

How do academic and career services affect employment and SSI/SSDI receipt in the transition to adulthood for youth with disabilities who have aged out of foster care?

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## Abstract

**Background:** The transition to adulthood is an important life course process with implications for inequality. Both those with disabilities and those who age out of foster care are vulnerable during this transition; these populations separately face barriers to securing employment and living independently. However, little is known about the intersection of these populations.

**Data:** This project seeks understand the transition to adulthood for youth with disabilities who age out of foster care using linked administrative data from the National Data Archive on Child Abuse and Neglect and logistic regression. First, I estimate the relationships between having a disability and full-time employment, part time employment, and SSI/SSDI benefit receipt. Then, I limit the sample to those with disabilities and estimate the association between receiving education and career related services during the transition to adulthood and the same outcomes.

**Results:** Those with emotional or intellectual disabilities have lower odds of full-time employment, and those with any type of disability have higher odds of receiving SSI/SSDI disability benefits. A higher proportion of youth with disabilities received most supports and services during the transition to adulthood, with the exception of housing and educational financial assistance. In looking at the potential effectiveness of those services, education services were associated with higher odds of FTE and lower odds of SSI/SSDI benefit receipt among those with disabilities who age out of foster care whereas career services, largely, were not.

**Conclusion:** Taken together, those with disabilities who age out of foster care are a vulnerable population in the transition to adulthood and some services, such as academic supports, post-secondary supports, and financial assistance for education, may mitigate some of this risk and present unique opportunities to reduce reliance on SSA disability benefits.

How do academic and career services affect employment and SSI/SSDI receipt in the transition to adulthood for youth with disabilities who have aged out of foster care?

The transition to adulthood is an important developmental period marked by increasing independence and a density of challenges and opportunities on multiple fronts. Young people make decisions regarding education, employment, parenthood, and finances, which all have lifelong implications (Hogan & Astone, 1986; Shanahan, 2000). Moreover, they navigate this time in the context of changing social roles and responsibilities (Schulenberg & Schoon, 2012; Schulenberg et al., 2004; Staff et al., 2010). Pathways to adulthood, and the timing and ordering of these decisions and transitions are strongly linked with family and social context (Kendig et al., 2014). Family resources, support, and guidance can be important factors which can constrain prospects and choices or open opportunities to explore and develop (Lee & Mortimer, 2009; Melby et al., 2008; Schoeni & Ross, 2005).

Foster care involved youth, and especially youth who age out of foster care, is a group that faces particular difficulty in the transition to adulthood (Courtney et al., 2001; Keller et al., 2007). These youth often navigate this transition suddenly and with receding support. Adolescents frequently rely on their parents for housing at various points during this transition, including during the pursuit of higher education or as a safety net when shifting into new roles such as from higher education to employment (Melby et al., 2008). Moreover, many families provide financial support into early adulthood and provide counsel during this all too often stressful time (Schoeni & Ross, 2005). However, youth who have aged out of foster care often do not have these supports and are navigating this transition with different assets and family histories.

One group which merits particular attention in examining the transition to adulthood for child welfare involved youth are those with disabilities who age out of foster care. Having a disability is associated with difficulty in the transition to adulthood in its own right (Janus, 2009). Those with disabilities are less likely to pursue higher education, encounter difficulty in securing employment, and struggle to gain independence (Janus, 2009). Those with disabilities often need additional support during this transition, including financial support, guidance in navigating discrimination and complex support systems, housing support, and educational support (Pascall & Hendey, 2004). In fact, one study which interviewed youth with disabilities during the transition to adulthood identified “exceptional parents” as key to finding success (Pascall & Hendey, 2004). However, not all youth with disabilities had access to the support of parents, no less parents who have the economic and political resources to act in this exceptional capacity. Those with disabilities who age out of care face both the risks associated with child welfare involvement, including rapidly receding support during the transition to adulthood *and* the increased need for support that those with disabilities often need.

This study focuses on this important population, investigating employment, SSI/SSDI receipt, and service use in the transition to adulthood for those with disabilities who age out of foster care. I use linked administrative data available through the National Data Archive on Child Abuse and Neglect to estimate the association between disability and employment (full time and part time) and between disability and SSI/SSDI receipt at age 21. Employment and SSI/SSDI receipt are two essential indicators of success in the transition to adulthood which have important

lifelong implications for independence, wellbeing, and socioeconomic standing for this population. I will then examine differences in service use during the transition to adulthood for those who do and do not have disabilities, and then examine the potential effectiveness of boosting employment and decreasing reliance on SSI/SSDI disability benefits for two types of services—those aimed at boosting education and increasing employment.

## Background

More than 650,000 youth were served by the foster care system in 2019 (*The AFCARS Report*, 2020). Estimates vary regarding the prevalence of disability among those involved in the child welfare system, but there is consensus that youth with disabilities are overrepresented in this system (*The risk and prevention of maltreatment of children with disabilities*, 2018). Children with disabilities are three times more likely to experience abuse or neglect than their peers (Jones et al., 2012) and a third of youth in the foster care system have a disability (E. Slayter, 2016). Additionally, youth with disabilities are more likely to experience serious injury because of maltreatment (Sedlak et al., 2010). Given the disproportionate risk of involvement in the child welfare system for those with disabilities, there is a need for expanded study of disability and child welfare involvement.

## Disability and Aging Out

While the difficulty foster care youth face in the transition to adulthood has gained national attention, the unique experiences of those with disabilities who age out has been largely ignored (Geenen & Powers, 2007). Youth with disabilities are often excluded from large scale studies examining the transition to adulthood for foster care youth (for examples see: Courtney et al., 2007; Pecora, 2005). A few critical studies have narrowed in on this population, evidencing that youth with disabilities do indeed face difficulty in the transition to adulthood. One such study was an evaluation of the Independent Living Programs, which compared those with an identified disability to those without (Westat, 1991). While this evaluation is now quite dated, they found convincing evidence that youth with disabilities did worse than youth without on a variety of domains (including employment, educational attainment, social support, and independence) (Westat, 1991). More recent studies have found a consistent pattern—youth with disabilities, broadly defined, do worse in the transition to adulthood than their non-disabled peers (Geenen & Powers, 2007).

## Employment and SSI/SSDI Benefit Receipt

Two key areas for youth with disabilities in the transition to adulthood are employment and SSI/SSDI benefit receipt. Employment has many benefits such as increasing independence, social connection, and self-confidence (Bal et al., 2017; Bevan et al., 2013; Saavedra et al., 2015), however individuals with disabilities are more likely to be unemployed or to not transition into the labor market (Geenen & Powers, 2007). They are also less likely to receive callbacks for jobs (Janus, 2009). Boosting employment for those with disabilities would have positive implications for more than just income, it could also provide social connection and have health promoting consequences for wellbeing.

In 2019, the SSA made payments to more than 12 million adults on the basis of their disability (*Fast Facts & Figures About Social Security, 2020, 2020*). The average age of disabled worker beneficiaries has decreased since the 1960s, and the number of youth receiving SSI has increased over time, reaching over one million in 2019 (*Fast Facts & Figures About Social Security, 2020*). Many youths who receive disabilities benefits will live in poverty throughout their lives (She & Livermore, 2008). Additionally, young awardees' lifetime benefit amounts exceed that of older awardees because they often receive benefits over such a long time period (Ben-Shalom & Stapleton, 2015). Younger awardees are likely to rely on SSA benefits for much of their working-age life and participate in the labor force only infrequently (Ben-Shalom & Stapleton, 2015). Given the ongoing task of financial solvency at the Social Security Administration, whose 2020 report projected fund depletion in 2035 (*A Summary fo the 2020 Annual Reports, 2020*), reducing SSI/SSDI disability benefit among this population could prove an important tool to help reduced costs for the SSA.

### The Potential Role of Education and Employment Services

To help youth who are likely to age out of foster care the Foster Care Independence Act of 1999 authorized support for youth in the transition to adulthood (Fernandes-Alcantara, 2019). The Chafee statute was amended in the early 2000s to include Education and Training Voucher program which focused on boosting education and employment training (Fernandes-Alcantara, 2019). In exchange for receiving financial support for the John H. Chafee Foster Care Program for Successful Transition to Adulthood, states and territories collect and make available data on the services that youth use and their success in the transition to adulthood. This study will examine which services youth with disabilities who age out use and the potential effectiveness of two types of these services: education and employment services. I narrow in on these two types of services due to their likely association with employment, a key measure of success in the transition to adulthood which holds special importance for youth with disabilities.

The first set of services relate to supporting the educational attainment of youth. These services, which I describe in detail when discussing the data, include supports for obtaining a GED, a high school degree (including special education services), or a higher education degree (including financial support for college, tutoring, and SAT preparation). In the general population, educational attainment it can moderate the relationship between disability and employment, where those with higher levels of education experience a smaller decrease in the likelihood of employment that is associated with having a disability (McCauley, 2019). Youth with disabilities are more likely to be enrolled in special education, however little is known about the experiences of these youth beyond the fact that they face complex challenges and high levels of uncertainty (Foley & Pang, 2006; Quest et al., 2012). However, if youth who age out of foster care were receiving special education services and had a committed adult supporting them, they described taking more confidence action toward goals (Quest et al., 2012). More broadly however, these education promoting services have not been evaluated empirically at a population level.

The second set of services relate to supporting the employment prospects of youth. These services, which I'll describe when discussing the data, are aimed at promoting work. The existing literature on the effectiveness of work-study type programs at promoting work for youth

with disabilities is mixed. Vocational rehabilitative work programs for specific populations have found evidence of effectiveness (Cook & Rozzano, 2000; Dutta et al., 2008; Straaton et al., 1995). However, there is limited evidence of the effectiveness of general work promotion programs at boosting employment for those with disabilities (McCauley, 2020). A better understanding of the types of education-based and employment-based services that youth with disabilities who age out of foster care use and the potential effectiveness of these supports will provide clarity the current state of support and point to potential types of services which promote employment and independence for this population.

While research has explored educational supports and services for youth with disabilities and youth who age out of foster care, the intersection of these experiences has been overlooked despite the particularly high risk that these youth face. This project will help shed light on what services this vulnerable group uses and how those various services are associated with employment and SSI/SSDI disability benefit receipt in the transition to adulthood. This is particularly important given the steady rise in disability receipt and decline in the employment rate for those with disabilities (Autor & Duggan, 2010; Mann & Stapleton, 2011). Better understanding how those who face the highest risk can avoid government dependence and achieve employment and independence in the transition to adulthood can inform policy decisions regarding what types of programs to support and help practitioners reach the most at-risk youth. Additionally, better understanding how to support the employment and independence of these marginalized youth during this pivotal transition time can have long term implications for health, independence, and social inclusion across the life course.

### **Research Objectives**

- What is the association between disability type and employment and SSI/SSDI disability benefit receipt at age 21?
- What services and programs do youth with disabilities who are likely to age out of foster care receive? And are there differences in service receipt between those with and without disabilities?
- What is the association between receiving education and employment related programs during the transition adulthood and the likelihood of employment (full time and part time) and SSI/SSDI benefit receipt at age 21 for youth with disabilities who are likely to age out of foster care?

### **Study Design**

I use data from the National Youth in Transition Database (NYTD) from the National Data Archive on Child Abuse and Neglect (NDACAN) to explore the transition to adulthood for youth with disabilities who age out of foster care. These data consist of two datasets, the Services File, and the Outcomes File. The Services File is an administrative data set collected at 6-month intervals and reflects which services or programs youth participate in during that 6-month period. The NYTD data are a cohort based longitudinal survey of youth who are identified as likely to age out of foster care without finding a permanent placement. The first wave is collected when

the youth are 17 years old (2011) and follow up surveys are conducted when youth are 19 (2013) and 21 years old (2015). NDACAN has two additional administrative data products which I use in this study to develop covariates and one of the independent variables; 1) the National Child Abuse and Neglect Data System Child File (NCANDS) which has data on children's child protective service (CPS) history, and 2) the Adoption and Foster Care Analysis and Reporting System (AFCARS) which has data on children's experiences during foster care. Using a unique identifier, I linked these four datasets to connect youth who age out of foster care to their service use, their histories in the foster care system, and their child protective histories.

## **Independent Variables**

### *Disability*

The independent variable in the first and second set of analyses are the disability status and disability type of the youth. These indicators are developed from the administrative AFCARS database. Youth are considered to have a disability if their caseworker responded yes to the question "has this child ever been clinically diagnosed with a disability?" as collected in AFCARS.

Disability type is a categorical variable which I developed from a series of questions related to disability. It has five categories: no disability, emotional or intellectual disability, physical or sensory disability, both types of disability, and other disability. The language used in this manuscript is that used in the administrative data collection unless otherwise noted. For more information about the disability classifications refer to the AFCARS Foster Care Code Book (*AFCARS Foster Care Annual File*, 2019).

Emotional or intellectual disability refers to youth who have intellectual disabilities or emotional disabilities. Intellectual disabilities refer to a youth with significant subaverage general cognitive and motor functioning existing concurrently with deficits in adaptive behavioral manifested during the developmental period that adversely affects a child's/youth's socialization and learning. This includes those diagnosed with Downs Syndrome, Borderline Intellectual Functioning, Hydrocephalus, Microcephaly, and all degrees of Intellectual Disability<sup>1</sup>. And emotional disability refers to a condition exhibiting one or more of the of the following characteristics over a long period of time and to a marked degree: an inability to build or maintain satisfactory interpersonal relationships, inappropriate types of behavior or feelings under normal circumstances, a general pervasive mood of unhappiness or depress, or a tendency to develop physical symptoms or fears associated with personal problems. This includes those diagnosed with adjustment disorders, Attention Deficit and Disruptive Disorders (including ADD, ADHD, Conduct Disorders, and Oppositional Defiant Disorder), anxiety disorders (Agoraphobia, Obsessive Compulsive Disorder, Pandemic Disorder, Phobias, Post-Traumatic Stress Disorder, Separation Anxiety Disorder), Eating Disorders, Impulse Control Disorder, Mood Disorders (Bipolar Disorder, Cyclothymic Disorder, Depressive Disorders, Dysthymic Disorder), Personality disorders (such as Antisocial Personality Disorder, Borderline Personality Disorder, Paranoid Personality Disorder, and Schizoid Personality Disorder), Reactive

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<sup>1</sup> The original language used in the data collection, mental retardation, has been changed to intellectual disability to reflect current terminology. This is consistent with the National Center on Disability and Journalism Style Guide.

Attachment Disorder, Schizophrenic and other Psychotic Disorders (such as Delusional Disorder, Psychotic Disorder, and Schizoaffective Disorder), Somatoform Disorder, and Tourette Syndrome.

Physical or sensory disability refers to youth with a visual impairment that may significantly affect educational performance or development, a hearing impairment, whether permanent or fluctuating, that adversely affects educational performance, or a physical condition that adversely affects the child's day-to-day motor functioning. This includes being diagnosed with Blindness and Low Vision, Cataracts, congenital anomaly of the eye, Glaucoma, Diabetic Retinopathy, Retinal Detachment and Defects, Deaf, and Hearing Loss. This also included Arthritis, Brittle Bones/Osteogenesis Imperfecta, Cerebral Palsy, Chronic Motor Tic Disorder, Club Foot, Diplegia, Multiple Sclerosis, Muscular Dystrophy, Myasthenia Gravis, Paralysis (including Paraplegic, Quadriplegic, Diplegic), Poliomyelitis, Rheumatoid arthritis, and spina Bifida. Both refers to individuals with both sensory or physical disabilities and emotional or mental disabilities.

Other disability refers to youth with conditions other than those that fall into the aforementioned disability categories but that which require special medical care including chronic illnesses. This includes Acquired Immunodeficiency Syndrome (AIDS), Aplastic Anemia, Asthma, Autistic Spectrum Disorders (Asperger's Syndrome, Pervasive Developmental Disorder not otherwise specified, Autistic Disorder), blood disorders which require hospitalization once a month, cancers, Childhood Disintegrative Disorder, Chronic Granulomatous Disease, Cleft palate, Coagulation Defects, Congenital cystic lung, congenital heart anomaly. Crohn's Disease, Cushing's Syndrome, Cystic Fibrosis, Diabetes, Immune Disorders, Encephalopathy, Epilepsy, Fetal Alcohol Syndrome, Fetal Drug Addiction, Heart murmur which curtails vigorous activity, heart disease, hemophilia, Hypertension, Human immunodeficiency Disease (HIV), Human T-Cell Lymphotropic Virus-III, Immunodeficiency, Kidney Disease, Klinefelter's Syndrome, Learning Disability, Leukemia, Liver Disease, Lupus, Malignant Neoplasms, Misplaced facial feature, Organic Brain Syndrome, Pancreatic Disease, Rett Disorder, Sarcomas, Seizure Disorder, Sickle Cell Anemia, Shaken Infant Syndrome, Late Effects of Tuberculosis, and Nutritional deficiency.

### *Service Use*

The independent variable in the third set of analyses is service use. The NYTD data include information about which services funded by the Chafe Independence Program youth use. First, I examine the proportion of youth who have used the services by disability status. These services include educational attainment supports, career services, training or education related interventions, financial support, independent living program services, and other services. Additional information about the services is available in the NYTD Code Book (*NYTD Services File Code Book*, 2018).

Educational attainment supports include special education services, academic supports, and post-secondary supports. Special education services refers to specifically designed instruction to meet the unique needs of a child with a disability. Academic support services are supports designed to help youth complete high school or their General Equivalency Degree



(GED), including academic counseling, preparing for GED, tutoring, help with homework, study skills training, literacy supports, and help accessing educational resources. Post-secondary educational supports are services designed to help a youth enter or complete post-secondary education including entrance exam test preparation, counseling about college, information about financial aid and scholarship, help completing college or loan applications, and tutoring during college.

Career supports include career services and employment supports. Career preparation refers to services that develop a youth's ability to find, apply for and retain employment, including vocational and career assessment, career exploration and planning, job seeking and job placement support, employment preparation support (such as writing resumes and practice interviewing), job retention support and job coaching, learning to work with employers and other employees, understanding workplace values, and understanding authority and customer relationships. Employment programs or vocational training are programs designed to build a youth's skills for a specific trade, vocation, or career through classes or on-site training, including apprenticeships, internships, employment programs.

Training or education inventions include budgeting education, housing education, and health education programs. Budget education and financial management includes training on how to live within a budget; how to open and use a checking and savings account; how to balance a checkbook; how to develop consumer awareness and smart shopping skills; how to access information about credit, loans and taxes; and filling out tax forms. Housing education includes training in locating and maintaining housing, food preparation, laundry, housekeeping, living cooperatively, meal planning, grocery shopping, and basic maintenance. Health training programs provide information on hygiene; nutrition; fitness and exercise; first aid; medical and dental benefits; health care resources and insurance; maintaining personal medical records; sex education, abstinence education, and HIV prevention (including family planning); and education and information about the effects and consequences of substance use (including substance avoidance).

Financial support programs include housing financial assistance, education financial assistance, and other financial assistance. Housing financial assistance is a payment that is provided by the State agency for room and board (including rent deposits, utilities, and other start up housing expenses). Education financial assistance is provided by the State agency for education or training including support to purchase textbooks, uniforms, computers, or supplies; tuition assistance; scholarships; payment for educational preparation and support services (such as tutoring); or payment for GED and other education related tests. Other financial assistance programs include any other payments made or provided by the State to help youth live independently.

Independent living services include the independent living assessment and the independent living program. Independent living needs assessments are a systemic procedure to identify youths needs and risks, and then pair them with an independent living program. Independent living programs refer to programs where the youth are living independently under a supervised arrangement by the state. The monitoring is less than 24 hours a day and the youth

assume increasing responsibilities over time (such as paying bills, assuming leases, and working with a landlord).

Lastly, other services include mentoring and family services. Mentoring programs are where a youth is connected with an adult for a one-on-one relationship. These relationships may be short-term or long-term, and are often run through school, work, or family. Family support services include information and education about safe and stable families, healthy marriages, spousal communication, parenting, responsible fatherhood, childcare skills, teen parenting, and family violence prevention.

Next, I examine how the education and career path related services are associated with the outcomes for those with disabilities. These services are special education services, academic support services, post-secondary educational supports, career preparation services, employment and vocational training programs, and education financial assistance. All services are measured as a binary variable, with 1 indicating that the service was used and 0 indicating that the service was not used. I will look at services used prior to age 21 on outcomes at age 21.

### **Dependent Variables**

I examine three dependent variables in this study, 1) full-time employment, 2) part time employment, and 3) SSI/SSDI disability benefit receipt. I will examine these outcomes between age 17 and 21. Both dependent variables are binary, with 1 indicating yes and 0 indicating no. Participants are asked during Wave 3 (age 21) if they were employed in a full-time position (meaning they were employed for a position more than 40 hours a week). If participants answered that there were employed for a position at 40 or more hours a week, they are considered to have a full-time position. Participants were also asked if they were employed in a part-time position (meaning they were employed for a position more than 35 hours per week). If participants answered that they were employed in a position for 35 hours per week or less they are considered to be employed part time (PTE). FTE and PTE are separate and not mutually exclusive questions—participants can respond affirmatively to both if they are employed in two positions (one FTE and one PTE). Participants are also asked at Wave 3 if they are receiving SSI or SSDI directly or as a dependent beneficially at the date of the interview. Around 200 individuals who are categorized as not having a disability were receiving SSI/SSDI directly or a dependent at Wave 3. Some of these individuals may have developed a disability or received a clinical diagnosis of their disability in the time between the measurement of disability and the outcomes while others may be receiving these benefits due to the disability of a caretaker or family members. More information about these outcomes is available in the NYTD Outcomes Code Book (*NYTD Outcomes File Code Book*, 2016). Participants who are missing data on the dependent variables will be dropped from the sample for that model.

### **Covariates**

Three levels of control variables are used in this study. First, demographic control variables will be included. This information comes from Wave 1, or the baseline wave, of the NYTD dataset. The baseline of NYTD is collected at age 17. Control variables from NYTD are sex (male or female), race (non-Hispanic White, non-Hispanic Black, Hispanic, non-Hispanic

other), and highest grade completed. Also, from the NYTD data, all models include control variables to reflect the outcome at baseline (i.e., the models estimating the association between services and FTE at age 21 include a control for FTE at age 17) and a control variable to reflect educational enrollment at age 21, as enrollment in an educational program may limit time available for employment.

Second, control variables reflecting youth's experiences in foster care are included (AFCARS). These control variables will include the youth's first date of foster care placement, the total number of foster care placements, the total number of days the youth spent in foster care, if the youth was ever adopted, the caretaker family structure, and if the family was receiving SSI/SSDI benefits. The first date of removal, number of removal times, and the total numbers of days in care will be measured as continuous variables. Caretaker family structure will be a categorical variable with married couple, unmarried couple, and single parent as the options. Ever adopted, if the family received Medicaid and if the family received SSI/SSDI benefits are measured as binary variables.

Last, control variables reflecting CPS history will be included (NCANDS). These controls will be the reason for the most recent report (parent related risk, child related risk, abuse, neglect, other), the total number of reports, the total number of victimizations, and if the parent was ever a perpetrator. The number of reports and victimizations are measured as continuous variables and if the parent was ever a perpetrator is measured as a binary variable.

## **Data Management**

Prior to analysis, I reshaped, collapsed, and linked the NCANDS, AFCARS, and NYTD datasets for youth who are in the NYTD data. The AFCARS and NYTD datasets are organized by participant, but the NCANDS child file is organized by report number. First, I reshaped the NCANDS data to be organized by participant. I then collapsed data to create the variables of interest as described above. Then I linked the NCANDS data to the AFCARS data, dropping any participants who are not in the AFCARS data (i.e. participants who have a CPS history but were never enrolled in foster care). Then I linked this dataset with the longitudinal NYTD data using the participant identifier. This created a linked data set that is organized by the participant (long format) and includes information about participant's foster care and CPS histories. Youth with disabilities often have different CPS histories and experiences in the foster care system, such as differential reunification rates and more restrictive placements (Schmidt et al., 2013; E. M. Slayter, 2016). This makes the ability to adjust for foster care and CPS history important in reducing the threat of unobserved heterogeneity. Youth who were missing information about their disability status and type and the outcomes variables (FTE, PTE, and SSI/SSDI disability benefit receipt) were dropped from the sample. Missing data for the covariates was imputed using multiple imputation. The imputation was conducted in Stata and used seven imputations. As a sensitivity check, the analyses presented here were replicated using listwise deletion and the results were similar.

## **Analytic Strategy**

This study consists of three types of analyses; 1) an inferential analysis examining how disability type shapes employment (FTE and PTE) and SSI/SSDI benefit receipt at age 21, 2) a descriptive analysis examining which services and accommodation youth with disabilities who age out of foster care use, and 3) an inferential analysis estimating the association between the services related to education or career and the odds of employment (FTE and PTE) and SSI/SSDI benefit receipt at age 21. For the inferential analyses (analyses one and three) I employ logistic regression analyses because the outcome variables are all binary. In all cases the reference category is not reporting affirmatively for that outcome (for example, the analysis examining FTE compared those who have FTE to those that do not, meaning a combination of those without employment and with part-time employment only). I present summary tables of these analyses, and all analyses presented will include all covariates described above. The descriptive analysis (analysis two) shows the proportion of youth with and without disabilities who receive various services during the transition to adulthood as well as the *p*-value for a mean difference test between the two groups.

## Results

Half of the sample of youth aging out of foster care without finding a permanent placement have a disability, as seen in Table 1. The most common disability is an emotional or intellectual disability, with 35% of the sample reporting just an emotional or intellectual disability and another six-percent reporting both an emotional or intellectual disability and a physical or sensory disability. A little more than a quarter of the sample reported full time employment (FTE) (27%) at age 21, slightly more reported part time employment (PTE) (29%) at age 21, and 14% reported SSI/SSDI benefit receipt. The demographic characteristics of the sample, which come from the NYTD data, show that just under half of the sample are male (47%) and the majority are from urban spaces (81%). The sample is 41% White, over a third Black (36%), and just under a fifth Hispanic (18%).

In terms of the foster care histories of the sample, which come from the AFCARS data, youth had an average of six placements, spent more than 2,200 days in foster care, were just under 11 at their first foster care placement. Nearly all were receiving Medicaid, just over a tenth were receiving SSA disability benefits (11%), and the majority were from single-parent households (55%) with married couples being the second most common caretaking arrangement (21%). Last, when looking at the child protective histories of the sample, which comes from the NCANDS data, the most commonly included report reasons given were neglect (41%) and child related risk (36%). On average, the sample had more than three reports for each youth, one confirmed victimization, and the youth's parent was listed as a perpetrator for nearly 30% of youth.

In Table 2, I examine the association between disability type (specifically, an emotional or intellectual disability, a sensory or physical disability, both types of disability, or another type of disability) and the outcomes (FTE, PTE, and SSI/SSDI benefits) at age 21 controlling for the above-described demographic characteristics, foster care experiences, and CPS histories. These models also adjust for academic enrollment at age 21 and the reported outcome at baseline (age 17). I find that the odds of having FTE at age 21 for those with emotional or intellectual disabilities are 0.82 times the odds of FTE for those without a disability ( $p=0.01$ ). This means

that the odds of employment are 18% lower for those with emotional and intellectual disabilities than for those without disabilities. Having another type of disability is not significantly associated with the odds of FTE. Similarly, I find that having any type of disability is not significantly associated with the odds of PTE. However, when looking at SSI/SSDI disability benefit receipt, I expectedly find that the odds of receiving disability benefits are higher for those with any type of disability than for those without a disability. The odds of reporting SSI/SSDI benefits are 2.05 times greater for those with emotional or intellectual disabilities ( $p<0.00$ ), 1.71 times greater for those with sensory or physical disabilities ( $p=0.04$ ), 2.75 times greater for those with both emotional or intellectual and physical or sensory disabilities ( $p<0.00$ ), and 1.64 times greater for those with other disabilities ( $p=0.01$ ) than for those without disabilities. This means that the odds of receiving SSI/SSDI benefits are between 64% to 175% greater for those with disabilities than for those without disabilities.

Next, I examine the proportion of youth with and without disabilities who receive various services and supports funded by the Chafe Independence Program. In Table 3, I show the proportion for both groups as well as the results of a  $P$ -value of the difference test between the means. Overall, I find that a higher proportion of youth with disabilities are receiving more services available to youth who age out of foster care than youth without disabilities from that population. The primary exception is related to financial support, where a smaller proportion of youth with disabilities are receiving housing financial assistance and education financial assistance. In many cases, the differences in the proportion youth receiving services between those without and with a disability are significant. A significantly higher proportion of youth with disabilities are receiving special education services, career services, employment supports, housing education, health education, other financial assistance, independent living, mentoring, and family services. There is no statistically significant difference in the proportion of youth receiving services between those with and without disabilities in terms of post-secondary supports, budgeting education, and education financial assistance. A significantly smaller proportion of youth with disabilities are receiving housing financial assistance compared to youth without disabilities.

Then, I examine the association between receiving education or training related services and employment among those with disabilities who have aged out of foster care in Table 4. Among those who have disabilities and age out of foster care, the odds of FTE for those who receive special education services are 0.52 times the odds of those who do not ( $p<0.00$ ). This means that the odds of having FTE are 48% lower for those who receive special education services. Alternatively, the odds of having FTE for those who receive academic support are 1.35 times greater than the odds of those who do not ( $p=0.01$ ) and for those who receive post-secondary supports the odds FTE are 1.23 times the odds of those who do not receive those supports ( $p=0.08$ ) with marginal significance. This means that the odds of having FTE are 45% greater for those who receive academic supports and 23% greater than those who receive post-secondary supports compared to those who do not receive those respective services. Educational financial assistance, career services, and employment supports are not significantly associated with the odds of FTE among those with disabilities. When looking at PTE, receiving special education services, academics supports, post-secondary support, educational financial assistance, and employment supports is not significantly associated with the odds of PTE among those with disabilities. However, the odds of PTE for those who received career services were 1.34 times

the odds of the those that did not ( $p=0.03$ ). This means that the odds of having PTE are 34% higher for those with disabilities who receive career services.

Last, I examine the association between receiving education or career related services and SSI/SSDI disability benefits among those with disabilities who have aged out of foster care (again, in Table 4). On average and holding all else constant, the odds of receiving SSI/SSDI disability benefits for those who receive special education services are 3.32 times those that do not ( $p<0.00$ ) for those with disabilities who age out of foster care. This means that the odds of SSI/SSDI disability benefit receipt are 232% greater for those receive special education services than for those who do not. However, the opposite pattern is true for those who receive other services. The odds of SSI/SSDI benefit receipt for those who receive academic supports are, on average, 0.64 times the odds of those that do not ( $p=0.01$ ) among those with disabilities who age out of foster care. Similarly, the odds of SSI/SSDI disability receipt for those who receive post-secondary supports are 0.74 times the odds of those that do not ( $p=0.06$ ) with marginal significance and the odds of SSI/SSDI disability receipt for those who receive educational financial support are 0.69 times the odds of those that do not ( $p=0.01$ ). This means that the odds of receiving SSI/SSDI disability benefits are 36% lower for those that receive academic supports, 26% lower for those that receive post-secondary supports, and 31% lower for those that receive educational financial assistance than those that do not receive those respective services. Receiving career services or employment services were not significantly associated with the odds of SSI/SSDI benefit receipt among those with disabilities who age out of care.

## Discussion

The results of this study suggest that youth with disabilities who age out of foster care, and especially youth with emotional or intellectual disabilities, face risk in the transition to adulthood. The odds of FTE for youth with emotional or intellectual disabilities are 18% lower than for those without disabilities. For the other disability types, the odds of FTE and PTE are statistically not different for those with and without disabilities. However, youth who age out of foster care generally have a lower employment rate, so this lack of difference does not suggest high levels of employment. Additionally, as we might expect, the odds of SSI/SSDI benefit receipt for youth with disabilities are between 64% and 175% higher than for those without disabilities. While not surprising, reliance on disability benefits at such a young age is risky because early disability benefit receipt is often associated with long-term reliance (Ben-Shalom & Stapleton, 2015) and poses a high burden of life-time benefit receipt on the SSA (Ben-Shalom & Stapleton, 2015). By providing a clearer picture of the risk these youth face, this study calls attention to the need to support the employment and independence of youth with disabilities who age out of foster care. Moreover, this paper also takes the first steps to understanding which supports this population are accessing from a national perspective and attempts to evaluate how potentially effective a subset of these services may be.

In examining service receipt among youth with disabilities who have aged out of foster care this paper provides three primary conclusions; 1) for youth who age out of foster care an equivalent or higher proportion of youth with disabilities are accessing most services, 2) the exception is among financial assistance services, and 3) the services aimed at bolstering

educational attainment have the potential to improve the odds of employment and decrease the odds of SSI/SSDI benefit receipt net of employment and benefit receipt at age 17.

Largely, youth with disabilities who age out of care are accessing services aimed to support their transition to adulthood. Relative to youth without disabilities who age out of care, a higher proportion of youth with disabilities are receiving special education services, career services, employment services, housing education training, health education training, other financial assistance, independent living assessments and services, mentoring services and family services. Additionally, youth with disabilities are receiving similar academic supports, post-secondary supports, and budgeting education training. There are two services where a lower proportion of youth with disabilities are receiving services—housing financial assistance (24% compared to 26%) and education financial assistance (40% compared to 42%). It is important to understand why a smaller proportion of youth with disabilities are receiving these services, and future research should examine the root of this disparity.

Services aimed at supporting academic attainment or assisting youth in employment are thought to be two important avenues to bolstering employment and independence in the transition to adulthood. The odds of FTE are higher, and the odds of SSI/SSDI disability benefit receipt are lower at age 21 among youth with disabilities who participate in academic support and post-secondary services net of employment status and disability benefit receipt at age 17 respectively. Additionally, the odds of SSI/SSDI disability benefit receipt are 31% lower for those with disabilities who receive educational financial assistance net of baseline benefit receipt. This suggests that services aimed at supporting the academic attainment of youth with disabilities who age out of foster care hold promise for promoting independence and employment. Alternatively, receiving career services or employment supports are not significantly associated with the odds of FTE or receiving SSI/SSDI disability benefits, and largely not associated with the odds of PTE. This suggests that the career-based training pathway may not be as promising for bolstering employment and independence for youth with disabilities who age out of foster care.

It is important to consider the results about relative service use by those with disability and the potential effectiveness of services for those with disability together. While services which support education hold promise for bolstering employment and independence for those with disabilities (with the notable exception of special education, which is discussed in the limitations section), the proportion of those with disabilities who receive these services are the same as those without disabilities or, in the case of education financial assistance, lower than those without disabilities. Alternatively, services aimed at a career pathway are largely not associated with better odds of employment or lower odds of SSI/SSDI benefit receipt among those with disabilities. However, a higher proportion of those with disabilities are receiving these services than those without disabilities. This suggests that policy makers should prioritize funding programs and services to promote educational attainment for those with disabilities who age out of foster care.

Taken together, this study provides a clearer picture of the transition to adulthood for youth with disabilities who age out of foster care and provides insight into how policy reform and practice can mitigate risk for these vulnerable youth. Policy makers should prioritize

programs and services which support the educational achievement and attainment of youth with disabilities who are likely to age out of foster care. Additionally, practitioners working with this population should incorporate educational supports into care. Last, and most importantly, youth with disabilities who are likely to age out of foster care should be receiving educational and financial support on par with or in a higher proportion than those without disabilities.

### **Limitations**

The response rate for the NYTD data is low, threatening the generalizability of these findings. Overall, youth who age out of foster care are an extremely vulnerable population and a lower response rate is expected. The NYTD data does include weighting to adjust for non-response resulting from attrition, however analyses conducted by Children's Bureau found little difference between the weighted and non-weighted analyses suggesting that the threat of non-response bias is limited (Children's Bureau, 2014). Moreover, this project uses data from the first cohort of youth for whom transition to adulthood data are collected. The cohorts for whom data is currently be collected are higher, and future research examining the transition to adulthood for youth with disabilities who age out of foster care should use this data when it is released for public use. However, it is important to note that youth who are aging out of foster care are typically excluded from national surveys examining employment and disability despite being a potentially high risk and high receive receipt population. While these findings may be limited to providing insight to those who participated in the survey, as opposed to generalizable findings which we can confidently extend to the entire population aging out foster care, this is among the first studies to specifically look at disability and employment for this population and begin to understand these relationships and the potential role of education related services in supporting employment and independence. Regardless, the limited generalizability of these findings is important to note.

A notable exception about the positive association between education-based services and the odds of employment and independence, is receiving special education supports. The odds of FTE are 48% lower and the odds of SSI/SSDI benefit receipt are 232% higher for those with disabilities who receive special education services. This is likely due to unobserved heterogeneity and selection into special education services. One limitation of this study is that I am unable to adjust for the severity of symptoms for disability. I hypothesize that those with disabilities who meet the eligibility criteria to receive special education services may have, on average, more severe limitations which would in turn explain the negative association between special education services and the odds of employment and independence for those with disabilities. It is not necessarily that the services that special education itself provides lead to lower odds of employment and higher odds of SSI/SSDI disability benefit, but rather the population that selects into special education services likely have lower odds of employment and higher odds SSI/SSDI benefits to begin with.

Another important limitation to consider is that these data do not include information about the severity of disability symptoms. It is important to note that individuals with more severe disability symptoms may be eligible for specific services or overrepresented in the population which received specific services. This selection effect limits our interpretation of these results, especially in terms of how service receipt is associated with the outcomes of



interest. As is mentioned in the discussion, the negative associations between special education services and employment and the position association between special education services and SSI/SSDI benefit receipt may be an artifact of the severity of disability symptoms leading to eligibility for special education services and not reflection of the potential of those services to bolster employment. While the results for special education show that the design of the study does not address unobserved heterogeneity related to disability severity, the other results do adjust for special education service receipt which may proxy disability severity. This study design is associational, not causal, and the results should be interpreted as such.

## **Conclusion**

This study provides the first empirical evidence linking disability and receiving education and career-based services to employment and disability benefit receipt in the transition to adulthood for youth with disabilities who age out of foster care. This study finds that those with emotional or intellectual disabilities face the highest risk in the transition to adulthood for employment and independence. Moreover, this study finds that receiving services that bolster educational achievement and attainment may mitigate some of this risk and provide potential for supporting the successful transition to adulthood for those with disabilities who age out of foster care.

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## Tables

Table 1. Means and proportions for the sample.

	Mean/Proportion	Standard Deviation
Disability		
Emotional/Intellectual	0.35	
Physical/Sensory	0.03	
Both	0.06	
Other	0.06	
Full Time Employment	0.27	
Part Time Employment	0.29	
SSI/SSDI Benefits	0.14	
Demographics		
Male	0.47	
Race		
White	0.41	
Black	0.36	
Hispanic	0.18	
Other	0.06	
Urban	0.81	
Non-Metro	0.16	
Rural	0.02	
Foster Care Experiences		
Number of Placements	6.15	6.03
Total Days in Foster Care	2261.45	1672.55
Age at First Foster Placement	10.83	5.28
Ever Adopted	0.09	
Medicaid Receipt	0.97	
Parent Marital Status		
Married Couple	0.21	
Unmarried Couple	0.09	
Single Parent	0.55	
Unknown	0.15	
SSI Benefits	0.11	
Child Protective History		
Reason for Report		
Parent Related Risk	0.21	
Child Related Risk	0.36	
Abuse	0.19	
Neglect	0.41	

Other	0.31
Number of Reports	3.35
Number of Victimizations	1.09
Parent Perpetrator	0.29

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*Notes.* N=5,589. Outcomes are from the NYTD data, foster care history is from the AFCARS data, and child protective history (CPS) is from the NCANDS child file data.

Table 2. The association between disability type and employment and SSI disability benefit receipt at age 21 among youth who age out of foster care using logistic regression.

Disability Type	FTE	PTE	SSI/SSDI
	Odds Ratio	Odds Ratio	Benefits
Emotional/Intellectual Disability	0.82** (0.06)	0.96 (0.07)	2.05*** (0.21)
Sensory/Physical Disability	1.32 (0.25)	1.15 (0.21)	1.71* (0.43)
Both Disabilities	0.76 (0.13)	0.92 (0.14)	2.75*** (0.50)
Other Disability	0.89 (0.13)	0.98 (0.14)	1.64* (0.33)
Controls			
Demographics	Yes	Yes	Yes
Foster Care Experiences	Yes	Yes	Yes
Child Protective History	Yes	Yes	Yes
	<i>N:</i> 5,270	5,242	5,254

Notes: Comparison group for disability type is no disability. Outcomes are from the NYTD data, foster care history is from the AFCARS data, and child protective history (CPS) is from the NCANDS child file data. Sample size differences are a result of missing outcome data. Dis is disability, FTE is full time employment, PTE is part time employment, and SSI is Supplementary Security Income. Odds Ratio presented with standard error in parenthesis. All models adjust for control variables, including a control for outcome variable at baseline (i.e., model estimating FTE at age 21 includes a control variable for FTE at baseline) and educational enrollment at age 21. +p<0.10. \*p<0.05, \*\*p<0.01, \*\*\*p<0.001.

Table 3. Descriptive table showing the proportion of youth with and without disabilities who participated in the education and career related services.

	No Disability	Disability	P-Test of Difference
Educational Attainment			
Special Education Services	0.18	0.36	0.00
Academic Supports	0.60	0.61	0.42
Post-Secondary Supports	0.46	0.46	0.95
Career Services			
Career Services	0.55	0.59	0.00
Employment Supports	0.38	0.41	0.02
Training/Education			
Budgeting Education	0.54	0.54	0.93
Housing Education	0.54	0.59	0.00
Health Education	0.51	0.54	0.03
Financial Support			
Housing Financial Assistance	0.26	0.24	0.03
Education Financial Assistance	0.42	0.40	0.17
Other Financial Assistance	0.48	0.58	0.00
Independent Living			
Independent Living Assessment	0.56	0.64	0.00
Independent Living Program	0.20	0.23	0.01
Other			
Mentoring Services	0.43	0.49	0.00
Family Services	0.29	0.34	0.00

Notes: N=5493. Services are from the NYTD data and refer to the time period between 17 and 21. +p<0.10. \*p<0.05, \*\*p<0.01, \*\*\*p<0.001.



Table 4. The association between services received during the transition to adulthood and employment and SSI benefit receipt at age 21 among those with disabilities who age out of foster care using logistic regression.

	FTE		PTE		SSI/SSDI Benefits	
	Odds Ratio	<i>p</i>	Odds Ratio	<i>p</i>	Odds Ratio	<i>p</i>
<b>Education Services</b>						
SPED Services	0.52*** (0.06)	<0.00	0.91 (0.09)	0.37	3.32*** (0.42)	<0.00
Academic Supports	1.45* (0.20)	0.01	1.05 (0.14)	0.70	0.64** (0.10)	0.01
Post-Secondary	1.23+ (0.18)	0.08	1.20 (0.15)	0.16	0.74+ (0.12)	0.06
Financial Assistance	0.91 (0.11)	0.43	1.18 (0.13)	0.13	0.69** (0.10)	0.01
Career Services	0.90 (0.13)	0.48	1.34* (0.18)	0.03	0.97 (0.16)	0.87
Employment Supports	1.03 (0.13)	0.81	1.10 (0.13)	0.43	1.00 (0.15)	0.99
<b>Controls</b>						
Demographics	Yes		Yes		Yes	
Foster Care History	Yes		Yes		Yes	
CPS History	Yes		Yes		Yes	
	<i>N</i>	2,488	2,511		2,494	

*Notes.* Outcomes are from the NYTD data, foster care history is from the AFCARS data, and child protective history (CPS) is from the NCANDS child file data. SPED is special education, CPS is child protective history. All models adjust for control variables, including a control variable for the outcome at baseline (i.e., model estimating FTE at age 21 includes a control variable for FTE at baseline) and educational enrollment at age 21. +*p*<0.10. \**p*<0.05, \*\**p*<0.01, \*\*\**p*<0.001.

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