, and higher morbidity (e.g., having asthma, diabetes, hypertension, or epilepsy, being a current smoker).

Another study using data representing 13 states found that the majority of emancipating foster youths were already diagnosed with physical or mental disabilities that limited their

ability to engage in major life activities.²⁴ Our data set did not enable the examination of the mental and physical problems at the date of emancipation from foster care; however, we did find that mental and physical health problems and the ability to work among adults with childhood histories of foster care may continue into much later stages of adulthood even after adjusting for other demographic, social, and economic confounders.

Foster Care and Adulthood Outcomes

Framing the context of this study is the knowledge that adulthood problems are linked not only to childhood adverse experiences such

TABLE 5—Logistic Regression Models Representing Association With Receipt of SSDI or Inability to Work in the Past Year Because of Physical or Mental Health Impairment by Age Group: California Health Interview Survey, 2003 and 2005

Variables	Total Sample (n = 70 456), OR (95% CI)	Aged 18–25 Years (n = 6573), OR (95% CI)	Aged 26–35 Years (n = 9571), OR (95% CI)	Aged 36–45 Years (n = 13 317), OR (95% CI)	Aged 46–55 Years (n = 14 464), OR (95% CI)	Aged 56–65 Years (n = 11 615), OR (95% CI)	Aged >65 Years (n = 14 916), OR (95% CI)
Foster care	2.47*** (2.13, 2.86)	2.55** (1.33, 4.89)	3.12*** (2.00, 4.85)	3.09*** (2.22, 4.30)	2.70*** (1.98, 3.67)	2.00*** (1.43, 2.79)	2.17** (1.32, 3.56)
Male	0.95 (0.89, 1.02)	0.88 (0.57, 1.34)	1.02 (0.76, 1.38)	0.91 (0.77, 1.08)	0.86 (0.75, 1.00)	1.15 (1.00, 1.33)	1.01 (0.81, 1.25)
White	1.24*** (1.12, 1.36)	1.23 (0.80, 1.88)	1.18 (0.88, 1.58)	0.88 (0.71, 1.10)	0.92 (0.76, 1.11)	0.66*** (0.57, 0.78)	0.96 (0.75, 1.22)
<High school education	1.73*** (1.53, 1.96)	2.00** (1.20, 3.35)	1.37 (0.87, 2.16)	1.37* (1.04, 1.81)	1.63** (1.18, 2.24)	2.51*** (1.92, 3.30)	2.44*** (1.90, 3.14)
Married	0.64*** (0.59, 0.69)	0.50* (0.29, 0.87)	0.44*** (0.34, 0.57)	0.42*** (0.35, 0.50)	0.40*** (0.34, 0.47)	0.50*** (0.42, 0.60)	0.64*** (0.52, 0.78)
Has health insurance	1.81*** (1.56, 2.10)	1.94* (1.18, 3.19)	1.06 (0.74, 1.52)	1.64** (1.16, 2.31)	1.56** (1.14, 2.12)	2.35*** (1.62, 3.40)	1.31 (0.26, 6.52)
<100% of the federal poverty level	2.81*** (2.52, 3.13)	1.15 (0.67, 1.98)	3.01*** (2.03, 4.45)	4.91*** (3.83, 6.31)	6.28*** (4.85, 8.13)	5.06*** (3.87, 6.61)	1.59** (1.17, 2.16)

Note. CI = confidence interval; OR = odds ratio; SSDI = Social Security Disability Insurance. *P < .05; **P < .01; ***P < .001.

as sexual or physical abuse¹⁴ but also to less unusual events such as living in very low socioeconomic circumstances as a child.^{15–17} This study, which used a US statewide representative sample, adds evidence that childhood events are associated with adulthood health status and morbidity and suggests an association with a very specific adverse childhood event: placement into foster care.

Still, such associations must be examined carefully because the foster care experience encompasses events before and during foster care placement. Children in foster care have a wide range of experiences. Foster care placements and outcomes vary dramatically by the child's age when placed into foster care; duration of foster care; number of foster care placements; quality of each placement, whether positive or negative; presence of any mental or physical disability; and the child's temperament and resiliency. The absence of these variables limited the data set we used. However, a British study examined the relationship with 1 of these variables—the child's age when placed into out-of-home care and adulthood outcome—and found no association.²⁵ The authors interpreted the lack of significance with caution because the response rates in their study varied by the child's age when placed into foster care.²⁵

Foster Care as a Sentinel Event

Epidemiology uses the term “sentinel event” to depict a disease arising from a preventable event.²⁶ The benefit of identifying a sentinel event is that it signals an opportunity to intervene. Entry into the foster care system might be a sentinel event.

Unlike other exposures or risk factors labeled sentinel events, a childhood history of foster care represents a cluster of several factors, including the events that take place before foster care placement and those that take place while in foster care placement. Childhood foster care is different from other sentinel events in another way. Unlike other risk factors or exposures, it indicates entry into a public system organized and operated by local governments. The federal government, through its laws and agencies, designs the structures and writes the policies that local governmental agencies eventually translate and implement. Consequently, the government has the power to institute changes for

the children for whom it bears ultimate responsibility.

Limitations

Although we used a data set representative of the noninstitutionalized persons living in the state of California, generalizability to other US populations must be made with caution. Additionally, because the data set was cross-sectional, we have reported only associations, and causality may not be inferred. One tenet of the life course theory, which formed the framework for this study, is that in the lifespan there are critical periods when the effect of an event may be greater than at other periods. However, identifying the critical period in foster care was not possible, as the CHIS data set did not contain such information as the date of entry or exit into foster care, the child's status before entry into foster care, the number of placements, the duration of each placement, and the quality of each placement, nor any indicators, whether negative or positive, of the child's experience in foster care. These variables and other life events that occurred since foster care placement could influence the association between a history of childhood foster care and adulthood outcomes.

Recommendations and Practice Implications

Our results suggest that the paucity or lack of critical physical, mental health, and social services during and after foster care may influence adulthood outcomes for graduates of foster care. At the very least, a safety net for young graduates of the foster care system is needed to ensure continued access to Medicaid or other health coverage and support services to promote education and employment and prevent homelessness. Some states have considered increasing support for former foster youths and youths aging out of foster care, such as increasing the duration of Medicaid coverage. Many others have passed legislation to extend foster care services beyond 18 years of age for these youths and support their emancipation with transitional housing, access to Medicaid beyond 18 years of age, and increased access to postsecondary education through grants and other programs.²⁷ In 2007, federal legislation sought, unsuccessfully, to establish independent foster care adolescents as

a new mandatory category of individuals eligible for Medicaid coverage.²⁸ The Patient Protection and Affordable Care Act of 2010 addressed this problem directly by requiring, as of January 1, 2014, that any young adult aging out of foster care who had been in foster care for at least 6 months be eligible for Medicaid benefits until 25 years of age.²⁹ Former foster children also have access to Medicaid coverage beyond 25 years of age through that act's provision.³⁰

Despite these important steps, access to health, mental health, and developmental services through Medicaid coverage remains a major challenge throughout the nation. A 2005 US Department of Health and Human Services review of state-level child and family services found that 77% of states lacked the number of doctors or dentists accepting Medicaid required to meet state need, and 71% of states lacked adequate mental health services for children. Furthermore, 40% of states' child welfare agencies were not consistent in providing preventive health and dental services to children in their care, and 69% of state agencies were inconsistent in ensuring mental health assessments.³¹ The failure to deliver needed health and mental health services to these exceptionally vulnerable children and youths ensures a continued disproportionately high prevalence of poor outcomes throughout their adulthood. ■

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Contributors

C. Zlotnick conceptualized the study and wrote the first draft. C. Zlotnick and T.W. Tam devised the analysis plan. T.W. Tam conducted the analyses. L.A. Soman wrote the policy implications. All authors edited the final draft of the article.

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Human Participation Protection

Because we analyzed an existing data set, the institutional review board of Children's Hospital and Research Center Oakland exempted this study from review.

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