

A Multi-Level Analysis of the Effects of Independent Living Programs on Educational Attainment, Employment, and Housing Outcomes of Youth Aging Out of Foster Care

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Youth aging out of foster care system normally face multiple disadvantages

in terms of educational attainment, employment, housing, financial stability, and life skills compared with children in the general population. About two-thirds of eligible youth in care receive Independent Living Programs (ILPs), which are designed to support youth and ensure a successful transition to adulthood. The objective of this paper is to examine whether ILPs are effectively promoting better outcomes (e.g., educational attainment, employment, housing) for youth aging out of foster care. Using data from the National Youth in Transition Database (NYTD), this study used Hierarchical Generalized Linear Models (HGLM) to investigate how different services from ILPs impact the educational attainment, employment, and homelessness of youth aging out of foster care across all 50 states in the United States. The study sample included youth in foster care from a FY 2014 cohort ($N = 5633$) on Wave 3 at age 21. Controlling for all the covariates, youth who received post-secondary educational support, budget and financial management, and financial assistance for education were more likely to achieve higher educational attainment. Youth who received post-secondary educational support and supervised independent living were more likely to get employed. The results indicated that certain types of ILPs services were associated with positive outcomes in terms of education, employment and



housing. Post-secondary educational support service was found to be the most effective type of service for improving all the outcomes. The findings suggest the importance of providing ILPs to youth aging out of foster care. In addition, variation in service delivery and implementation fidelity across states must be taken into consideration.

As reported by the Adoption and Foster Care Analysis and Reporting System (AFCARS), there were approximately 442,995 children and adolescents in foster care in 2017. Among them, 195,360 (45%) were in nonrelative foster family homes and 140,675 (32%) were in relative foster family homes. About half of them (56%) had a case plan goal of reunification with parent(s) or primary caretaker(s), and 114,406 (27%) had a goal of adoption. In terms of outcomes, of the estimated 247,631 children who exited foster care during FY 2017, 121,203 (49%) were reunited with parent(s) or primary caretaker(s) and 58,104 (24%) were adopted (U.S. Department of Health and Human Services, 2018). However, not every child can reunify with their family or achieve permanency. Among the children who exited foster care during FY 2017, about 19,945 (8%) were discharged because of emancipation—also known as “aging out” of foster care (U.S. Department of Health and Human Services, 2018). Although the number fluctuates, there are about 20,000 to 30,000 youth who age out of foster care every year, adding up to a total of at least 300,000 youth in the past decade.

The transition from adolescence to adulthood is a crucial time period in a young person’s life. It plays an important role in adolescent development and has significant impacts on educational attainment, employment, health, and long-term well-being in adulthood (Eliason, Mortimer, & Vuolo, 2015). A successful transition to adulthood is associated with responsible decision-making, parental support, and community involvement at individual, family, and community levels. It also leads to more positive outcomes in various dimensions such as general health, social support, life satisfaction, and financial health (Oman, Vesely, Aspy, & Tolma, 2015; Serido, Shim, & Tang, 2013; Swartz, Kim, Uno, Mortimer, & O’Brien, 2011). However, adolescents



also face tremendous life challenges and developmental issues as they approach adulthood. Although this transitional time period is challenging for almost every child and adolescent, it is even more difficult for young people without sufficient social and economic resources. Compared with their peers in the general population, adolescents who lack the necessary resources are often negatively affected by poverty, parental incarceration, and family instability (Duncan, Brooks-Gunn, & Klebanov, 1994; Fomby & Bosick, 2013; Turney & Lanuza, 2017). For youth who were involved in the child welfare system, they were even more vulnerable to multiple life challenges in terms of finding employment, attending college, and securing a place to live (Donkoh, Underhill, & Montgomery, 2006).

Since many youth in foster care come from families that experience multiple problems including child abuse, substance abuse, and domestic violence, they often lack the sustained support from their families of origin such as funding for college, child care for working young parents, or a place to live. In addition, living independently is often extremely difficult for children in foster care because of physical disabilities, chronic illness, or mental illness they may experience (Osgood, Foster, & Courtney, 2010). Many youth who experience foster care have significant behavior problems and are in poorer mental and physical health compared with their peers in the general population (Lawrence, Carlson, & Egeland, 2006; Turney & Wildeman, 2016). According to AFCARS, about 61,737 (15%) youth in foster care are 16-21 years old, which makes youth aging out of foster care a vulnerable subpopulation (U.S. Department of Health and Human Services, 2018).

Youth aging out of foster care normally face multiple disadvantages in terms of educational attainment, employment outcomes, housing, financial stability, and life skills compared with children in the general population (Chor, Petras, & Pérez, 2018; Lemon, Hines, & Merdinger, 2005; Montgomery, Donkoh, & Underhill, 2006; Yelick, 2017; Woodgate, Morakinyo, & Martin, 2017). For example, about 50% of youth who have aged out of foster care have a high school diploma or general educational development (GED) degree, compared



to over 70% of youth not in care. Only about 15% of youth in foster care enroll in college-preparatory classes compared to 32% of youth not in care (Sheehy et al., 2001; Unrau, Font, & Rawls, 2012; Wolanin 2005). Another example is that youth aging out of foster care are at greater risk of experiencing homelessness; about 11%-36% of youth aging out of foster care become homeless compared to only about 4% of youth in general population (Dworsky, Napolitano, & Courtney, 2013; Fowler, Toro, & Miles, 2009). In addition, almost half of youth who have been in foster care are unemployed at any given time in their lives and have income below the poverty threshold. About 15% of them have substance abuse problems and 40%-60% of them have been pregnant during early adulthood (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; Stott, 2012).

Facing all these critical challenges, policy-makers and practitioners have made many efforts to support youth aging out of foster care. In 1986, the Title IV-E Independent Living Program (ILP) was created to provide states with resources that they could use to prepare their foster youth for the transition to adulthood (Mares, 2010). The Foster Care Independence Act (FCIA) was enacted in 1999, which established the Chafee Foster Care Independence Program (CFCIP). The program offers grants to states and tribes to help youth in foster care achieve self-sufficiency in areas such as education, employment, financial management, housing, emotional support, and social networks (Government Accountability Office, 2004). It includes a federal funding of \$140 million a year, which gives states more funding and greater flexibility in providing the independent living services. It also expands the eligibility up to age 21 for youth who have aged out of care. It allows states to use up to 30% of the funds for room and board and allows states to extend Medicaid coverage to youth up to age 21 (Collins, 2004; Government Accountability Office, 2004). To emphasize higher education for youth in foster care, the Educational and Training Vouchers Program (ETV) for youth aging out of care was added to the CFCIP in 2002. The ETV provides an additional \$60 million to states and tribes to make available vouchers for



postsecondary training and education to youth aging out of the foster care (Collins, 2004). In addition, the Fostering Connections to Success and Increasing Adoptions Act of 2008 (Pub. L. No. 110-351) expands support for older youth in foster care. It revises transition planning requirements and extends eligibility for Chafee transition services and Title IV-E payments to age 21 (Child Welfare Information Gateway, 2017).

About two-thirds of eligible youth in care receive independent living services, suggesting that independent living programs (ILPs) are widely used among those aging out of foster care (Avery, 2010; Yelick, 2017). In the past decades, this population has much attention, and many studies and evaluations have been conducted on the effectiveness of ILPs (Courtney et al., 2011; McMillen, 2005; Montgomery, Donkoh, & Underhill, 2006; Naccarato & DeLorenzo, 2008). Some research has shown potential positive effects of ILPs for youth aging out of our foster care (Naccarato & DeLorenzo, 2008; Yelick, 2017). However, the conclusions are mostly limited due to methodological challenges, including dated information on outcomes, reliance on brief follow-up periods, low response rates, small or nonrepresentative samples, samples that mix youth transitioning to adulthood from care with youth who left care during childhood or early adolescence, and failure to include longitudinal data (Courtney & Heuring, 2005; Donkoh, Underhill, & Montgomery, 2006; Montgomery, Donkoh, & Underhill, 2006).

The Administration for Children and Families (ACF) was required by law to plan a data collection system tracking the independent living services provided by states, and develop outcome measures that may be used to assess their performances in operating these independent living programs. To meet this requirement, ACF established the National Youth in Transition Database (NYTD) to collect data starting from 2010. This was a national sample from all 50 states that allowed for complicated, comprehensive data analysis at multiple levels. Although some studies have explored the effectiveness of ILPs using this dataset, most of them only use simple regression without acknowledging the



variance within contexts (Kelly, 2019; Cheatham, Randolph, & Boltz, 2020).). There were considerable variations among different states in terms of foster care extension status, implementation fidelity, and funding levels. Such nested structure is multilevel in nature, therefore making hierarchical linear modeling possible.

Given the limitations of existing studies and the availability of this national sample, the purpose of this paper is to find out whether ILPs are effectively promoting better outcomes (e.g. educational attainment, employment, and housing) for youth aging out of foster care, taken state level variation into consideration. The research question leading this study is: What are the effects of Independent Living Program (ILP) on educational attainment, employment, and housing outcomes of youth aging out of foster care?

Methods

Data and Sample

This study utilized data from the NYTD. It was created to track the services provided through the CFCIP and collect outcome measures to assess the effectiveness of the program (National Data Archive on Child Abuse and Neglect [NDACAN], 2014). The NYTD database contains data from all 50 states, as well as the District of Columbia and Puerto Rico. There were two components of this database: a services component and an outcomes component. The services component contained cross-sectional information on the services using funds provided by states through CFCIP and the youth who receive those services. Data were submitted by the states every six months on a continuing basis. The outcomes component contained the results of surveys conducted with youth to examine certain well-being, financial, and educational outcomes as they get older (NDACAN, 2014). Data from a survey on outcomes for a cohort of youth is provided every other year. The cohort was surveyed three times: a baseline survey at age 17, and two follow-ups at age 19 and 21.



The NYTD data were collected by the state agencies that administer the CFCIP and submitted to the Children's Bureau. Despite overlap, the two components were different in terms of the sample size and variables included. And the number of youth who were in the services component was much larger than the number of youth who were eligible to take the outcomes survey. Only about 5% of the youth who were in the services component were in the outcomes component. For the FY 2014 cohort, there were about 7,800 youth in the outcomes component and about 160,000 youth in the services component. All youth in foster care who turned 17 in the baseline year were in the baseline population. All youth in the baseline population were required to be contacted and asked to complete the NYTD Outcomes Survey. The cohort was a subset of the baseline population. To be in the cohort, a youth must be in the baseline population and complete the survey within 45 days of their 17th birthday. This study used the Services component combined with the Outcomes Survey of Cohort Age 17 in FY 2014 at Wave 3. For the FY 2014 cohort, the survey was conducted in FY2018 when they were 21 years old ($N = 5633$). Overall, missingness for each dependent variable and individual level predictors was less than 5%. Listwise deletion was used to handle missing data.

Measures

Dependent Variables

There were three individual-level dependent variables included in this study: educational attainment, employment, and homelessness. The variables were from the outcomes component and were recoded to binary variables. Educational attainment was measured by the highest educational certification received. A youth has received an education certificate if they have a high school diploma or general equivalency degree (GED), vocational certificate, vocational license,



associate's degree (e.g., AA), bachelor's degree (e.g., BA or BS), or a higher degree as of the date of the outcome data collection. Given that the proportion of youth who received vocational certificate, vocational license, AA, and BA was relatively small, they were combined with high school completion. The variable was recoded (1 = high school diploma/GED or higher degree, 0 = do not have high school diploma/GED or higher degree). Employment status was measured by current full-time employment or part-time employment. Youth were noted as employed full-time if they worked least 35 hours per week; they were noted as employed part-time if they worked between one and 34 hours per week, in one or multiple jobs, as of the date of the outcome data collection. The variables were recoded (1 = current full-time or part-time employed, 0 = not employed). The last dependent variable was homelessness. A youth was considered to have experienced homelessness if they had no regular or adequate place to live in the past two years (including living in a car, living on the street, or staying in a homeless or other temporary shelter). The variable was coded as: 1 = experienced homelessness, 0 = have not experienced homelessness.

Individual-Level Variables

The individual-level variables were from the services component. They were binary variables (1 = received this service, 0 = did not receive this service) and included services provided by ILPs in the following areas: special education, independent living needs assessment, academic support, post-secondary educational support, career preparation, employment programs or vocational training, budget and financial management, housing education and home management training, health education and risk prevention, family support and healthy marriage education, mentoring, supervised independent living, room and board financial assistance, education financial assistance, and other financial assistance.



State-Level Variables

There were two state-level variables included in the study. The first variable measured whether the states had extended foster care beyond age 18 (1 = yes, 0 = no) under the Federal Fostering Connections to Success and Increasing Adoptions Act of 2008. The data was obtained from the Children' Bureau (Child Welfare Information Gateway, 2017). The second variable measured average funding per child in foster care in each state. The variable was computed by dividing the total funding by the number of youth in foster care. The funding for the John H. Chafee Foster Care (Chafee) Program for Successful Transition to Adulthood and Education and Training Voucher (ETV) Program was obtained from Congressional Research Service (CRS) (Fernandes-Alcantara, 2012). The number of youth in foster care was obtained from the Child Trends analysis of data from the Adoption and Foster Care Analysis and Reporting System (AFCARS).

Covariates

Covariates were included to account for individual characteristics and foster care history. Child gender was coded as 1 for male and 0 for female. Race variables were dummy coded. Non-Hispanic White was coded as the reference group. Non-Hispanic Black, Hispanic/Latino, Asian, American Indian/Alaskan Native, Native Hawaiian/Other Pacific Islander, and Multi-Race were included in the race variables. Foster care status at outcomes collection was coded as 1 if the youth was under the placement or care responsibility of the State Title IV-B/IV-E agency in accordance with the definition of foster care in 45 CFR 1355.20 on the date of outcome data collection. Adjudicated delinquent was coded as 1 if a State or Federal court of competent jurisdiction had ever adjudicated the youth as a delinquent.



Analytical Strategy

Hierarchical generalized linear model (HGLM) was used to analyze the data. The goal of a logistic HLM analysis was to determine the impacts of state level variables and individual-level variables on the individual level outcomes when the outcome was dichotomous. Assumptions of HGLM including correct specification, independence, no measurement error for the predictors, and large sample size were tested. Sample descriptive statistics and bivariate correlations were computed, and the data were examined for collinearity. All analyses were conducted using HLM 7. Results from the conditional models are presented below. No IRB review is required for this public use dataset.

Results

Sample Characteristics

The descriptive statistics of the sample are shown in Table 1. Overall, 56.7% of the sample youth were female. The majority of the sample youth were non-Hispanic White (38.9%), non-Hispanic Black (28.8%) and Hispanic/Latino (23.9%). About 14.9% of the youth had adjudicated delinquency and 22.6% were in foster care at outcomes collection. For the ILPs services received by the sample youth, the rates were as follows: special education (22.6%), independent living needs assessment (39.6%), academic support (48.6%), post-secondary educational support (24.9%), career preparation (34.7%), employment programs or vocational training (18.2%), budget and financial management (33.6%), housing education and home management training (35.8%), health education and risk prevention (34.0%), family support and healthy marriage education (27.9%), mentoring (17.9%), supervised independent living (10.6%), room and board financial assistance (12.8%), education financial assistance (17.0%), other financial assistance (33.5%). For the dependent variables, 79.9% of the sample youth had high school degree or higher, 57.9% had full-time or part-time employment, 28.5% had ever experienced homelessness.



Table 1. Descriptive Statistics of Individual Variables (N = 5,633)

	<i>n</i> (%)
Child Gender	
Male	2439 (43.3)
Female	3194 (56.7)
Child Race (Ref: Non-Hispanic White)	
Non-Hispanic Black	1605 (28.8)
Hispanic/Latino	1332 (23.9)
Asian	55 (1)
American Indian/Alaskan Native	98 (1.8)
Native Hawaiian/Other Pacific Islander	10 (0.2)
Multi-Race	308 (5.5)
Adjudicated Delinquent	817 (14.9)
Foster Care Status at Outcomes Collection	1273 (22.6)
Services	
Special Education	1233 (22.6)
Independent Living Needs Assessment	2157 (39.6)
Academic Support	2649 (48.6)
Post-Secondary Educational Support	1358 (24.9)
Career Preparation	1892 (34.7)
Employment Programs or Vocational Training	1023 (18.2)
Budget and Financial Management	1831 (33.6)
Housing Education and Home Management Training	1950 (35.8)
Health Education and Risk Prevention	1850 (34.0)
Family Support and Healthy Marriage Education	1520 (27.9)
Mentoring	978 (17.9)
Supervised Independent Living	575 (10.6)
Room and Board Financial Assistance	700 (12.8)
Education Financial Assistance	928 (17.0)
Other Financial Assistance	1823 (33.5)
Educational Attainment	4490 (79.9)
Employment	3130 (57.9)
Homelessness	1561 (28.5)



State Level-Effect

Two state-level variables were included in the study: foster care extension and average funding per foster youth. As shown in Tables 2, 3, and 4, there were significant between-state variation among all three outcomes of educational attainment, employment, and homelessness. The variance components of each outcome were 0.358, 0.089, 0.182, respectively. The intraclass correlation coefficient (ICC) indicated that approximately 35% of the variation in each outcome was accounted for by state-level effects. However, neither foster care extension nor funding per foster youth was found to be significantly associated with the outcomes.

Educational Attainment

The estimates for the two-level logistic regression model for educational attainment are shown in Table 2. Controlling for all the explanatory variables and the random effect, youth who received post-secondary educational support ($OR = 1.718, p < .001$), budget and financial management ($OR = 1.242, p = .038$), and education financial assistance ($OR = 1.440, p = .003$) were more likely to achieve higher educational attainment. Youth receiving room and board financial assistance was negatively associated with educational attainment. For the unconditional model, the expected probability of having higher educational attainment was 81.2%.

Employment

The estimates for the two-level logistic regression model for employment are shown in Table 3. Controlling for all the explanatory variables and the random effect, youth who received post-secondary educational support ($OR = 1.427, p < .001$) and supervised independent living ($OR = 1.288, p = .024$) were more likely to become employed. Youth who received family support and healthy marriage education was negatively



Table 2. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Educational Attainment)

Variables	Model	
	Coefficient (SE)	Odds Ratio
Intercept	1.561 (0.325) ***	4.763
State Level Effect		
Foster Care Extension	0.231 (0.205)	1.260
Funding Per Foster Youth	-0.000 (0.001)	1.000
Child Gender	-0.114 (0.076)	0.892
Non-Hispanic Black	-0.033 (0.096)	0.967
Hispanic/Latino	-0.204 (0.108)	0.816
Asian	0.589 (0.489)	1.802
American Indian/Alaskan Native	-0.247 (0.276)	0.781
Native Hawaiian/Other Pacific Islander	0.491 (1.087)	1.633
Multi-Race	0.089 (0.178)	1.093
Adjudicated Delinquent	-0.260 (0.106) *	0.771
Foster Care Status at Outcomes Collection	0.600 (0.112) ***	1.822
Special Education	-0.393 (0.088) ***	0.675
Independent Living Needs Assessment	0.087 (0.089)	1.091
Academic Support	-0.114 (0.086)	0.893
Post-Secondary Educational Support	0.541 (0.114) ***	1.718
Career Preparation	0.031 (0.100)	1.031
Employment Programs or Vocational Training	-0.095 (0.111)	0.909
Budget and Financial Management	0.217 (0.104) *	1.242
Housing Education and Home Management Training	-0.119 (0.096)	0.888
Health Education and Risk Prevention	-0.179 (0.099)	0.836

Table 2. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Educational Attainment) (continued)

Variables	Model	
	Coefficient (SE)	Odds Ratio
Family Support and Healthy Marriage Education	-0.107 (0.102)	0.899
Mentoring	0.003 (0.108)	1.003
Supervised Independent Living	-0.083 (0.140)	0.920
Room and Board Financial Assistance	-0.348 (0.136) *	0.706
Education Financial Assistance	0.365 (0.125) **	1.440
Other Financial Assistance	0.040 (0.093)	1.041
Variance Component	0.358 ***	
Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$		

Table 3. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Employment)

Variables	Model	
	Coefficient (SE)	Odds Ratio
Intercept	0.552 (0.201) ***	1.737
State-Level Effect		
Foster Care Extension	-0.075 (0.119)	0.928
Funding Per Foster Youth	-0.000 (0.000)	1.000
Child Gender	0.070 (0.061)	1.072
Non-Hispanic Black	-0.116 (0.077)	0.891
Hispanic/Latino	0.098 (0.085)	1.102
Asian	0.438 (0.323)	1.549
American Indian/Alaskan Native	0.065 (0.234)	1.067
Native Hawaiian/Other Pacific Islander	0.581 (0.707)	1.787
Multi-Race	-0.008 (0.135)	0.992



Table 3. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Employment) (continued)

Variables	Model	
	Coefficient (SE)	Odds Ratio
Adjudicated Delinquent	-0.314 (0.088) ***	0.731
Foster Care Status at Outcomes Collection	0.296 (0.083) ***	1.344
Special Education	-0.596 (0.072) ***	0.551
Independent Living Needs Assessment	0.032 (0.068)	1.033
Academic Support	0.079 (0.068)	1.082
Post-Secondary Educational Support	0.356 (0.084) ***	1.427
Career Preparation	-0.103 (0.079)	0.902
Employment Programs or Vocational Training	0.075 (0.087)	1.078
Budget and Financial Management	0.057 (0.083)	1.059
Housing Education and Home Management Training	-0.097 (0.078)	0.907
Health Education and Risk Prevention	-0.094 (0.080)	0.910
Family Support and Healthy Marriage Education	-0.164 (0.082) *	0.848
Mentoring	0.060 (0.087)	1.061
Supervised Independent Living	0.253 (0.112) *	1.288
Room and Board Financial Assistance	-0.122 (0.107)	0.886
Education Financial Assistance	0.083 (0.089)	1.086
Other Financial Assistance	0.113 (0.071)	1.120
Variance Component	0.089 ***	
Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$		

associated with employment outcome. For the unconditional model, the expected probability of becoming employed was 57.8%.

Homelessness

The estimates for the two-level logistic regression model for homelessness are shown in Table 4. Controlling for all the explanatory variables and the random effect, youth who received post-secondary educational support ($OR = 0.727, p < .001$) were less likely to experience homelessness. The odds of experiencing homelessness for youth who did not receive post-secondary educational support were 1.376 times greater than the odds for youth who received it. For the unconditional model, the expected probability of experiencing homelessness was 30.0%.

Table 4. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Homelessness)

	Model	
Variables	Coefficient (SE)	Odds Ratio
Intercept	-0.972 (0.248) ***	0.378
State Level Effect		
Foster Care Extension	-0.188 (0.153)	0.828
Funding Per Foster Youth	0.000 (0.001)	1.000
Child Gender	-0.047 (0.067)	0.954
Non-Hispanic Black	0.099 (0.084)	1.104
Hispanic/Latino	-0.108 (0.095)	0.898
Asian	-0.822 (0.422)	0.439
American Indian/Alaskan Native	0.339 (0.238)	1.403
Native Hawaiian/Other Pacific Islander	-1.135 (1.075)	0.321
Multi-Race	0.131 (0.142)	1.140
Adjudicated Delinquent	0.417 (0.093) ***	1.517



Table 4. Estimates for Two-Level Logistic Regression Model (N = 5,633) (DV: Homelessness) (continued)

Variables	Model	
	Coefficient (SE)	Odds Ratio
Foster Care Status at Outcomes Collection	-0.797 (0.100) ***	0.451
Special Education	-0.067 (0.081)	0.935
Independent Living Needs Assessment	-0.042 (0.077)	0.959
Academic Support	0.020 (0.075)	1.021
Post-Secondary Educational Support	-0.320 (0.093) ***	0.727
Career Preparation	0.162 (0.086)	1.176
Employment Programs or Vocational Training	-0.021 (0.096)	0.980
Budget and Financial Management	0.048 (0.090)	1.049
Housing Education and Home Management Training	0.121 (0.085)	1.129
Health Education and Risk Prevention	0.059 (0.088)	1.061
Family Support and Healthy Marriage Education	-0.078 (0.090)	0.925
Mentoring	0.121 (0.093)	1.129
Supervised Independent Living	0.120 (0.122)	1.127
Room and Board Financial Assistance	0.062 (0.119)	1.064
Education Financial Assistance	-0.163 (0.100)	0.849
Other Financial Assistance	0.053 (0.079)	1.055
Variance Component	0.182 ***	
Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$		

Discussion

The innovation of this study is that it includes factors associated with educational, employment, and housing outcomes at both the individual and state level. The study includes state-level factors such as funding level and foster care extension status and examines the relationships between individual-level factors and youth outcomes. By taking contextual effect into consideration, the study aims to extend our knowledge of youth aging out of foster care by using a large national sample. State-level factors contribute significant, considerable variation to youth outcomes, including educational attainment, employment, and housing. However, state-level predictors such as foster care extension and funding per youth were found not to be significantly associated with outcomes. Therefore, state-level variation may be explained by other predictors, such as service implementation, state foster care policy, and agency morale. Our findings suggest that variation in service delivery and implementation fidelity across states must be taken into consideration.

The findings also suggest that some certain types of ILP services are associated with positive outcomes in terms of education, employment, and housing outcomes after accounting for contextual factors. Specifically, post-secondary educational support service is found to be the most effective type of service for improving all outcomes, not only educational attainment. In addition, the expected probability of having higher educational attainment was the highest among the three outcomes, while the employment outcome was lower than that. This finding is consistent with the previous studies showing that youth use education-related services most frequently (Okpych, 2015).

Post-secondary educational support includes classes for test preparation such as the Scholastic Aptitude Test (SAT), counseling about college, information about financial aid and scholarships, help completing college or loan applications, or tutoring while in college. The results suggest the importance of providing such services to youth in the future. One interesting finding from the results is that educational



financial assistance is significantly associated with educational attainment. However, room and board financial assistance was negatively associated with educational attainment. This negative association may be attributed to the extra burden of finding a place to live that youth in foster care face. This finding stresses the importance of providing financial support to youth aging out of foster care. As a result of this finding, financial support may act as a key factor in improving educational attainment—but its side effects need to be considered too.

Another component worth noticing is that foster care status at outcomes collection was a significant predictor of all the outcomes. For example, remaining in foster care at an older age was positively associated with improving educational attainment, employment, and housing outcomes, suggesting that foster care status does act as a protector for youth aging out during the transitional time period. Many research have found similar results that remaining in foster care beyond age 18 could significantly reduce risks and improve positive outcomes for youth aging out (Courtney, Okpych, & Park, 2018; Courtney, Park, & Okpych, 2017).

Our study also has some limitations. First, the dataset we use only contains variables that measure whether youth has received certain type of service or not. It does not have information about the scope and quality of the particular service; it also lacks the implementation fidelity and program design across states, which may impact the youth's outcomes. Second, additional factors that may predict educational attainment, employment and housing outcomes such as motivation, financial status, efficacy are not included in the dataset. Without taking such confounding factors into consideration, the results may not be fully interpretable. Third, the statistically significant result may solely due to large sample size of the dataset. Therefore, future studies that assess the effect size of the interventions and using rigorous experimental design are much needed. Also, there is large attrition between the baseline and follow-up survey at age 19 and 21, which may create attrition biases and limit our ability to generalize the findings. Despite the limitations, this study suggests the importance of providing ILPs to youth aging



out of foster care. By using multi-level modeling, which is rarely seen in current literature, the study findings contribute to our knowledge about the effectiveness of ILPs.

Implication for Policy and Practice

The findings of this study show that there is great variation among different states. This variation must be taken into consideration as it relates to the service delivery and program fidelity. Currently, not all states have extended foster care services and supports to youth after age 18 (Child Welfare Information Gateway, 2017). The results show the importance of extending foster care beyond 18, and policy-makers should be aware of the protective effect of foster care for youth aging out. There also may be a need for the Fostering Connections to Success and Increasing Adoptions Act to extend eligibility for ILPs as well as Education and Training Vouchers (ETV) to youth who exit foster care at age 16.

The findings of this study also emphasize the importance of providing services such as post-secondary educational support and financial support to youth in foster care. These youth should be encouraged and supported to achieve higher educational attainment by social workers. Child welfare workers should increase access to educational services and tutoring for youth in care. More opportunities and trainings should be provided to youth so that they can have necessary resources and access to be successfully employed. To better assist these youth in achieving positive outcomes, ILPs should develop more specialized services and meet their needs in different areas.

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