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Report from CalYOUTH: Findings on the Relationship between Extended Foster Care and Youth's Outcomes at Age 23

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Executive Summary

The federal Fostering Connections to Success and Increasing Adoptions Act of 2008 (Fostering Connections Act) was, to a large extent, based on the belief that allowing youth in foster care to remain in care past their 18th birthday would improve their outcomes as adults. Research conducted on outcomes for youth in care prior to the passage of the Fostering Connections Act provided early evidence on the impact of extended foster care (EFC) on youth outcomes. Researchers found that time in EFC promoted educational attainment, increased earnings, and decreased instances of homelessness and criminal justice involvement (see, for example, Courtney & Hook, 2017; Dworsky, Napolitano, & Courtney, 2013; Hook & Courtney, 2011; Lee, Courtney, & Tajima, 2014; Okpych & Courtney, 2020). An earlier report from the California Youth Transitions to Adulthood Study (CalYOUTH) found EFC to be associated with improved outcomes in several areas at age 19 (Courtney & Okpych, 2017) and age 21 (Courtney, Okpych, & Park, 2018). At age 21, more time spent in EFC was associated with increased educational attainment and employment, increased financial assets, increased social support, reduced receipt of need-based public aid, and decreased homelessness, economic hardship, pregnancy, and criminal justice system involvement (Courtney, Okpych, & Park, 2018). The present report builds on that prior research by examining outcomes from the fourth interview wave of CalYOUTH, which took place when study participants were 23 years old or older, at least 2 years after all of the study participants had exited care.

Methods

We used two analytic approaches to evaluate the impact of EFC. These approaches are based on the two main types of data available in CalYOUTH. The first approach leveraged data on a large sample of over 50,000 youths from California's Child Welfare Services/Case Management System (CWS/CMS), linked to other administrative data on college attendance, employment, earnings, and need-based public food assistance. The sample included young people who had been in child welfare- supervised foster care for at least 6 months (180 days) sometime after their 16th birthday, between the years 2006 and 2015. This includes youth who reached the age of majority in care both before and after the 2012 implementation of California's law extending foster care to young adults, the California Fostering Connections Act, also known as AB12.

The second analytic approach drew on data collected from our four waves of interviews with a representative sample of California foster youth. Young people in the longitudinal study (*n* = 727) were all potentially eligible for extended foster care under AB12 (i.e., their 18th birthdays came after January 1, 2012). They were eligible for the study if they were between 16.75 and 17.75 years old at the end of 2012 and had been in the California foster care system for at least 6 months. We restricted our analyses of the youth survey sample to just the 622 young people who completed the first and fourth interview waves, conducted when the youth were, on

average, 17 and 23 years old, respectively. Most of the two dozen outcomes assessed in this report using youth survey data came from the fourth round of interviews with the young people.

In both analytic approaches, EFC was evaluated by estimating the impact that a year in extended care had on each of the outcomes. We used an advanced statistical procedure (an instrumental variable approach) to estimate the impact that each year in care past age 18 had on the six outcomes assessed in the administrative data sample. We used several types of statistical models with the youth survey sample, depending on the measure of the outcome. The models we used with both the administrative data analysis and the youth survey analysis to assess the relationship between time in extended care and youths' outcomes statistically controlled for a wide range of youth characteristics available in each dataset, as well as characteristics of the county in which youth were placed.

Findings

Results from the administrative data analyses and the youth survey analyses found statistically significant ($p < .05$) relationships between extended foster care and several outcomes. Specifically, each additional year in extended foster care:

- Increased the probability that youth completed a high school credential by about 8%

- Increased their expected probability of enrolling in college by 5–12%

- Increased the number of quarters that youth were employed between their 21st and 23rd birthdays (increased by a little less than half of a quarter for each year in extended care)

- Increased youths' total earnings between their 21st and 23rd birthdays by about $2,300–$3,200

- Increased the amount of money youth had in back accounts by about $650

- Decreased the odds of being food insecure in the past 12 months by about 21%

- Decreased the odds of being homeless or couch-surfing between the ages of 21 and 23 by about 19%. Also decreased the number of times youth had been homeless and the number of days youth had been homeless during that period.

- Increased the odds that youth felt they had enough people to turn to for emotional support, tangible support, and advice/guidance

- Decreased the odds that youth had been arrested since their last CalYOUTH interview by about 28%

There were a couple of outcomes where findings were mixed between our two sources of data. In the youth survey data, more time in EFC was found to significantly increase the probability of completing a college degree and of receiving less in public food assistance benefits, but these associations were not statistically significant ($p > .05$) in the administrative data sample.

Several outcomes were not significantly associated with the number of years in extended care. These included number of college semesters completed (among youth who entered college), number of economic hardships, physical and behavioral health, social support (number of professionals available), recent pregnancies and child births, being convicted of a crime, and being the victim of a crime.

Supplemental analyses found that the impact of extended foster care differed by gender and by race/ethnicity for some outcomes. In the administrative data, more time in extended care resulted in a larger increase in total earnings between ages 21 and 23 for females than for males. In the youth survey data, time in extended care had a larger effect on reducing the number of times youth were homeless for males than for females. In terms of race/ethnicity differences, in the administrative data, time in EFC had a larger effect on increasing the probability of ever enrolling in college by age 23 for white youth, Hispanic youth, and youth in the "other" race/ethnicity group than for African American youth. In the youth survey data, time in EFC had a larger impact on reducing the number of instances youth were homeless since their last interview for white, Hispanic, and "other race" youth than for African American youth. Additional differences in EFC impacts were found between specific groups for the number of days youth were homeless since their last interview, the risk of sexual assault, the odds of arrest since last interview, and the probability of having a high school credential by age 23. Further exploration of possible differential impacts of EFC by gender, race, and ethnicity is an area that warrants more attention from future studies.

Conclusion

This report builds on CalYOUTH's previous work evaluating the impact of extended care while youth were in care (for information about age 19 outcomes, see Courtney & Okpych, 2017) and around the time they reached California's foster care age limit (see Courtney, Okpych, & Park, 2018 for the study of outcomes at age 21). When assessing outcomes at age 23, we find that EFC has a range of positive impacts on youths' lives even after they have been out of foster care for 2 years or more. Similar to our age-21 impact report, we did not find any evidence of deleterious effects of remaining in EFC, and we did not find that EFC had impacts on all outcomes we studied. A potential contributor to the absence of some hoped-for effects of extended care is how recently, in practical terms, California embarked on providing care to the young adults our study was able to follow through their 23rd birthday. Our youth survey sample reached their 18th birthday only 2 years into the implementation of California's extension of foster care and we were only able to follow outcomes to age 23 using our administrative data for youths who reached the age of majority in care during the first 3 years (college attendance outcomes) to 4 years (employment, earnings, and need-based public food assistance outcomes)

of the law. Put simply, providing extended care in California and in other states that extended care to young adults in recent years remains a work in progress.

Introduction

Support for the extended care provisions of the federal Fostering Connections to Success and Increasing Adoptions Act of 2008 was, to a large extent, based on the belief that allowing youth in foster care to remain in care past their 18th birthday would improve their outcomes as adults. Research following foster youth into adulthood has shown that they generally fare much worse than their age peers in terms of educational attainment, employment and earnings, homelessness and economic hardship, health and mental health, early pregnancy and parenting, victimization, and criminal justice system involvement (Courtney, 2009).

In two previous memos (Courtney & Okpych, 2017; Courtney, Okpych, & Park, 2018), we reported findings on the relationships between the amount of time youth remained in extended foster care (EFC) and a host of youth outcomes. The most recent memo drew from data collected from our third round of interviews with young people participating in the ongoing California Youth Transitions to Adulthood Study (CalYOUTH), which took place when the youths were, on average, 21 years old. The memo yielded promising findings about the impact of extended foster care on their outcomes soon after their 21st birthday, when they reached California's maximum foster care age limit. It was found that the number of years youth remained in care past their 18th birthday significantly increased their probability of finishing high school and enrolling in college, increased the number of quarters they were employed between ages 18 and 21, and increased the amount of money they were able to save. Youth who spent more time in EFC were more likely to have a professional in their lives who they could turn to as a source of social support. EFC was also associated with a decrease in several unfavorable outcomes, including the chances of being homeless, being arrested, being incarcerated, the likelihood of becoming pregnant or impregnating a female, the number of economic hardships encountered, and the amount of need-based public aid received. These early findings from CalYOUTH were in line with results from our earlier report of age-19 outcomes (Courtney & Okpych, 2017) and prior studies that found EFC promoted educational attainment, increased earnings, and decreased instances of homelessness and criminal justice system involvement (Courtney & Hook, 2017; Dworsky et al., 2013; Hook & Courtney, 2011; Lee et al., 2014; Okpych & Courtney, 2020).

This report builds on our previous memos by examining outcomes from the fourth CalYOUTH interview wave, which took place when participants were 23 years old, on average, and had all been out of foster care for at least 2 years. The report also incorporates another data source—state administrative data on a large sample of transition-age foster youth in California. These administrative data include youth who reached the age of majority while in care both before and after the 2012 implementation of California's law extending foster care to young adults, the California Fostering Connections Act, also known as AB12. These data allow us to compare youths' outcomes before the policy change to those afterwards and to employ more sophisticated statistical analyses when estimating the impact of extended foster care on youth

outcomes. Taken together, study findings reported here provide evidence about the benefits of extended care on outcomes for youth in early adulthood after they have left foster care.

Study Methods

We used two analytic approaches to evaluate the impact of extended foster care (EFC). These approaches are based on the two main types of data available from CalYOUTH.[1]

Analyses of State Administrative Data

The first approach leveraged a large sample of over 50,000 youths from California's Child Welfare Services/Case Management System (CWS/CMS). The sample includes young people who had been in child welfare-supervised foster care for at least 6 months (180 days) sometime after their 16th birthday between the years 2006 and 2015.[2] The sample excludes youth who were only in probation-supervised foster care placement and youth with a developmental disability. This analysis includes youth who were and were not eligible for EFC under California's AB12 law.[3] The AB12-eligible group included youth whose 18th birthday was between 2012 and 2015. The other group turned 18 between 2006 and 2011 and was not eligible for the full provisions of extended care under the AB12 law.[4] We then linked the CWS/CMS data to other state administrative data to assess three outcomes: number of quarters youth were employed between their 21st and 23rd birthdays (Unemployment Insurance Wage Claims[5] [UI]), total earnings during that period (UI), and total amount of CalFresh[6] benefits received during that period (Electronic Benefits Transfer and Statewide Automated Reconciliation System

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[1] For more information on the CalYOUTH Study, see: https://www.chapinhall.org/research/calyouth/

[2] The 180-day criterion matched a criterion used to select participants for the longitudinal youth survey study.

[3] Assembly Bill 12 (AB12) is California's law that extended the age limit of foster care from 18 to 21. The bill was signed into law on September 30, 2010 and became effective on January 1, 2012. For more information, see http://www.jbaforyouth.org/ca-fostering-connections/ or http://www.cdss.ca.gov/inforesources/Foster-Care/Extended-Foster-Care-AB-12

[4] Youth who turned 18 between January 1, 2011 and December 31, 2011 are commonly known as "gap youth," whose extended foster care stay was not initially fully funded by the state (for more information, see Dworksy, Napolitano, & Courtney, 2013). The average amount of time "gap youth" spent in extended foster care was greater than youth who turned 18 in 2010 and before, but "gap youth" stayed in extended care for about 9 fewer months than youth who turned 18 in 2012 and after, when the law was fully implemented (see Courtney, Park, & Okpych, 2017). For these analyses, "gap youth" are included in the pre-AB12 group.

[5] Data on employment and earnings from unemployment insurance wage claims were obtained from the California Department of Employment Development. This dataset includes records of about 51,000 youths who turned 18 between January 2006 and March 2015.

[6] CalFresh is the name used in California for its version of the federal Supplemental Nutrition Assistance Program (SNAP). Information on CalFresh benefits came from California's Electronic Benefits Transfer and Statewide Automated Reconciliation System (EBT/SARS) data. This dataset includes records of about 26,000 youths who turned 18 between April 2010 and June 2015.

[EBT/SARS]). We also linked CWS/CMS data to National Student Clearinghouse (NSC)[7] records to assess five college outcomes. The first three outcomes look at educational attainment by age 23: enrollment in college by the 23rd birthday, number of semesters completed by the 23rd birthday, and degree completion by the 23rd birthday (2-year and 4-year degrees). The last two outcomes examine attainment that occurred between ages 21 and 23: enrolled in college between the 21st and 23rd birthdays, and number of semesters completed between the 21st and 23rd birthdays. The NSC data were obtained in April 2019.

Table 1 shows information on the eight outcomes that we assessed using the administrative data sample. The findings are presented for the total sample and separately for the pre-AB12 and post-AB12 groups. Statistically significant ($p < .05$) differences between these two groups are indicated by asterisks in the rightmost column. Significant differences between the pre-AB12 and post-AB12 groups were found for the following outcomes:

- college enrollment by age 23

- the number of semesters completed by age 23

- college degree completion by age 23

- the number of semesters completed by between ages 21 and 23

- the number of quarters youth were employed between ages 21 and 23

- the amount earned (in 2014 dollars) between ages 21 and 23

- the amount of CalFresh benefits received between ages 21 and 23

Although not displayed in the table, we ran two supplemental analyses for the postsecondary education completion outcomes. First, we examined rates of postsecondary credential completion, which includes 2- and 4-year degrees and postsecondary certificates (e.g., vocational training). Among all youth ($n = 47,666$), 3.2% completed a postsecondary credential by their 23rd birthday. Rates of completion were not statistically significantly different between the pre-AB12 group (3.2%) and the post-AB12 group (3.4%). Second, we examined college degree completion rates among just youth who had ever enrolled in postsecondary education. Among these youth ($n = 22,505$), 4.3% had earned a 2- or 4-year degree by age 23, and the degree completion rate was significantly higher for the post-AB12 group (5.3%) than for the pre-AB12 group (4.0%, $p < .001$).

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[7] The NSC is a 501(c)(6) nonprofit and nongovernmental organization that provides information on enrollment status and degree records for more than 3,600 public and private U.S. postsecondary institutions, which comprise about 98 percent of the postsecondary student body.

Table 1. Outcomes from the Administrative Data Sample

Outcome	Outcome measure	Total sample N	% / Mean (SD)	Pre-AB12 youth n	% / Mean (SD)	Post-AB12 youth n	% / Mean (SD)	p-value
Postsecondary education	Enrolled in college by age 23 [a] (%)	47,666	47.2	36,378	46.5	11,288	49.5	***
	Number of semesters completed by age 23 [a,b] (Mean/SD)	22,505	3.3 (2.9)	16,922	3.2 (2.9)	5,583	3.4 (3.0)	**
	Completed a college degree by age 23 [a] (%)	47,666	2.0	36,378	1.9	11,288	2.6	***
	Enrolled in college between ages 21 and 23 [a] (%)	47,666	24.9	36,378	25.0	11,288	24.4	n.s.
	Number of semesters completed between ages 21 and 23 [a,c] (Mean/SD)	11,855	1.9 (1.4)	9,103	1.9 (1.4)	2,752	2.0 (1.4)	*
Employment	Total quarters employed between ages 21 and 23 [d] (0 to 12; Mean/SD)	51,127	2.9 (3.1)	35,925	2.7 (3.1)	15,202	3.4 (3.1)	***
Earnings	Total earnings (in 2014 dollars) between ages 21 and 23 [d] (Mean/SD)	51,127	$11,965 ($20,823)	35,925	$11,450 ($21,374)	15,202	$13,181 ($19,404)	***
Receipt of need-based public aid	Amount of CalFresh benefits received between ages 21 and 23 (in 2014 dollars) [e] (Mean/SD)	25,938	$2,202 ($3,014)	9,730	$2,487 ($3,307)	16,208	$2,030 ($2,810)	***

Note: *$p < .05$, **$p < .01$, ***$p < .001$, n.s. = not significant

[a] Data on college enrollment, completed semesters, and degree completion were obtained from the National Student Clearinghouse.

[b] Analysis evaluating number of semesters completed only include youths who had ever enrolled in college by age 23.

[c] Analysis evaluating number of semesters completed only include youths who had ever enrolled in college between ages 21 and 23.

[d] Data on employment and earnings from unemployment insurance wage claims were obtained from the California Department of Employment Development.

[e] Information on CalFresh benefits came from California's Electronic Benefits Transfer and Statewide Automated Reconciliation System (EBT/SARS) data.

Using CWS/CMS data, we calculated the number of months that youth spent in care after their 18th birthday. This was the primary predictor used to evaluate the impact of EFC using the

administrative data sample. The variable ranged from 0 months to 36 months, and youth had been in care an average of 9.8 months past their 18th birthday (5.8 months for the pre-AB12 cohort[8] and 18.6 months for the post-AB12 cohort).

We used an advanced statistical procedure (an instrumental variable approach) to estimate the impact that each year in care past age 18 had on the eight outcomes assessed using the administrative data sample.[9] When statistical assumptions are met, instrumental variable models provide rigorous, unbiased estimates of the policy under consideration.[10] Importantly, results from instrumental variable models apply to youth whose length of time in extended care would be impacted by the county they lived in and whether an extended care law was in effect at the time. The results do not apply to youth whose time in extended foster care is unaffected by location and by EFC policy (e.g., youth who would never stay in extended care, regardless of which county they were in and whether an EFC law had been passed). To further strengthen the statistical rigor of the analyses, we statistically controlled for a range of youth characteristics (demographics, foster care history characteristics, history of probation involvement, history of behavioral health problems) and county-level factors (cost of fair market rent for a two-bedroom apartment and youth unemployment rate). A full list and description of the control variables used in the analyses of administrative data can be found in Table A-1.[11]

There are two advantages to our analytic approach. First, the variation between counties in uptake of extended foster care combined with a sample that includes pre- and post-AB12 youth

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[8] Judges in some counties, such as San Francisco and Los Angeles, gave orders to allow foster youth to remain in care past age 18 in the years preceding AB12.

[9] Two-stage least squares models were used to evaluate the impact of EFC in the administrative data sample. The instrument in the first-stage equation was the interaction between youth's supervising county and whether a youth is eligible for extended care under AB12 or not (i.e., whether a youth's 18th birthday was before or after January 1, 2012). The first-stage equation included all of the controls listed in Table A-1 and predicted youths' number of months in EFC after age 18. The second-stage equation used the predicted values from the first-stage equation to estimate the impact of the number of months in care past age 18 on each of the eight outcomes.

[10] In these models, a good instrument is one that (a) is strongly related to extended foster care, but that (b) only impacts each of the youth outcomes through the impact it has on time in extended care. In terms of (a), there was strong between-county variation in the uptake of extended foster care ($p < .001$); in other words, the average length of time youth remained in care past their 18th birthday differed considerably between counties. In terms of (b), differential uptake of extended care between counties is arguably unrelated to youths' characteristics that may be associated with selection into extended care. That is, there is little reason to suspect that between-county differences in extended care uptake are related to the outcomes, other than through the effect this county-level variation has on the time that youth remain in extended foster care.

[11] To get more precise estimates, we performed a bootstrap estimation procedure 500 times with random sample replacement. In other words, we performed two-stage least-squares regression 500 times with a randomly drawn subset of the sample to get coefficient and standard error estimates' distributions and their mean points. This bootstrap approach was feasible for some, but not all, of the outcomes assessed by the administrative data. Table notes are provided for outcomes where the sample size was insufficient to run bootstrap models that achieved model convergence.

allowed us to use an advanced statistical method that rigorously evaluated the impact of EFC. A second advantage is the large sample size. Compared to the youth survey sample (described below), the administrative data sample gives us the statistical power to detect effects that are small to moderate in size.[12] The most notable downside of the administrative data analysis is the limited number of youth outcomes that can be assessed. Data from only eight outcomes were available at the time of this report. To this point, we turn to our second analytic approach, which includes an analysis of a wide range of outcomes from CalYOUTH's longitudinal youth interview study.

Analyses of CalYOUTH Survey Data

The second analytic approach drew on data collected from our interviews with a representative sample of California foster youth (see Courtney et al., 2014; Courtney et al., 2016; Courtney, Okpych, Park, Harty, et al., 2018; and Courtney et al., 2020). Unlike the administrative data sample, the youth who completed the surveys were all potentially eligible for AB12 (i.e., their 18th birthdays came after 2012). These young people were between 16.75 and 17.75 years old at the end of 2012 and had been in the California foster care system for at least 6 months. The original sample of youth, which is representative of the statewide foster care population that met the study eligibility criteria, was stratified by county to maximize our ability to examine between-county differences in youth outcomes. A total of 727 youths completed the first interview at age 17 in 2013 (95% response rate), 611 youths completed the second interview at age 19 in 2015 (84% of the baseline sample), 616 youths completed the third interview at age 21 in 2017 (85% of the baseline sample), and 622 youths completed the fourth interview at age 23 in 2019 (86% of the baseline sample). We restricted our analyses of the youth survey sample to just the 622 young people who completed the first and fourth interview waves.

Table 2 shows the outcomes assessed using the youth survey data. Most of the two dozen outcomes came from the fourth round of interviews with the young people when the group was, on average, 23 years old.[13] Some of the outcomes came from state administrative data (i.e., number of quarters employed, total earnings, and amount of CalFresh benefits). Taken together, the outcomes cover a wide range of key developmental milestones, life events, and life circumstances of young people in their early 20s. As displayed in the table, most of outcomes were missing information from only a small fraction of the 622 respondents.

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[12] This is especially important both because we control for a large number of factors and because instrumental variable models are particularly taxing on statistical power.

[13] Most of the Wave 4 respondents were 23 years old at the time of their interview (83.3%), although some were 22 years old (2.4%) or 24 years old (14.4%).

Table 2. Outcomes from the Youth Survey Sample

Outcome	Outcome measure	Sample (*n*)	% or Mean(SD)
Secondary education	Completed diploma, GED, other credential[a] (%)	529	83.6
Postsecondary education	Ever enrolled in college by Wave 4[b] (%)	619	63.9
	Completed a college degree by Wave 4[b] (%)	619	10.9
Employment	Total quarters employed between youth's 21st and 23rd birthdays[c] (0–12; Mean (SD))	600	4.2 (3.0)
Earnings	Total earnings between age 21 and 23 (in 2014 dollars[c]; Mean (SD))	600	$16,364 ($20,287)
Assets	Current balance across all checking, savings, and money market accounts (Mean (SD))	601	$1,704 ($5,749)
Economic hardship	Number of hardships in past year before Wave 4[d] (scale of 0–6; Mean (SD))	609	1.2 (1.6)
Food insecurity	USDA Food Insecurity Measure at Wave 4[e] (%)	620	28.2
Homelessness	Ever homeless or couch surfed since last interview (%)	622	36.0
	Number of times homeless since last interview (0–5 or more; Mean (SD))	617	0.7 (1.4)
	Total number of days homeless since last interview[f] (0–365; Mean (SD))	616	30.0 (81.3)
Receipt of need-based public aid	Amount of CalFresh benefits received between age 21 and 23 (in 2014 dollars[g]; Mean (SD))	600	$2,037 ($2,694)
General health	General health rating		
	Poor/Fair (%)		24.3
	Good (%)	620	33.5
	Very good (%)		22.8
	Excellent (%)		19.5
Mental health	Any mental health disorder[h]	597	28.8
Alcohol/substance use	Any alcohol/substance use disorder[i]	617	15.3
Social support	Total number of nominated supports (maximum of 9; Mean(SD))	621	2.8 (1.4)
	Total number of nominated professionals[j] (maximum of 3; Mean(SD))	620	0.2 (0.5)
	Adequacy of social support[k] (scale of 0 to 6; Mean(SD))	620	4.6 (1.6)

Outcome	Outcome measure	Sample (*n*)	% or Mean(SD)
Pregnancy	Became pregnant/impregnated female since last interview (%)	601	33.2
Parental status	Had a child since last interview (%)	600	17.1
Criminal justice system involvement	Arrested since last interview (%)	596	14.4
	Convicted of a crime since last interview (%)	594	6.9
Victimization	Physically assaulted in 12 months prior to Wave 4[l] (%)	618	5.9
	Weapon pulled or used on respondent in 12 months prior to Wave 4[m] (%)	597	8.1
	Sexual victimization since last interview[n] (%)	590	11.2

[a] Excludes youths who had already earned a high school diploma, GED, or other secondary credential at the time of their baseline interview.

[b] Measure created from self-report during the youth interviews. Relying on National Student Clearinghouse records that were obtained in May 2019 and used with the administrative data sample, the college enrollment rate was 60.8% and the degree completion rate was 4.0%.

[c] Data on employment and earnings came from unemployment insurance wage claims obtained from the California Department of Employment Development.

[d] We tallied the total number of distinct types of hardships that the youth experienced at Wave 4. Hardships included: (1) not having enough money to buy clothing; (2) not having enough money to pay rent; (3) being evicted because of inability to pay rent or mortgage; (4) not having enough money to pay utility bills; (5) having their telephone and/or TV service disconnected; and (6) having their gas/electricity shut off.

[e] A youth was classified as food insecure if he or she answered "yes" to two of more of the following items: (1) anyone in household skipped/cut size of meals because of not enough money for food; (2) did not eat for a whole day because of not enough money for food; (3) ate less than you should because of not enough money for food; (4) did not have enough money to buy food after food didn't last (sometimes or often); (5) could not afford to eat balanced meals (sometimes or often).

[f] The number of days homeless was top-coded at 365. Less than 3% of youth reported being homeless for more than 365 days. Among youth who had been homeless at least once since their last interview (*n* = 148), the average number of days homeless was 125.4 (SD = 137.8) and the median number of days was 60.

[g] Amount of CalFresh benefits was obtained from California's Electronic Benefits Transfer and Statewide Automated Reconciliation System (EBT/SARS) data, which provides information on benefits received from the federal Supplemental Nutritional Assistance Program (SNAP).

[h] Current mental health problems were assessed using the Mini International Neuropsychiatric Interview for Adults (Sheehan et al., 1998) and a brief version of the Eating Disorder Inventory-3 (Friborg, Clausen, & Rosenvinge, 2013). See Courtney et al. (2020) for more information. Youth were indicated for a mental health disorder if they screened positive for any of the following: major depressive episode (current and recurrent), manic episode, hypomanic episode, panic disorder, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, generalized anxiety disorder, antisocial personality disorder, anorexia, or bulimia.

i Current alcohol/substance abuse and dependence were assessed using the Mini International Neuropsychiatric Interview for Adults.

j Professionals include: staff at transitional housing placement, professional at school/college/vocational training, therapist/counselor, mentor, doctor, and other professionals.

k Youths reported whether they had "no one," "some but not enough people," or "enough people," to turn to for social support. For the purposes of these analyses, the responses were recoded to 0 ("no one"), 1 ("some but not enough"), or 2 ("enough people"). Three types of social support were assessed: emotional, tangible, and advice/guidance. The scores for each type of social support were summed, and this composite score ranged from 0 ("no one" on all three types) to 6 ("enough people" on all three types).

l Youths were marked as experiencing physical assault if they reported that someone else beat them up, either with or without theft of their property.

m Youths were marked as having a weapon pulled or used on them if they reported that they had a gun pulled on them, were shot, had a knife pulled on them, or were stabbed.

n Youths were asked seven questions about acts of sexual victimization. Youths were considered as having been sexually victimized if they answered affirmatively to any of the seven questions. See Table 98 in Courtney et al. (2020) for more information.

Like the analyses of state administrative data, the main predictor in the youth survey analyses was the total number of months a youth remained in care between their 18th and 21st birthdays. We estimated how the amount of time youth remained in care past age 18 predicted the likelihood of each outcome. The type of regression model used depended on the outcome measure.[14] A wide range of youth-level characteristics were included in our regression models to control for the factors that may confound the relationship between the number of months spent in extended care and the outcomes. We also controlled for the two county-level characteristics used in the administrative data analyses (average rent for a two-bedroom apartment and youth employment rate), as well as a measure of county size/urbanicity. All of the control variables included in the youth survey analyses can be found in Table A-2 in the Appendix. Multiple imputation was used to address missing data on the control variables and survey weights were applied to expand the findings to the population of California youth meeting the CalYOUTH Study criteria.

For each outcome, we also ran instrumental variable models in an attempt to obtain more accurate estimates of the relationship between years in care past 18 and the outcomes. However, we interpret the findings from these analyses with caution, both because there were concerns about meeting the statistical assumptions needed to draw valid conclusions[15] and

[14] For continuous outcome measures (e.g., earnings and assets), we used ordinary least squares (OLS) regression. For binary (yes/no) outcomes (e.g., currently employed, presence of a mental health disorder), we used binary logistic regression. For our measure of health status, we used ordinal logistic regression. For our count measures of economic hardship and social support, we used Poisson regression. However, for the outcomes that were also assessed in the administrative data sample, we used linear probability models with robust standard errors. We did this so the outcome estimates from the youth survey data would be in the same units as the outcome estimates from the administrative data.

[15] The instrument in the youth survey analyses was a county-level average of the number of months youth remained in care past age 18. This was calculated from CWS/CMS administrative data, using post-AB12

because the sample size was relatively small, which limited our statistical power to detect small to moderate impacts. A paragraph at the end of the Findings section has a cautionary note about the findings from the instrumental variable models using the youth survey data.

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youth whose 18th birthday came before the 18th birthdays of youth participating in the longitudinal study. In terms of the two main model assumptions stated in footnote 10, the instrument significantly predicted youths' average number of years in care past age 18 ($p < .001$), which supports assumption (a). However, we were skeptical about assumption (b), namely, that the instrument was exogenous (i.e., that it was only related to the outcomes through its impact on extended care). Supplemental analyses found that the instrument was in fact related to other county-level measures that were also related to the youth outcomes, casting doubt on the credibility of the instrument to meet assumption (b). Thus, results from the instrumental variable models for the youth survey data should be interpreted cautiously.

Findings

Education, Employment, Earnings, and Assets

Table 3 presents findings on the relationship between the amount of time youth spent in foster care beyond age 18 and their education, work, and savings outcomes. Results from the state administrative data sample appear first in the table, followed by results from the youth survey data.

In the administrative data sample, extended care was found to have a positive impact on increasing youths' chances of enrolling in college by age 23. Each additional year that youth spent in care past age 18 increased the expected probability of enrolling in college by about 5%. Each year in extended care predicted that that youth would be employed for about four-tenths of a quarter (1.2 months) more between ages 21 and 23. Each additional year that youth spent in care past age 18 increased the expected amount of total earnings between ages 21 and 23 by more than $3,000.

Similar results were found in the youth survey sample for some of the outcomes assessed in both analyses. Each year in extended foster care predicted about a 12% increase in the probability of enrolling in college. Unlike the administrative data sample, in the youth survey sample each year in extended care was expected to increase youths' chances of completing a 2-year or 4-year college degree. One year in extended care also predicted that that youth would be employed about half of a quarter (1.5 months) more between ages 21 and 23. There was a statistically significant association between time in extended care and total earnings from age 21 to 23, with each year in extended care predicting about $2,300 extra in earnings.

The youth survey data allowed us to assess two outcomes that were not available in the administrative data. First, among youth who had not completed a high school credential by their baseline interview, more time in extended foster care significantly increased the expected probability that they completed a high school credential by the fourth interview wave at age 23. Second, more time in extended care predicted greater savings. For each year spent in extended care, youth were expected to have an extra $646 in their bank account. For youth who stayed in care until age 21, this translated to having about $1,940 more in the bank compared to youth who spent no time in extended care.

Table 3. Estimated Impacts of EFC on Education, Employment, Earnings, and Assets

Outcome	Outcome measure	Data source	n	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	*p*-value
Postsecondary education	Enrolled in college by age 23	Admin	47,666	Instrumental variable	Percentage	5.3%	**	.008
	Number of semesters completed by age 23[a]	Admin	22,505	Instrumental variable	Number of semesters	-0.23	n.s.	.141
	Completed a college degree by age 23	Admin	47,666	Instrumental variable	Percentage	0.00	n.s.	.614
	Enrolled in college between ages 21 and 23	Admin	47,666	Instrumental variable	Percentage	0.00	n.s.	.897
	Number of semesters completed between ages 21 and 23[a]	Admin	11,855	Instrumental variable	Number of semesters	-0.13	n.s.	.177
Employment	Total quarters employed between age 21 and 23 (0 to 12)	Admin	51,127	Instrumental variable	Number of quarters	0.41	***	<.001
Earnings	Total earnings between age 21 and 23	Admin	51,127	Instrumental variable	Dollars (constant 2014)	$3,203	***	<.001
Secondary education	Completed diploma, GED, other credential by Wave 4	Youth survey	529	Linear probability model	Percentage	8.0	***	<.001
Postsecondary education	Enrolled in college by Wave 4	Youth survey	619	Linear probability model	Percentage	11.7	***	<.001
	Completed college degree by Wave 4	Youth survey	619	Linear probability model	Percentage	3.2	**	.002
Employment	Total quarters employed between youth's 21st and 23rd birthdays (0 to 12)	Youth survey	600	Linear probability model	Number of quarters	0.48	***	<.001
Earnings	Total earnings between age 21 and 23	Youth survey	600	Ordinary least squares	Dollars (constant 2014)	$2,301	**	.003

Outcome	Outcome measure	Data source	n	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	p-value
Assets	Current balance across all checking, savings, and money market accounts	Youth survey		Ordinary least squares	Dollars	$646	**	.002

Note: **$p < .01$, ***$p < .001$, n.s. = "not significant." This table does not display estimates from all of the variables that were statistically controlled in the regression models. For a list of the control variables, please see the appendix (Table A-1 for the administrative data sample, and Table A-2 for the youth survey sample).

[a] Sample sizes were too small for bootstrap estimation. The results displayed in the table are from an instrumental variable model without bootstrapping.

Economic Hardships, Food Insecurity, Homelessness, and Receipt of Public Aid

The next group of outcomes pertained to hardships that transition-age foster youth may experience as young adults. Overall, additional time spent in care past age 18 was found to decrease the odds of past-year food insecurity, to reduce the chances and duration of homelessness, and to decrease the amount of public food assistance they received (see Table 4).

In terms of reliance on need-based public aid, administrative data analyses did not find significant changes in the amount of CalFresh aid youth received between ages 21 and 23. In the youth survey data, a statistically significant difference was found—a decrease of about $304 per year in extended care.[16] In terms of food insecurity experienced in the past year, each year in EFC reduced the odds of being classified as food insecure by about 21%. More time in extended care was also significantly associated with reduced risk of homelessness since last interview. Each year in care decreased the odds that youth were homeless or couch surfed by 19%, decreased the odds of youth experiencing an additional instance of homelessness by 23%, and decreased the total number of days youth were homeless by about 10 days. Time in extended care was not significantly associated with self-reported number of economic hardships.

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[16] The number of children residing with the youth also affects the amount of CalFresh benefits. We ran a regression model identical to the one reported in Table 4, but that also controlled for the number of resident children youth had at Wave 4. This had a minor impact on the results about the effect of the number of months in EFC on CalFresh amount, decreasing the estimate by a few dollars to $293 ($p$ =.006).

Table 4. Estimated Impacts of EFC on Economic Hardship, Food Insecurity, Homelessness, and Receipt of Need-based Aid

Outcome	Outcome measure	Data source	n	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	p-value
Receipt of need-based public aid	Amount of CalFresh benefits received between age 21 and 23	Admin	25,938	Instrumental variable	Dollars (constant 2014)	-$284	n.s.	.131
Economic hardship	Number of hardships in past year before Wave 4 (0–6)	Youth survey	615	Poisson	Relative risk ratio	0.95	n.s.	.159
Food insecurity	USDA food insecurity measure at Wave 4	Youth survey	620	Logistic	Odds ratio	0.79	*	.013
Homelessness	Ever homeless or couch surfed since last interview	Youth survey	622	Logistic	Odds ratio	0.81	*	.026
	Number of times homeless since last interview (0–5 or more)	Youth survey	617	Poisson	Relative risk ratio	0.77	***	<.001
	Total number of days homeless since last interview (0–365)	Youth survey	616	Ordinary least squares	Number of days	-9.5	**	.004
Receipt of need-based public aid	Amount of CalFresh benefits received between age 21 and 23	Youth survey		Ordinary least squares	Dollars (constant 2014)	-$304	**	.008

Note: *$p < .05$, **$p < .01$, ***$p < .001$, n.s. = "not significant." This table does not display estimates from all of the variables that were statistically controlled in the regression models. For a list of the control variables, please see the appendix (Table A-1 for the administrative data sample and Table A-2 for the youth survey sample).

Health, Behavioral Health, and Social Support

The next set of outcomes involved youths' physical and behavioral health, as well as the amount of social support youth had at their disposal. These outcomes were only available in the youth survey data. The amount of time youth spent in care after age 18 was not associated with their overall health rating,[17] the odds of screening positive for a mental health problem, or the odds of screening positive for an alcohol/substance use problem.

In terms of social support, more time in extended care was not significantly associated with the likelihood that youths nominated more people they could turn to for emotional support, tangible support, and advice/guidance (see Table 5). Time in EFC was also not significantly associated with the number of professionals that youth nominated as a support person, such as case workers, therapists, and program staff. Finally, more time in EFC was associated with youth being significantly more likely to report that they had enough people to turn to for the three types of support we assessed.

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[17] In addition to the ordinal logistic regression model, we also ran a multinomial logistic regression model. These analyses treated youths' view of their health status (poor/fair, good, very good, and excellent) as distinct categories rather than as degrees on a single continuum. The conclusion from the multinomial logistic regression analysis was the same as the conclusion reached from the ordinal logistic regression analysis: EFC was not significantly related to youths' health status ($p > .10$).

Table 5. Estimated Impacts of EFC on General Health, Behavioral Health, and Social Support

Outcome	Outcome measure	Data source	Sample (*n*)	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	*p*-value
General health	General health rating	Youth survey	620	Ordinal logistic regression	Odds ratio	1.08	n.s.	.286
Mental health	Any mental health disorder	Youth survey	597	Logistic regression	Odds ratio	1.00	n.s.	.999
Alcohol/substance use	Any alcohol/substance use disorder	Youth survey	617	Logistic regression	Odds ratio	1.25	n.s.	.081
Social support	Total number of nominated supports (0–9)	Youth survey	621	Poisson	Relative risk ratio	1.01	n.s.	.568
	Total number of nominated professionals (0–3 possible)	Youth survey	620	Poisson	Relative risk ratio	1.11	n.s.	.291
	Adequacy of social support (0–6)	Youth survey	620	Ordinal logistic regression	Odds ratio	1.25	**	.005

Note: **$p < .01$, n.s. = "not significant." This table does not display estimates from all of the variables that were statistically controlled in the regression models. For a list of the control variables, please see the appendix (Table A-2 for the youth survey sample).

Pregnancy and Parenting

Youth survey data also allowed us to investigate new pregnancies and childbirths that occurred since participants' last CalYOUTH interview. Statistically significant relationships were not found between time in extended care and the odds of becoming pregnant or the odds of having a child (see Table 6). This was true when investigating male and female participants separately.

Table 6. Estimated Impacts of EFC on Pregnancy and Parental Status

Outcome	Outcome measure	Data source	Sample (*N*)	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	*p-*value
Pregnancy	Became pregnant/impregnated female since last interview	Youth survey	601	Logistic regression	Odds ratio	0.92	n.s.	.404
Parental status	Had a child since last interview	Youth survey	600	Logistic regression	Odds ratio	1.03	n.s.	.787

Note: n.s. = "not significant." This table does not display estimates from all of the variables that were statistically controlled in the regression models. For a list of the control variables, please see the appendix (Table A-2 for the youth survey sample).

Criminal Justice System Involvement and Victimization

The final set of outcomes involved criminal justice system involvement and victimization, which came from information gathered from the youth surveys. Each year in extended care was associated with a significant drop in the odds of being arrested, but not with the odds of being convicted of a crime (see Table 7). For arrest, the expected odds decreased by about 28% with each additional year spent in care past age 18. Time in extended care was not found to be significantly associated with the odds of experiencing each of the three types of victimization that were assessed.

Table 7. Estimated Impacts of EFC on Criminal Justice System Involvement and Victimization

Outcome	Outcome measure	Data source	Sample N	Type of regression	Outcome unit	Change in outcome from an additional year in care		
						Estimate	Sig.	*p*-value
Criminal justice system involvement	Arrested since last interview	Youth survey	574	Logistic regression	Odds ratio	0.72	*	.010
	Convicted of a crime since last interview	Youth survey	594	Logistic regression	Odds ratio	0.85	n.s.	.355
Victimization	Physically assaulted in 12 months prior to Wave 4	Youth survey	618	Logistic regression	Odds ratio	0.86	n.s.	.464
	Weapon pulled or used on respondent in 12 months prior to Wave 4	Youth survey	573	Logistic regression	Odds ratio	1.26	n.s.	.247
	Sexual victimization since last interview	Youth survey	590	Logistic regression	Odds ratio	1.26	n.s.	.131

Note: *$p < .05$, n.s.="not significant." This table does not display estimates from all of the variables that were statistically controlled in the regression models. For a list of the control variables, please see the appendix (Table A-2 for the youth survey sample).

Differential Impacts of Extended Care by Gender

We explored whether the impact of extended foster care on outcomes differed by gender. In both the youth survey sample and the administrative data sample, to test gender differences in the impact of EFC on each outcome, we added an interaction term in the regression models (gender x years in EFC). If the interaction term is statistically significant, it indicates that the effect of EFC on the outcome was different for males and females. Only statistically significant differences ($p < .05$) are reported.[18]

In the administrative data sample, each year in extended care predicted an increase of $4,309 in total earnings for females; the effect for males was about $2,207 less than the effect for females ($p < .05$). The effect of EFC years on the number of semesters completed between ages 21 and 23 also differed by gender, but was not significantly related to semesters completed for either males or females.[19]

From the youth survey data, we found that time in extended care had a stronger effect for males than females on reducing the number of times youth were homeless since their last interview. For females, each year in extended care reduced the risk of another time being homeless by 14% (Incidence Risk Ratio [IRR] = 0.86, $p < .05$). Compared to females, the expected risk of another time being homeless for males is reduced by 24% for each additional year in EFC (interaction term of male x EFC years: IRR = 0.76, $p < .05$).

Differential Impacts of Extended Care by Race/Ethnicity

We also examined differences in the impact of EFC on outcomes by race and ethnicity. In both the youth survey data and the administrative data, we compared differences between specific race/ethnicity groups: African American youth, white youth, Hispanic youth, and youth in a combined group (consisting of multiracial, Asian, Pacific Islander, Hawaiian Native, and Native American).[20] To test race/ethnicity differences in the impact of EFC on each outcome, we added interaction terms in the regression model between the race/ethnicity variable and the years in EFC variable. If the interaction term is statistically significant, the finding indicates that the effect of EFC on the outcome differs between the two race/ethnicity groups being compared (e.g., African American youth vs. Hispanic youth).

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[18] In the administrative data sample, bootstrap estimation was used to estimate the standard errors.

[19] The effect of EFC for males was significantly greater than the effect for females, by 0.19 semesters ($p < .05$). However, although the effect of EFC for males and females significantly differed, the amount of time in EFC was not found to significantly impact the number of semesters completed for either males or females (estimate = -0.21 semesters, $p > .05$).

[20] Small samples sizes prevented us from examining differences in EFC impact separately for the subgroups of youth within the other race/ethnicity group.

In the administrative data sample, time in EFC was found to have a stronger effect on increasing the probability of ever enrolling in college by age 23 for white youth, Hispanic youth, and youth in the "other" race/ethnicity group than for African American youth.[21]

In the youth survey data, the odds of being food insecure were significantly greater for white youth who spent no time in EFC than for Hispanic youth who spent no time in EFC (Odds Ratio [OR] = 4.13, $p < 05$). However, each year spent in EFC had a significantly larger impact of reducing the odds of being food insecure for white youth than for Hispanic youth.[22] The amount of time in EFC was found have a greater reduction in the estimated number of times homeless for the other three race/ethnicity groups than for African American youth.[23] In terms of reducing the number of days youth reported being homeless since their last interview, years in EFC had a greater impact for white youth than for African American youth.[24] Time in EFC was also found to have a greater effect on reducing the risk of sexual assault for youth in the "other" race/ethnicity group than for white youth.[25] It was also found that time in extended care had a smaller

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[21] For youth who spent no time in EFC, the expected probability of college enrollment by age 23 was higher for African American youth than for white youth (-11.7, $p < .001$), Hispanic youth (-17.0, $p < .001$), and youth in the "other" race/ethnicity group (-16.5, $p < .05$). However, the number of years spent in EFC did not significantly increase the probability of having ever enrolled in college by age 23 for African American youth (3.4, $p > .10$). Relative to the impact of EFC for African American youth, the impact of EFC was significantly greater for white youth by about 3.4 percentage points ($p < .05$), for Hispanic youth by about 5.1 percentage points ($p < .05$), and for youth in the "other" race/ethnicity group by about 5.6 percentage points ($p < .05$).

[22] For food insecurity, each year in EFC for Hispanic youth was not found to significantly decrease the risk of food insecurity (OR = 0.98, $p > .05$), but the impact of EFC on reducing food insecurity risk was significantly greater for white youth than Hispanic youth (interaction term of white x EFC years: OR=0.63, $p < .05$).

[23] For number of times homeless, each year in EFC for African American youth was not found to significantly affect the risk of becoming homeless an additional time (IRR = 1.02, $p > .10$). Compared to African American youth, the impact of EFC on reducing the risk of an additional time being homeless was greater for white youth (interaction term of white x EFC years: IRR = 0.67, $p < .01$), Hispanic youth (interaction term of Hispanic x EFC years: IRR = 0.73, $p < .05$), and youth in the "other" race/ethnicity group (interaction term of "other" x EFC years: IRR = 0.64, $p < .01$).

[24] For number of days homeless, each year in EFC for African American youth was not significantly associated with the number of days homeless (estimate = 3.9 additional days of homelessness, $p > .05$). The expected impact of each year in EFC was significantly greater for white youth than for African American youth by about 24 days (estimate = -24.1 days, $p < .05$). Importantly, for youth who spent no time in EFC, the number of days youth were expected to be homeless was marginally significantly higher for white youth than for African American youth, by about 51 days ($p < .10$). Thus, without any extended care white youth are expected to be homeless for more days than African American youth, and participating in EFC appears to reduce the gap in number of days homeless.

[25] For sexual assault, each year in EFC for white youth was not found to significantly decrease the risk of being assaulted in the prior 12 months (OR = 1.78, $p > .05$), but the estimated effect of EFC years was significantly greater for youth in the "other" race/ethnicity group youth than for white youth (interaction term of other x EFC years: OR=0.38, $p < .05$).

reduction in the odds of arrest for African American youth than for Hispanic youth.[26] Finally, the expected impact of a year in EFC on increasing the likelihood of having a high school credential by the age-23 interview was significantly stronger for white youth than for youth in the "other" race/ethnicity group.[27]

Cautionary Note on Instrumental Variable Models with the Youth Survey Data

To supplement the findings from the youth survey data, we also ran instrumental variable models using the youth survey data. This was intended to evaluate the impact of extended care with a more rigorous analytic method. However, as discussed in the Methods section, we were concerned that one of the key assumptions of instrumental variable models may not have been met. For several outcomes, conclusions drawn from the instrumental variable models differed from the results presented in the tables above. For example, when assessing college enrollment by age 23, the results in Table 3 indicated that each year in extended care increased the probability of enrolling in college by 11.7% ($p < .001$). Recall that this estimate was not far off from the estimate from the instrumental variable model using the administrative data (5.3%, $p < .008$). However, the instrumental variable model based on youth survey data produced a substantively and statistically different estimate (1.1%, $p = .920$). We were wary of these and other findings from the instrumental variables with the youth survey data. For this reason, we do not present the results here in full, but they are available upon request from the authors.

Study Limitations

There are several limitations that should be kept in mind when interpreting the findings of this study. Some of the limitations are specific to each of the two data sources used for the two sets of analyses. In the administrative data sample, we were limited in the number of outcomes that could be assessed and the statistical controls that could be included in the regression analyses. Some of the data sources are likely missing data for some youth. For example, since the measures of the number of quarters employed, earnings amount, and the amount of public aid benefit the youth received only pertain to California, these measures will not capture information for youth who moved out of state between the time they were 21 and 23. Our supplemental analyses that accounted for youths' residency did not substantively change the

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[26] For the odds of arrest since the last interview, the number of years African American youth spent in EFC was not significantly related to their odds of being arrested (OR = 1.30, $p > .10$). The impact of EFC on reducing the odds of arrest was significantly greater for Hispanic youth than for African American youth (interaction term Hispanic x EFC years: RRR = 0.47, $p < .05$).

[27] For the probability of completing a secondary education credential, the number of years spent in EFC for youth in the other race/ethnicity group was not significantly associated with their likelihood of finishing a credential (estimate = 3.1 percentage points, $p > .10$). The impact of EFC on increasing the probability of credential completion was significantly greater for white youth than for youth in the other race/ethnicity group (interaction term white x EFC years: estimate = 9.1 percentage points, $p < .05$).

findings or conclusions.[28] Likewise, there is a nontrivial percentage of youth who enrolled in college but who requested that their records be blocked in the data provided by the National Student Clearinghouse (about 12% in the administrative data sample). While this may lead to an underestimate of overall rate of college enrollment for the CalYOUTH Study populations, it seems unlikely that youths in extended foster care would differ from those not in care in their likelihood to request that their records be blocked. When evaluating the association between extended foster care and the amount of CalFresh benefits youth receive, it is important to keep in mind that we did not have detailed enough information on youths' participation in programs that could affect their CalFresh eligibility and benefits amount to account for how participation in such programs may influence the relationship between extended foster care and receipt of CalFresh benefits. This is particularly challenging for CalYOUTH participants who spent time in college, since numerous programs in California target current and former foster youth who attend college and students have limited CalFresh eligibility.[29]

In the youth survey sample, one of the biggest limitations is that the sample includes only post-AB12 youth (i.e., all youth could have potentially participated in extended foster care). Thus, if differences exist between youth who spent more time in extended care and youth who spent less time in extended care, if these differences are also related to the outcomes, and if these differences were not adequately captured by the baseline survey measures we used as controls, then this could impact the accuracy of our estimates. Moreover, a few of the outcomes we assessed are tied to the eligibility requirements to remain in extended care (e.g., ever enrolled in

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[28] We used data collected during the Wave 4 survey ($n = 622$) to examine whether differences existed between respondents who were in state and respondents who were out of state at the time of their interview. At the time of the Wave 4 interviews, 542 (87.1%) were residing in California and 80 (12.9%) were out of state. Since our measures of the number of quarters employed and earnings amount only captured employment/earnings that occurred in California, we expected in-state youth to be higher in these two measures than out-of-state youth. That is what we found. There were significant differences between out-of-state and in-state participants in the number of quarters employed between ages 21 and 23 (1.8 vs. 4.5, $p < .001$) and earnings between 21 and 23 ($4,134 vs. $18,146, $p < .001$). We also expected in-state youth to have received significantly more CalFresh benefits between ages 21 and 23 than out-of-state youth, which is what we found ($2,160 vs. $1,193, $p = .003$). An important question was whether the estimated impact of years in EFC on these three outcomes substantively changed after accounting for youth's in-state status at Wave 4. For all three outcomes, statistically controlling for in-state status did not substantively change the magnitude of the findings or the conclusions that were reached. For example, in terms of the number of quarters employed, in a model with no controls it was estimated that each year in EFC predicted 0.48 additional quarters employed ($p < .001$). The model that controlled in-state status at Wave 4 estimated that each year in EFC predicted 0.45 additional quarters employed ($p < .001$).
[29] Students enrolled at least half-time in higher education are generally ineligible for CalFresh unless they meet federal work requirements. However, a 2017 policy statement to counties from the California Department of Social Services identifies several programs targeting current and former foster youth—Guardian Scholars, Foster Youth Success Initiative, Cooperating Agencies Foster Youth Educational Support, Chafee Education and Training Voucher Program, and extended foster care—where program participation can render students exempt from CalFresh work requirements. See http://www.cdss.ca.gov/Portals/9/ACL/2017/17-05.pdf?ver=2017-02-15-111331-970.

college).[30] This makes it hard to disentangle whether time in extended care impacted the outcomes, whether obtaining the outcomes impacted the amount of time youth spent in extended care, or both. Finally, the youth survey data is missing about 14% of the young people who participated in the first interview wave of the longitudinal study. We compared the youth who participated in Wave 4 interviews with youth who did not complete Wave 4 interviews on the four outcomes available from administrative data and found statistically significant differences between these two groups. Generally, youth who completed the Wave 4 interview fared better on the identified outcomes than did youth who did not complete the interview[31] Other important differences between Wave 4 participants and nonparticipants may exist that could have affected our estimates of the impact of EFC. For example, in our Wave 4 descriptive report (Courtney et al., 2020), we found that females were more likely to have participated in the Wave 4 interviews compared to youth who did not participate. Differences between Wave 4 participants and nonparticipants were not found by their age, their race, their ethnicity, or their placement type at Wave 1. Additionally, youth who completed the Wave 4 interviews were significantly more likely to have stayed in care until their 21st birthday (67.3%) than were youth who did not participate in the Wave 4 interview (43.0%).

One limitation of both the administrative data analyses and the youth survey analyses is that both used a generic set of controls across a diverse set of outcomes. Ideally, the set of control variables would be tailored to each outcome based on theory and prior research. This will be a focus of our future work.

Conclusion

This report builds on the findings of earlier memos that examined the relationship between extended foster care and a host of youth outcomes at ages 19 (Courtney & Okpych, 2017) and 21 (Courtney, Okpych, & Park 2018). The present report extends the previous work by examining youth outcomes at age 23, fully 2 years after all CalYOUTH participants had exited foster care.

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[30] To remain in extended care, youth must be completing a secondary credential, enrolled in postsecondary education or training, be employed at least 80 hours per month, participate in trainings designed to remove barriers to employment, or qualify for a medical exemption.

[31] Of the 727 youths who participated in Wave 1, a total of 710 youths gave us permission to access their administrative data and were still living at the time of the Wave 4 field period. These 710 youths included 613 who participated in a Wave 4 interview and 97 who did not. We compared these two groups on four outcomes available from administrative data, and the Wave 4 participants generally fared better than youth who did not participate. Wave 4 participants were more likely to have ever enrolled in college (59.8% vs. 45.8%, $p = .023$), were employed for more quarters between ages 21 and 23 (4.2 vs. 3.0, $p = .002$), and had greater average earnings from employment between 21 and 23 ($16,374 vs. $9,194, $p < .001$). The Wave 4 respondents also received more than nonrespondents in CalFresh benefits between 21 and 23 ($2,035 vs. $1,461, $p = .034$). Note that the estimates for the Wave 4 respondents are slightly different than those reported in Table 2. This is because the estimates in Table 2 were weighted using the Wave 4 survey weights, while the estimates in this footnote were weighted using the Wave 1 survey weights.

This allows us to assess whether the positive effects of extended foster care that we observed at ages 19 and 21 persist well after the youths have left care or are attenuated as time goes on.

Overall, findings from the present report reinforce findings from the earlier analyses and provide evidence of the benefit of extended care on several key outcomes in early adulthood, 2 years or more after all of the youths involved in our study had left care. Federal and California policy prioritize youth engagement in school, work, or both during time spent in extended foster care. Consistent with those priorities, we found that more time spent in care past age 18 was associated with a variety of positive educational and employment outcomes for youths transitioning to adulthood from care in California. Greater time in care was associated with a greater likelihood of completing a high school credential and enrolling in college by age 23, and findings from our youth survey study provide tentative evidence that remaining in care is associated with an increased likelihood of obtaining a college degree by age 23. Remaining in care longer also increased the likelihood that youths would be employed, the amount of money they earned, and the savings they accumulated between their 21st and 23rd birthdays. It also decreased the amount of CalFresh benefits youth received over that same period. Young people who remained in extended care longer prior to their 21st birthday were also less likely to experience food insecurity and homelessness during the 2 years after they turned 21, and more likely to report that they had adequate social support when we interviewed them at age 23. Lastly, remaining in care longer between age 18 and 21 decreased the estimated odds that youths would be arrested between age 21 and 23.

Our supplemental analyses suggest that the influence of extended foster care may differ for some outcomes by gender or by race/ethnicity. For avoidance of homelessness, males seemed to benefit more than females from longer time spent in extended care. In contrast, longer time in extended care appears to have a larger increase for females than males in earnings between ages 21 and 23.

We also found some evidence that youths' race or ethnicity may be associated with the apparent benefits of EFC, for some outcomes. White youth, Hispanic youth, and youth in the "other" race group appeared to benefit more than African American youth from their time in EFC when it came to college enrollment by age 23. Whites appeared to benefit more than Hispanics from their time in EFC when it came to reducing their odds of experiencing food insecurity. The findings suggested that time in EFC benefitted whites more than youth in the "other" race/ethnicity group in terms of completing a high school credential by age 23, but benefitted youth in the "other" race/ethnicity group more than whites in reducing the risk of sexual assault. And African Americans appeared to benefit less than other groups from extended care when it came to the unwanted outcomes of homelessness and arrest between ages 21 and 23. Though no clear patterns emerged from our analyses of differences by race and ethnicity in the outcomes we find to be associated with extended care, it is somewhat troubling that African Americans appear to benefit less than other groups and whites benefit more than other groups for multiple outcomes we studied. Future studies should further explore possible differential impacts of EFC by gender, race, and ethnicity.

Similar to our earlier reports on extended care and youth outcomes at ages 19 (Okpych & Courtney, 2017) and 21 (Courtney, Okpych, & Park, 2018), in general, our findings indicate that remaining in care past age 18 is associated with a wide range of benefits for youths transitioning to adulthood from care and that most of those benefits are maintained years after the youths have left care. However, as our earlier reports also showed, extended care does not appear to positively influence other outcomes, including youths' physical and behavioral health and their likelihood of experiencing victimization. Further, the evidence of the ability of EFC to improve youths' persistence in postsecondary education remains mixed.

The absence of observed effects of remaining in care on some outcomes, and the modest size of the benefits of extended care we observed for some outcomes, should be interpreted in light of the challenges of implementing extended care. Anecdotal evidence from around the country suggests that jurisdictions providing extended foster care are finding that young adults in extended care may need more intensive support from caseworkers, on average, than has typically been provided to minors in foster care.

Another potential contributor to the absence of hoped-for effects of extended care on some outcomes is how recently, in practical terms, California embarked on providing care to young adults. Our youth survey sample reached their 18th birthday only 2 years into the implementation of California's extension of foster care. Using our administrative data for youth who reached the age of majority in care during the first three years of the law, we were only able to follow outcomes to age 23. Put simply, providing extended care in California, and in other states that extended care to young adults in recent years, remains a work in progress. Despite these challenges, to date the accumulation of evidence from CalYOUTH suggests that extended care has a range of positive impacts on youths' lives into early adulthood.

References

Courtney, M. E. (2009). The difficult transition to adulthood for foster youth in the US: Implications for the state as corporate parent. *Social Policy Report, 23*(1), 3–18.

Courtney, M. E., & Okpych, N. J. (2017). *Memo from CalYOUTH: Early findings on the relationship between extended foster care and youths' outcomes at age 19*. Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., Charles, P., Okpych, N. J., Napolitano, L., & Halsted, K. (2014). *Findings from the California Youth Transitions to Adulthood Study (CalYOUTH): Conditions of foster youth at age 17*. Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., & Hook, J. L. (2017). The potential educational benefits of extending foster care to young adults: Findings from a natural experiment. *Children and Youth Services Review, 72*(1), 124–132.

Courtney, M. E., Hook, J. L., & Lee, J. S. (2012): Distinct subgroups of former foster youth during young adulthood: Implications for policy and practice. *Child Care in Practice, 18*(4), 409–418.

Courtney, M. E., Okpych, N. J., Charles, P., Mikell, D., Stevenson, B., Park, K., Kindle, B., Harty, J., & Feng, H. (2016). *Findings from the California Youth Transitions to Adulthood Study (CalYOUTH): Conditions of youth at age 19*. Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., Okpych, N. J., Harty, J. S., Feng. H, Park, S., Powers, J., Nadon, M., Ditto, D. J., & Park, K. (2020). *Findings from the California Youth Transitions to Adulthood Study (CalYOUTH): Conditions of youth at age 23.* Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., Okpych, N. J., & Park, S. (2018). *Report from CalYOUTH: Findings on the relationship between extended foster care and youth's outcomes at age 21*. Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., Okpych, N. J., Park, K., Harty, J., Feng. H., Torres-García, A., & Sayed, S. (2018). *Findings from the California Youth Transitions to Adulthood Study (CalYOUTH): Conditions of youth at age 21*. Chicago, IL: Chapin Hall at the University of Chicago.

Courtney, M. E., Park, S., & Okpych, N. J. (2017). *Memo from CalYOUTH: Factors associated with youth remaining in foster care as young adults*. Chicago, IL: Chapin Hall at the University of Chicago.

Dworsky, A., Napolitano, L., & Courtney. M. E. (2013). Homelessness during the transition from foster care to adulthood. *American Journal of Public Health, 103*(S2), S318–S323.

Friborg, O., Clausen, L., & Rosenvinge, J. H. (2013). A five-item screening version of the Eating Disorder Inventory (EDI-3). *Comprehensive Psychiatry, 54*(8), 1222–1228.

Hook, J. L. & Courtney, M. E. (2011). Employment outcomes of former foster youth as young adults: The importance of human, personal, and social capital. *Children and Youth Services Review, 33*(10), 1855–1865.

Lee, J. S., Courtney, M. E., & Tajima, E. (2014). Extended foster care support during the transition to adulthood: Effect on the risk of arrest. *Children and Youth Services Review, 42*, 34–42.

Okpych, N. J., & Courtney, M. E. (2017). Who goes to college? Social capital and other predictors of college enrollment for youth in foster care. *Journal of the Society for Social Work and Research, 8*(4), 563–593.

Okpych, N. J., & Courtney, M. E. (2020). The relationship between extended foster care and college outcomes for foster care alumni. *Journal of Public Child Welfare, 14*(2), 254–276.

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., . . . Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry, 59*, 22–33.

Appendices

Table A-1. List of Control Variables in Regression Models Using State Administrative Data

Group	Variable	Description
Demographics	Sex	Sex of the youth (male or female)
	Race/ethnicity	Race/ethnicity of the youth (White, African American, Asian/Pacific Islander, Native American, Hispanic)
Risk factors	Probation history	Binary variable indicating whether the youth was ever supervised by the probation department.
	Mental health history	Binary variable indicating whether the youth ever had a history of mental health problems. This information was inputted into the administrative data system by the youth's child welfare worker(s).
	Alcohol/substance use history	Binary variable indicating whether the youth ever had a history of alcohol or substance use problems. This information was inputted into the administrative data system by the youth's child welfare worker(s).
Foster care history characteristics	Age entered foster care	A categorical variable indicating the age at which the youth first entered foster care.
	Primary placement type before age 18	A categorical variable indicating the type of placement the youth spent the most amount of time in while in foster care prior to age 18 (nonrelative foster home, relative foster home, therapeutic foster care, congregate care, supported independent living placement, transitional housing placement, other)
	Number of episodes before age 18	The youth's total number of distinct foster care episodes (i.e., spells) before age 18.
	Placement change rate	The average number of foster care placements per year the youth was in prior to the age of 18. For example, if a youth was placed in 10 different placements over the course of 5 years in care, their placement change rate would be 2.0 placements/year.

Maltreatment history	History of sexual abuse	Binary variable indicating whether the youth has a substantiated case of sexual abuse.
	History of physical abuse	Binary variable indicating whether the youth has a substantiated case of physical abuse.
	History of severe neglect	Binary variable indicating whether the youth has a substantiated case of severe neglect.
	History of neglect	Binary variable indicating whether the youth has a substantiated case of neglect.
	History of emotional abuse	Binary variable indicating whether the youth has a substantiated case of emotional abuse.
	History of other abuse	Binary variable indicating whether the youth has a substantiated case of another type of abuse (i.e., exploitation, caretaker absence/inability, at-risk sibling abuse, substantial risk).
County-level factors	Fair housing rent quintiles	Youth's supervising county was assigned to one of five quintiles based on the cost of the fair market rent for a two-bedroom apartment in that county. These data were obtained from the U.S. Department of Housing and Urban Development, which drew on data collected from the U.S. Census Bureau's American Community Survey (https://www.huduser.gov/portal/datasets/fmr.html).
	Youth unemployment rate quintiles	Youth's supervising county was assigned to one of five quintiles based on the unemployment rate for youth (ages 16–24) in that county. These data were obtained from the American Community Survey conducted by the U.S. Census Bureau (https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S2301&prodType=table).

Table A-2. List of Control Variables in Regression Models Using Youth Survey Data

Group	Variable	Description
Demographics	Sex	Sex of the youth (male or female)
	Race/ethnicity	Race/ethnicity of the youth (white, African American, Asian/Pacific Islander/Hawaiian Native/Alaskan Native, Hispanic, multiracial)
	Sexual minority status	Binary variable indicating whether youth identified their sexual orientation as 100% heterosexual or another sexual orientation.
	Age	Two continuous variables indicated the age of the youth at wave 1 and wave 4.
	Highest grade completed at wave 1	Categorical variable indicating the highest grade in school the youth had completed.
	Ever repeated a grade	Binary variable indicating if the youth had ever been held back a grade.
	Ever in a special education	Binary variable indicating if the youth had ever been placed in a special education classroom.
	Reading proficiency score	A continuous variable indicating the youth's age-normed reading proficiency score, based on a brief assessment using the Wide Range Achievement Test.
Risk and protective factors	Number social supports	A count variable (range 0 to 9) of the total number of individuals the youth nominated as someone he/she could turn to for emotional support, tangible support, and/or advice/guidance.
	Ever worked	Binary variable indicating whether the youth had ever worked for pay.
	Self-rated health	Categorical variable of the youth's appraisal of their general health (poor/fair, good, very good, excellent).
	Any mental health disorder	Binary variable if the youth screened positive for one or more of the mental health disorders assessed at Wave 1. We assessed the mental health status of youth using the Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID). The conditions assessed included: major depressive episode, dysthymia, mania, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, attention-deficit hyperactivity disorder, oppositional defiant disorder, conduct disorder, and symptoms of psychotic thinking.

	Any alcohol/substance use disorder	Binary variable if the youth screened positive for an alcohol or substance abuse or dependence at Wave 1. These disorders were screened using the Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID).
	Ever pregnant/impregnated female	Binary variable indicating if the youth had ever gotten pregnant (females) or ever impregnated a female (males) by Wave 1.
	Has any living children	Binary variable indicating if the youth had ever given birth to a living child (females) or ever fathered a child that was born (males) by Wave 1.
	Average delinquency score	A continuous variable (range 0 to 3) was calculated by taking the average score of 12 items asking about youth's involvement in theft, vandalism, fighting, trespassing, and other behaviors. Youth reported how often they engaged in each behavior during the past year: never, 1–2 times, 3–4 times, or 5 or more times.
	Ever spent a night in jail	Binary variable indicating if the youth had ever spent a night in jail by Wave 1.
	Physically assaulted in 12 months before Wave 1	Binary variable indicating if the youth had ever been jumped in 12 months prior to Wave 1.
	Had gun/knife pulled or used on them in 12 months before Wave 1	Binary variable indicating if the youth had ever had a gun or knife pulled on them or used on them (shot or stabbed) in 12 months prior to Wave 1.
	Ever sexually assaulted/molested before foster care	Binary variable indicating if the youth had ever been raped or sexually molested before entering foster care.
Foster care history characteristics	Ever in a congregate care placement	Binary variable indicating if the youth had even been placed in a group home, residential treatment facility, or a child caring institution (from administrative records).
	Ever in kinship foster care placement	Binary variable indicating if the youth had ever been placed in a foster home with relatives (from administrative records).

	Age entered foster care	A categorical variable indicating the age at which the youth first entered foster care.
	Number of episodes before age 18	Count variable of the youth's total number of distinct foster care episodes (i.e., spells) before age 18 (from administrative records).
	Number of placements before age 18	Count variable of the youth's total number of foster care placements before age 18 (from administrative records).
	Placement change rate	Continuous variable of the average number of foster care placements per year the youth was in prior to the age of 18 (from administrative records). For example, if a youth was placed in 10 different placements over the course of 5 years in care, their placement change rate would be 2.0 placements/year.
Foster care perceptions	Satisfaction with foster care	Categorical variable indicating how much the youth agreed that he/she was satisfied with his/her experience in foster care (disagree/strongly disagree, neither agree nor disagree, agree/strongly agree).
	History of sexual abuse	Binary variable indicating whether the youth has a substantiated case of sexual abuse (from administrative records), or if the youth reported experiencing sexual abuse in questions asked at wave 2.
Maltreatment history	History of physical abuse	Binary variable indicating whether the youth has a substantiated case of physical abuse (from administrative records), or if they reported experiencing one or more of seven instances of physical abuse asked about at wave 1 (e.g., caregiver ever hit them with a closed fist).
	History of severe neglect/neglect	Binary variable indicating whether the youth has a substantiated case of neglect (from administrative records), or if they reported experiencing one or more of nine instances of neglect asked about at wave 1 (e.g., caregiver ignored serious illness or injury or failed to obtain medical treatment).
	History of other abuse	Binary variable indicating whether the youth has a substantiated case of emotional abuse or another type of abuse (from administrative records).

County-level factors	County size/urbanicity	Youth's supervising county was assigned to one of four groups based on the population size and density (rural/suburban, urban, large urban, Los Angeles County).
	Fair housing rent quintiles	Youth's supervising county was assigned to one of five quintiles based on the cost of the fair market rent for a two bedroom apartment in that county. These data were obtained from the U.S. Department of Housing and Urban Development, which drew on data collected from the U.S. Census Bureau's American Community Survey (https://www.huduser.gov/portal/datasets/fmr.html)
	Youth unemployment rate quintiles	Youth's supervising county was assigned to one of five quintiles based on the unemployment rate for youth (ages 16-24) in that county. These data were obtained from the American Community Survey conducted by the U.S. Census Bureau (https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S2301&prodType=table).