



Report from CalYOUTH: Findings on the Relationship between Extended Foster Care and Youth's Outcomes at Age 21

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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 prior to the passage of the Fostering Connections Act provided early evidence on the impact of extended foster care (EFC) on youth outcomes, finding that time in EFC promoted educational attainment, increased earnings, and decreased instances of homelessness and criminal justice involvement (see, e.g., Courtney & Hook, 2017; Dworsky, Napolitano, & Courtney, 2013; Hook & Courtney, 2011; Lee, Courtney, & Tajima, 2014). An earlier report from the ongoing California Youth Transitions to Adulthood Study (CalYOUTH) found EFC to be associated with improved educational attainment, increased financial assets, reduced receipt of need-based public aid, and decreased homelessness, economic hardship, and criminal justice system involvement (Courtney & Okpych, 2017). The present report builds on that prior research by examining outcomes from the third interview wave of CalYOUTH, which took place when study participants were 21 years old or older.

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 in the California Youth Transitions to Adulthood Study (CalYOUTH). The first approach leveraged data on a large sample of over 40,000 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 three 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 616 young people who completed the first and third interview waves, conducted when the youth were, on average, 17 and 21 years old, respectively. Most of the two dozen outcomes assessed in this report using youth survey data came from the third 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 10–11%.
- Increased the number of quarters that youth were employed between their 18th and 21st birthdays (about half of a quarter for each year in extended care).
- Increased the amount of money youth had in back accounts by about \$404.
- Decreased the amount of money received in need-based public food assistance by more than \$700.
- Decreased the odds of experiencing an additional economic hardship (e.g., not being able to pay utility bills) experienced between the ages of 17 and 21 by about 12%.
- Decreased the odds of being homeless or couch-surfing between the ages of 17 and 21 by about 28%. 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 described a professional (e.g., caseworker, therapist, counselor, etc.) as a source of social support by about 42%. Also 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 became pregnant (females) or impregnated a female (males) between the ages of 17 and 21 by about 28%.

- Decreased the odds that youth had been arrested between the ages of 17 and 21 by about 41% and decreased the odds that youth had been convicted of a crime during the same period by about 40%.

Several outcomes were not significantly associated with the number of years in extended care. These included college persistence and number of semesters completed (among youth who entered college), earnings, food insecurity, physical and behavioral health, and victimization.

Supplemental analyses found that the impact of extended foster care differed by gender and by race/ethnicity for some outcomes. For males in college, more time in extended care increased the numbers of semesters they completed by age 21 by about half of a semester for each year in extended care. A significant association was not found for females. More time in extended care was found to increase the number of quarters females were employed. The findings suggest that females also saw a greater reduction than males in the amount of CalFresh benefits they received by age 21, although estimates varied between the administrative data and youth study data. The risk of becoming pregnant and having a child was significantly reduced by amount of time in EFC for females but not males. Differences by race/ethnicity were less consistent between data sources on the outcomes that were available in both the administrative data and the youth study data. For example, in terms of CalFresh benefits, white youth was the only group in the administrative data for whom time in extended care was not associated with a reduction in benefits receipt. However, a significant reduction in benefits receipt was found for white youth using the youth study data. Further exploration of possible differential impacts of EFC by gender, race, and ethnicity is an area that warrants more attention from future studies.

Conclusion

To date, the accumulation of evidence from CalYOUTH suggests that extended care has a range of positive impacts on youths' lives, though not 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 young adults. 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. Future analyses will examine outcomes as youth become older to determine whether the observed benefits of EFC last as youth move further into early adulthood. Future analyses will also use administrative data to assess outcomes for young people who aged out of care later in the evolution of extended care in California as policymakers and practitioners learned from their early efforts to support foster youth transitioning to adulthood. We will also take a more nuanced approach to examining specific outcomes, including analyses that will seek to shed light on the mechanisms that connect extended care to young adult outcomes. Research also needs to be conducted in other states that have passed EFC laws, since characteristics of the population, policy contexts, and resources may differ across states in ways that can affect the impact of extended care.

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 a previous memo (Courtney & Okpych, 2017), we reported early findings on the relationships between the amount of time youth remained in extended foster care (EFC) and host of youth outcomes. The earlier memo drew from data collected from our second round of interviews with young people participating in the ongoing California Youth Transitions to Adulthood Study (CaYOUTH), which took place when the youths were, on average, 19 years old. The memo yielded promising, albeit preliminary, findings about the impact of extended foster care. It was found that the number of years youth remained in care past their 18th birthday significantly increased their odds of finishing high school and enrolling in college, as well as the amount of money they were able to save. EFC was also associated with a decrease in several unfavorable outcomes, such as the chances of being homeless and being incarcerated, the number of economic hardships encountered, and the amount of need-based public aid received. These early findings from CaYOUTH were in line with results from prior studies that found EFC promoted educational attainment, increased earnings, and decreased instances of homelessness and criminal justice system involvement (Courtney & Hook, 2017; Dworsky, Napolitano, & Courtney, 2013; Hook & Courtney, 2011; Lee, Courtney, & Tajima, 2014).

This report builds on our previous memo by examining outcomes from the third CaYOUTH interview wave, which took place when participants were 21 years old, on average, and had all left foster care. 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 additional evidence about the benefits of extended care on outcomes for youth transitioning to adulthood from 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 40,000 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 18th and 21st birthdays, total earnings during that period, and total amount of CalFresh⁵ benefits received during that period. For a subgroup of the administrative data sample ($n = 13,696$), CWS/CMS data were also linked to National Student Clearinghouse (NSC)⁶ records to assess three college outcomes: enrollment in college by the 21st birthday, two-semester persistence by the 21st birthday, and number of semesters completed by the 21st birthday.

¹ For more information on the CalYOUTH Study, see: <https://www.chapinhall.org/research/cal youth/>

² An 8-day cutoff was used to ensure that youth with a very short stint in foster care (less than a week) were not included in the sample.

³ Assembly bill 12 (AB12) is California's law that extended that 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 Dworkey, 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 CalFresh is the name used in California for its version of the federal Supplemental Nutrition Assistance Program (SNAP).

⁶ 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 shows information on the six 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 college enrollment by age 21, the number of quarters youth were employed between ages 18 and 21, the amount earned between ages 18 and 21, and the amount of CalFresh benefits received between ages 18 and 21.

Table 1. Outcomes from the Administrative Data Sample

Outcome	Outcome measure	Total sample		Pre-AB12 youth		Post-AB12 youth		p-Value
		N	% / Mean (SD)	n	% / Mean (SD)	n	% / Mean (SD)	
Postsecondary education	Enrolled in college by age 21 ^a (%)	13,696	44.5	10,218	43.7	3,478	46.7	**
	Persisted through the first two college semesters by age 21 ^{a,b} (%)	6,094	49.6	4,469	49.4	1,625	50.1	n.s.
	Number of semesters completed through by age 21 ^{a,b,c} (Mean/SD)	5,914	2.5 (1.9)	4,328	2.4 (1.9)	1,586	2.5 (1.8)	n.s.
Employment	Total quarters employed between age 18 and 21 ^d (0 to 12) (Mean/SD)	41,923	3.1 (3.6)	30,106	2.9 (3.5)	11,817	3.6 (3.7)	***
Earnings	Total earnings (in 2014 dollars) between age 18 and 21 ^d (Mean/SD)	41,923	\$7,449 (\$16,351)	30,106	\$7,053 (\$16,236)	11,817	\$8,460 (\$16,599)	***
Receipt of need-based public aid	Amount of CalFresh benefits received between age 18 and 21 (in 2014 dollars) ^e (Mean/SD)	41,923	\$2,324 (\$3,715)	30,106	\$2,217 (\$3,609)	11,817	\$2,597 (\$3,959)	***

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

^a Data on college enrollment, persistence, completed semesters were obtained from the National Student Clearinghouse.

^b Analyses evaluating college persistence and number of semesters completed only include youths who had ever enrolled in college by age 21.

^c Note that the analysis of the number of completed semesters ($n = 5,914$) has 180 fewer youth than does the analysis of persistence ($n = 6,094$). Data were missing for these 180 youths on the number of semesters they enrolled (i.e., they were tagged as having completed a certificate but did not have enrollment date information).

^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 8.8 months past their 18th birthday (5.0 months for the pre-AB12 cohort⁷ 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 six outcomes assessed using the administrative data sample.⁸ When statistical assumptions are met, instrumental variable models provide rigorous, unbiased estimates of the policy under consideration.⁹ 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-1.¹⁰

⁷ 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.

⁸ 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 six outcomes.

⁹ 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 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.

¹⁰ 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

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 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.¹¹ The most notable downside of the administrative data analysis is the limited number of youth outcomes that can be assessed. Data from only six 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, Charles, Okpych, Napolitano, & Halsted, 2014; Courtney et al., 2016, and Courtney et al., 2018). 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), and 616 youths completed the third interview at age 21 in 2017 (85% of the baseline sample). We restricted our analyses of the youth survey sample to just the 616 young people who completed the first and third interview waves.

Table 2 shows the outcomes that were assessed using the youth survey data. Most of the two dozen outcomes came from the third round of interviews with the young people when the group was, on average, 21 years old.¹² 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 entering their 20s. As displayed in the table, most of outcomes were missing information from only a small fraction of the 616 respondents.

randomly drawn subset of the sample to get coefficient and standard error estimates' distributions and their mean points.

¹¹ 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.

¹² About 9% of the respondents were 22 years old at the time of their Wave 3 interview.

Table 2. Outcomes from the Youth Survey Sample

Outcome	Outcome measure	Sample (n)	% or Mean(SD)
Secondary education	Completed diploma, GED, other credential ^a (%)	527	82.7
Postsecondary education	Ever enrolled in college ^b (%)	616	58.2
Employment	Total quarters employed between youth's 18th and 21st birthdays ^c (scale of 0–12; Mean (SD))	594	4.2 (3.6)
Earnings	Total earnings between age 18 and 21 (in 2014 dollars ^c ; Mean (SD))	594	\$9,740 (\$15,839)
Assets	Current balance across all checking, savings, and money market accounts (Mean (SD))	598	\$1,476 (\$4,424)
Economic hardship	Number of hardships in past year before Wave 2 or Wave 3 ^d (scale of 0–6; Mean (SD))	609	2.1 (2.1)
Food insecurity	USDA Food Insecurity Measure at Wave 2 or Wave 3 ^e (%)	609	47.9
Homelessness	Ever homeless or couchsurfed since baseline interview (%)	616	49.7
	Number of times homeless since baseline interview (0–5 or more; Mean (SD))	612	0.9 (1.6)
	Total number of days homeless since baseline interview ^f (0–365; Mean (SD))	571	30.0 (81.3)
Receipt of need-based public aid	Amount of CalFresh benefits received between age 18 and 21 (in 2014 dollars ^g ; Mean (SD))	594	\$2,254 (\$3450)
General health	General health rating		
	Poor/Fair		21.4
	Good	614	35.2
	Very Good		21.1
	Excellent		22.3
Mental health	Any mental health disorder ^h	606	25.0
Alcohol/substance use	Any alcohol/substance use disorder ⁱ	606	12.2
Social support	Total number of nominated supports (maximum of 9; Mean(SD))	615	2.8 (1.3)
	Total number of nominated professionals ^j (maximum of 3; Mean(SD))	615	0.15 (0.40)
	Adequacy of social support ^k (scale of 0 to 6; Mean(SD))	613	4.66 (1.60)

Pregnancy	Became pregnant/impregnated female since baseline interview (%)	599	39.0
Parental status	Had a child since baseline interview (%)	597	27.8
Criminal justice system involvement	Arrested since baseline interview (%) Convicted of a crime since baseline interview (%)	596	22.1
Victimization	Physically assaulted in 12 months prior to Wave 2 or prior to Wave 3 ^l (%)	596	4.5
	Weapon pulled or used on respondent in 12 months prior to Wave 2 or prior to Wave 3 ^m (%)	594	20.6
	Sexual victimization since last interview ⁿ (%)	580	11.4

^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 used with the administrative data sample, the college enrollment rate was 53.3%.

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

^d The total number of distinct types of hardships that the youth experienced, either at Wave 2 or Wave 3, was tallied. If a youth experienced the same hardship at Wave 2 and Wave 3, the hardship was only counted once. 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 2% of youth reported being homeless for more than 365 days.

^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. (2018) 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 was 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 101 in Courtney et al. (2018) for more information.

Similar to 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.¹³ 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 (i.e., 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 conclusions¹⁴ and

¹³ 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.

¹⁴ 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 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 8, the instrument significantly

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.

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 21 and on the number of quarters they were employed between ages 18 and 21. Each additional year that youth spent in care past age 18 increased the expected probability of enrolling in college by about 11%. Each year in extended care predicted that that youth would be employed for about half of a quarter more between ages 18 and 21. Among the youth who made it to college before age 21, the amount of time spent in extended care was not significantly related to their chances of persisting through two semesters in college or the total number of semesters they completed.¹⁵ A statistically significant relationship was not found between time spent in extended care and the total amount of earnings from employment in California.

Similar results were found in the youth survey sample for the outcomes assessed in both analyses. Each year in extended foster care predicted about a 10% increase in the probability of enrolling in college. One year in extended care also predicted that that youth would be employed about half of a quarter more between ages 18 and 21. There was also no statistically significant association between time in extended care and total earnings from age 18 to 21.

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 third interview wave at age 21. Second, more time in extended care predicted greater savings. For each year spent in extended care, youth were expected to have an extra \$404 in their bank account. For youth who stayed in care until age 21, this translated to having about \$1,200 more in the bank compared to youth who spent no time in extended care.

¹⁵ We also ran the two analyses of college persistence and semesters completed with entire NSC sample ($n = 13,696$). The relationships were not statistically significant for either the two-semester persistence analysis (estimate = 3.6%, $p = .201$) or the number of completed semesters (estimate = 0.19, $p = .113$).

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 21	Admin	13,559	Instrumental variable	Percentage	8.5%	*	.032
	Persisted through the first two college semesters by age 21	Admin	6,049	Instrumental variable	Percentage	2.4%	n.s	.632
	Number of completed semesters by age 21	Admin	6,049	Instrumental variable	Number of semesters	0.11	n.s	.564
Employment	Totals quarters employed between age 18 and 21 (0 to 12)	Admin	41,561	Instrumental variable	Number of quarters	0.60	**	.001
Earnings	Total earnings between age 18 and 21	Admin	41,561	Instrumental variable	Dollars (constant 2014)	\$1,382	n.s	.112
Secondary education	Completed diploma, GED, other credential	Youth survey	527	Linear probability model	Percentage	8.2%	***	<.001
Postsecondary education	Ever enrolled in college	Youth survey	616	Linear probability model	Percentage	10.6%	***	<.001
Employment	Total quarters employed between youth's 18th and 21st birthdays (0 to 12)	Youth survey	594	Linear probability model	Number of quarters	0.36	*	.015
Earnings	Total earnings between age 18 and 21	Youth survey	594	Ordinary least squares	Dollars (constant 2014)	\$602	n.s	.275
Assets	Current balance across all checking, savings, and money market accounts	Youth survey	598	Ordinary Least Squares	Dollars	\$404	*	.014

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).

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 number of economic hardships youth encountered, 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 found that each year spent in care past age 18 decreased the amount of CalFresh aid youth received between ages 18 and 21 by about \$703. The estimated reduction was greater in the youth sample data (a decrease of about \$1,090 per year in extended care).¹⁶ In terms of economic hardships, such as not being able to pay bills and having utilities shut off, each year in EFC reduced the odds of experiencing an additional hardship by about 12%. More time in extended care was also significantly associated with reduced risk of homelessness between ages 17 and 21. Each year in care decreased the odds that youth were homeless or couchsurfing by 28%, decreased the odds of youth experiencing an additional instance of homelessness by 32%, and decreased the total number of days youth were homeless by about 15 days. Time in extended care was not associated with self-reported food insecurity.

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 between Waves 1 and 3. This had a minor impact on the results about the number of months in EFC on CalFresh amount, decreasing the estimate by a few dollars to \$1,043 ($p < .001$).

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 18 and 21	Admin	41,561	Instrumental variable	Dollars (constant 2014)	-\$703	***	<.001
Economic hardship	Number of hardships in past year before Wave 2 or Wave 3 (0–6; Mean/SD)	Youth survey	609	Poisson	Relative risk ratio	0.88	***	<.001
Food insecurity	USDA food insecurity measure at Wave 2 or Wave 3 (%)	Youth survey	609	Logistic	Odds ratio	0.85	n.s.	.090
	Ever homeless or couchsurfing since baseline interview (%)	Youth survey	616	Logistic	Odds ratio	0.72	***	<.001
Homelessness	Number of times homeless since baseline interview (0–5 or more)	Youth survey	612	Poisson	Relative risk ratio	0.68	***	<.001
	Total number of days homeless since baseline interview (0–365)	Youth survey	571	Ordinary least squares	Number of days	-14.9	***	<.001
Receipt of need-based public aid	Amount of CalFresh benefits received between age 18 and 21 (Mean/SD)	Youth survey	594	Ordinary least squares	Dollars (constant 2014)	-\$1,049	***	<.001

Note: *** $p < .001$, 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 rating¹⁷ or the odds of screening positive for a mental health problem. The relationship between years in EFC and the odds of an alcohol/substance use problem bordered statistical significance ($p = .051$), with longer time in extended care being associated with an increase in the odds of a self-reported substance use problem. As explained in the Findings section, there was a statistically significant association for females but not for males.

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. However, this measure included many types of individuals, such as romantic partners, friends, and family members, as well as professionals and other types of people youth might come in contact with if they stayed in EFC. A second measure of social support was limited to just the number of professionals that youth nominated as a support person, such as case workers, therapists, and program staff. Remaining in care beyond age 18 significantly increased the odds of nominating more professionals; each additional year in extended care increased the odds that an additional professional was nominated as a support by about 39%. 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.

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	614	Ordinal logistic regression	Odds ratio	1.09	n.s.	.272
Mental health	Any mental health disorder	Youth survey	606	Logistic regression	Odds ratio	1.01	n.s.	.903
Alcohol/substance use	Any alcohol/substance use disorder	Youth survey	606	Logistic regression	Odds ratio	1.33	n.s.	.051
Social support	Total number of nominated supports (0–9)	Youth survey	615	Poisson	Relative risk ratio	1.03	n.s.	.185
	Total number of nominated professionals (0–3 possible)	Youth survey	615	Poisson	Relative risk ratio	1.42	**	.008
	Adequacy of social support (0–6)	Youth survey	613	Ordinal logistic regression	Odds ratio	1.16	*	.049

Note: * $p < .05$; ** $p < .01$. 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 between the ages of 17 and 21. For each year spent in care past age 18, the odds that youth became pregnant or impregnated a female significantly decreased, by about 19%. A statistically significant relationship was not found between time in extended care and the odds of having a child. See the final subsection in the Findings section for more information about gender differences.

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 baseline interview	Youth survey	599	Logistic regression	Odds ratio	0.82	*	.038
Parental status	Had a child since baseline interview	Youth survey	597	Logistic regression	Odds ratio	0.84	n.s	.081

Note: * $p < .05$. 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 both the odds of being arrested and the odds of being convicted of a crime. For each outcome, the expected odds of these events decreased by about two-fifths 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 baseline interview	Youth survey	596	Logistic regression	Odds ratio	0.59	***	< .001
	Convicted of a crime since baseline interview	Youth survey	598	Logistic regression	Odds ratio	0.60	***	< .001
Victimization	Physically assaulted in 12 months prior to Wave 2 or prior to Wave 3	Youth survey	596	Logistic regression	Odds ratio	0.86	n.s.	.407
	Weapon pulled or used on respondent in 12 months prior to Wave 2 or prior to Wave 3	Youth survey	594	Logistic regression	Odds ratio	0.86	n.s.	.271
	Sexual victimization since last interview	Youth survey	580	Logistic regression	Odds ratio	1.09	n.s.	.552

Note: *** $p < .001$; 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-2 for the youth survey sample).

Differential Impacts of Extended Care by Gender

We explored whether the impact of extended foster care on the outcomes differed by gender. Only statistically significant differences ($p < .05$) are reported. In the administrative data sample, each year in extended care predicted an increase in the number of semesters completed for

males (0.45 semesters, $p = .035$), but was not significantly significant for females ($p > .10$). In terms of the total number of quarters youth were employed between ages 18 and 21, more time in EFC increased the number of quarters employed for females (0.58 quarters, $p = .016$) but was not significant for males ($p > .10$).

In the youth sample, for females, each year in extended care was expected to reduce the amount of CalFresh benefits received between 18 to 21 by \$1,454 ($p < .001$). For males, the estimated decrease was \$554 ($p = .005$). In the administrative data sample, no significant gender differences were found and reductions in public food assistance benefits were both statistically significant ($p < .05$) and not very different for males (a reduction of \$649 per year in EFC) than for females (a reduction of \$730 per year in EFC).

From the youth survey data, we found that extended care impacted pregnancy and parenting more for females than for males. Each year in care decreased the odds of becoming pregnant between the first and third interviews by nearly 40% for females (OR = 0.61, $p < .001$), but was not significantly related to the odds of impregnating someone among males ($p > .10$). Similarly, the odds of having a child between the first and third interviews decreased by about 37% for females (OR = 0.63, $p = .001$), but was not significantly related to the odds of becoming a parent for males ($p > .10$). Finally, we found a differential effect of extended care by gender on the likelihood of screening positive for a substance or alcohol use problem at the third interview. Each year in care past age 18 increased the odds of an alcohol or substance use problem for females (OR = 2.63, $p = .001$), but time in EFC was not significantly associated with these disorders for males ($p > .10$).

Differential Impacts of Extended Care by Race/Ethnicity

Race/ethnicity differences in the impact of EFC on outcomes were also examined. Using the administrative data sample, we were able to examine differences between African American youth, white youth, Hispanic youth, and youth in the "Other" race category for most outcomes. In the youth survey data, small sample sizes precluded us from assessing differences for youth in the "Other" race/ethnicity category.

In the administrative data sample, we found that each year in care significantly increased, by about 16.8% ($p = .005$), the likelihood that African American youth enrolled in college by age 21. Significant associations were not found for white youth, Hispanic youth, and youth in the "Other" category (all $p > .10$). Although a statistically significant association between EFC years and the probability of persisting in college was not found for youth overall, a significant increase was found when examining just Hispanic youth (16.6%, $p = .022$). Recall that in the administrative data sample, years in EFC significantly predicted the total number of quarters youth were employed between ages 18 and 21. When examining subgroups, the findings were statistically significant for African American youth (0.58 quarters, $p = .044$) and white youth (1.0 quarters, $p = .001$) but not Hispanic youth or youth in the "Other" race category (both $p > .10$). Also recall that earlier administrative data analyses found that more time in extended care significantly reduced the amount received in CalFresh benefits from ages 18 to 21 for youth

overall. In the administrative data sample, reductions in amount of public food assistance for white youth were not statistically significant (\$310, $p = .274$). Rather, statistically significant reductions were found for African American youth (a reduction of \$786, $p = .012$), Hispanic youth (a reduction of \$1,107, $p < .001$), and youth in the "Other" race category (a reduction of \$1,492, $p = .013$).

In the youth survey data, only one statistically significant difference was found by race/ethnicity. The decrease in CalFresh benefits received between ages 18 to 21 resulting from each additional year in extended care was significantly greater for Hispanic youth than for other youth. For each year in care, Hispanic youth saw a decrease of \$1,699 ($p < .001$), while the decrease was \$1,000 for white youth ($p < .001$) and nonsignificant for African American youth ($p > .10$).^{18,19}

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, the results in Table 3 indicated that each year in extended care increased the probability of enrolling in college by 10.6% ($p < .001$). Recall that this estimate was comparable to the estimate from the instrumental variable model using the administrative data (8.5%, $p < .05$). However, the instrumental variable model based on youth survey data produced an estimate in the opposite direction that was not statistically significant (-9.3%, $p = .384$). 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.

¹⁸ In the model that included just African American youth, the estimated association between years in care past age 18 and CalFresh benefits was a reduction of \$299 ($p = .575$).

¹⁹ We also ran models that controlled for whether or not the youth was born in the U.S. The estimates were very similar to those reported in text for Hispanic youth (a reduction of \$1,701, $p < .001$), White youths (a reduction of \$1004, $p < .001$), and African American youths (a reduction of \$299, $p = .583$). We ran another set of models controlling for the number of residential children between Waves 1 and 3, and results were comparable for Hispanic youth (a reduction of \$1,601, $p < .001$), White youths (a reduction of \$1,033, $p < .001$), and African American youths (a reduction of \$422, $p = .423$).

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 18 and 21.²⁰ Likewise, there is a nontrivial proportion of youth who enrolled in college but who requested that their records be blocked in the data provided by the National Student Clearinghouse. 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 CalFresh eligibility is limited for students.²¹

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 that are also related to the outcomes, and if these differences were not adequately captured by the baseline survey measures we used, then this could impact the

²⁰ We used data collected during the Wave 3 survey ($n = 616$) 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 3 interviews, 561 (91.1%) were residing in California and 55 (8.9%) 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. This is what we found. There were significant differences between in-state and out-of-state participants in the number of quarters employed (2.5 vs. 4.4, $p < .001$) and earnings (\$3,313 vs. \$10,391, $p < .001$). We also expected in-state youth to have received significantly more CalFresh benefits than out-of-state youth, but statistically significant differences were not found (\$2,228 vs. \$2,509, $p > .10$). 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 3. 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 0.47 additional quarters employed ($p = .004$). The model that controlled in-state status at Wave 3 estimated that each year in EFC predicted 0.45 additional quarters employed ($p = .007$).

²¹ 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>.

accuracy of our estimates. Moreover, a few of the outcomes we assessed are tied to the eligibility requirements to remain in extended care.²² This makes it hard to disentangle whether time in extended care is impacting the outcomes, whether obtaining the outcomes (e.g., enrolling in school or working) impacts the amount of time youth spent in extended care, or both. Finally, the youth sample is missing about 16% of the young people who participated in the first interview wave of the longitudinal study. We compared the youth who participated in Wave 3 interviews with youth who did not complete Wave 3 interviews on the four outcomes available from administrative data and did not find statistically significant difference between these two groups.²³ Nonetheless, other important differences between Wave 3 participants and nonparticipants may exist that could have affected our estimates of the impact of EFC.²⁴

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 from an earlier memo that examined the relationship between extended foster care and a host of youth outcomes at age 19 (Courtney & Okpych, 2017). The present report extends the previous work in three important ways. First, the present report examined youth outcomes at age 21, after the study participants had the opportunity to take full advantage of extended foster care. Second, the report included findings from a large sample of foster youth from state administrative data, which allowed for more rigorous analyses for some outcomes than was possible using the youth study data. Third, a broader range of outcomes was examined in the present report than in the previous memo, including some outcomes assessed using administrative data.

²² To remain in extended care, youth must be completing a secondary credential, working toward a postsecondary degree or credential, be employed at least 80 hours per month, participate in trainings designed to remove barriers to employment, or qualify for a medical exemption.

²³ Of the 727 youths who participated in Wave 1, a total of 713 youths gave us permission to access their administrative data and were still living at the time of the Wave 3 field period. These 713 youths included 605 who participated in a Wave 3 interview and 108 who did not. We compared these two groups on four outcomes available from administrative data: percent who enrolled in college, average number of quarters employed between ages 18 and 21, average earnings from employment between 18 and 21, and average amount received in CalFresh benefits between 18 and 21. The groups did not significantly differ ($p < .05$) on these four outcomes.

²⁴ For example, in our Wave 3 descriptive report (Courtney et al., 2018), we found that females were more likely to have participated in the Wave 3 interviews compared to youth who did not participate. Differences between Wave 3 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 3 interviews were significantly more likely to have stayed in care until their 21st birthday (67.7%) than were youth who did not participate in the Wave 3 interview (44.8%).

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. In line with a main objective of the law, more time spent in care past age 18 was associated with a greater likelihood of completing a high school credential and enrolling in college, being employed, and accumulating savings between youths' 18th and 21st birthdays. Young people who remained in extended care also experienced fewer economic hardships, such as not being able to afford to pay utility bills. Between the ages of 17 and 21, they were also less likely to have been homeless, experienced fewer instances of homelessness, and were homeless for fewer total days. Each additional year in extended care was also associated with decreased use of need-based food assistance, with especially large effects for females and Hispanic youth.

We also found that more time in extended care significantly decreased the estimated odds that females became pregnant or had a child between the ages of 17 and 21. This is an important finding, since at age 21 over one-quarter of female CalYOUTH participants indicated that they definitely did not wish to become pregnant the last time they become pregnant (Courtney et al, 2018). Further, the responsibilities of being a young parent can add stress, derail youth from completing their education, and make them more likely to need to turn to need-based programs to get by (Courtney, Hook, & Lee, 2012). Time in care decreased the estimated odds that youth were arrested and convicted of a crime. More time in extended care significantly increased the estimated odds that youth nominated a professional they could turn to for support and increased youths' perceptions of having enough support from others. Having one or more professionals that youth feel they can rely on may be particularly important for navigating uncharted territory, such as applying to college, signing a lease, or deciding on a career path (Okpych & Courtney, 2017). Professionals can help provide new information and resources that would otherwise be unavailable to the youth.

One unexpected finding pertained to substance and alcohol use problems. For females (but not males), more time in extended care was associated with a greater likelihood of screening positive for a substance or alcohol use problem at the time of their third interview. It may be that by remaining in care increased females' awareness of these problems or increased the monitoring that would lead to these types of problems being identified. It could also be that females with substance and alcohol use problems remain in care for longer periods of time in order to continue receiving support and treatment. However, it is unclear why the relationship with time in extended care would be present for alcohol/substance use problems and not mental health problems, and for females but not males. Further research is needed to determine whether this finding is replicated in other studies, and if so, to examine possible explanations for the finding.

Our supplemental analyses found that the impact of extended foster care differed by gender and by race/ethnicity for some outcomes. For males in college, more time in extended care was associated with an increase in the number of semesters completed by age 21 by a modest amount (about half of a semester for each year in extended care). A significant association was not found for females. More time in extended care was found to increase the estimated number of quarters females were employed. The findings suggest that females also saw a greater

reduction than males in the amount of CalFresh benefits they received by age 21, although estimates varied between the administrative data and youth study data. The estimated risk of becoming pregnant and having a child was significantly reduced by amount of time in EFC for females but not males. Differences by race/ethnicity were less consistent between data sources on the outcomes that were available in both the administrative data and the youth study data. For example, white youth was the only group in the administrative data for whom time in extended care was not associated with a significant reduction in benefits receipt, but a significant reduction in benefits receipt was found for white youth using the youth study data. Further exploration of possible differential impacts of EFC by gender, race, and ethnicity is an area that warrants more attention from future studies.

Similar to our earlier report on extended care and youth outcomes at age 19 (Okpych & Courtney, 2017), in our present analyses we did not find evidence of deleterious consequences of remaining in extended foster care. To the contrary, our findings indicate that remaining in care past age 18 helps to meet youths' basic needs, allows them to further their education and gain additional work experience, to save money, and to reduce the likelihood of becoming a parent at a young age and having contact with the criminal justice system. There were several outcomes that were not associated with time in extended care, such as physical and mental health and reduction in the odds of experiencing victimization. Time in care past age 18 also did not significantly increase the chances that foster youth persisted in college or completed more semesters by age 21. Extended care may play an important role in getting foster youth into college, but additional supports may be needed to address obstacles that arise after they enroll (Okpych & Courtney, 2017).

The absence of observed effects of remaining in care on some outcomes, and the modest size of the benefits of extended care we observe 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. This is not surprising given important differences between providing casework support to minors and young adults. The most obvious difference is the fact that minors in foster care receive day-to-day supervision and support from the adults directly responsible for their care (i.e., resource parents and group home staff) whereas half of young adults in extended care live in settings where that is generally not the case (e.g., SILPs and THP+FC). The standard practice of providing once-per-month caseworker visits to minors in care may not be an appropriate standard of caseworker contact for young adults in 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. 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. Although the original enabling legislation for extended foster care in California went into effect in 2012, numerous changes in state law have been made since then to address perceived shortcomings in the original

legislation. This has required state agencies to promulgate regulations governing the implementation of these changes in the law, including specifying how extended care interacts with other benefit programs (e.g., CalFresh and CalWORKs²⁵). The staff of relevant county agencies, in particular county child welfare agency caseworkers, have had to incorporate all of this new information into their day-to-day practice. Lastly, all of these changes are taking place while county child welfare agencies and their partners in the contract service provider community are learning how to care for a population that is almost entirely new to them. The findings reported here pertain to the experiences of young people transitioning to adulthood from foster care in California during a period of rapid evolution of California's program of extended care.

Despite these challenges, to date the accumulation of evidence from CalYOUTH suggests that extended care has a range of positive impacts on youths' lives. Future analyses will examine these and other outcomes as youth become older to determine whether the observed benefits of EFC last as youth move further into early adulthood. Future analyses will also use administrative data to assess outcomes for young people who aged out of care later in the evolution of extended care in California, as policymakers and practitioners learned from their early efforts to support foster youth transitioning to adulthood. We will also take a more nuanced approach to examining specific outcomes, including analyses that will seek to shed light the mechanisms that connect extended care to young adult outcomes. Research is also needed from other states that have passed EFC laws, since characteristics of the population, policy contexts, and resources may differ across states in ways that can affect the impact of extended care.

²⁵ CalWORKs is California's Temporary Assistance to Needy Families program.

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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 3.
	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.
Risk and protective factors	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.
	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).
		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:
	Any mental health disorder	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).

	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).
