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**Risk and Protective Factors Associated with Successful Independent
Living Outcomes in a National Sample of Youth Aging Out of Foster
Care**

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Dedication

This dissertation is dedicated to my loving parents, Tianlin Liu and Ying Wang, who offered their unconditional love and encouraged me to pursue my dreams. To my dear wife, Weiran Liu, who supported me throughout the process and made my life colorful.

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Abstract

Risk and Protective Factors Associated with Successful Independent Living Outcomes in A National Sample of Youth Aging Out of Foster Care

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The transition from adolescence to adulthood is a crucial period in a young person's life. 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 their peers in the general population. To overcome these challenges, the John H. Chafee Foster Care Independence Program (CFCIP) was established; it assists youth in making the transition from foster care to self-sufficiency by providing funding to states. This study aims to examine the risk and protective factors contributing to independent living outcomes using a national sample of youth aging out of the foster care system. By merging the National Youth in Transition Database (NYTD) and the Adoption and Foster Care Analysis and Reporting System (AFCARS) datasets, this study provides an overview of independent living outcomes of youth aging out of foster care. By utilizing a growth curve modeling method, this study suggests there is a high prevalence of negative outcomes among this population as they transition from adolescence to adulthood. It shows that several risk factors are associated with key domains of independent living outcomes,

including placement stability, current placement setting, and previous adverse experience. Having a connection between 17 and 21 with an adult and remaining in foster care after 18 are both substantial protective factors of successful life outcomes. The findings of this study also have implications for policy and practice. Policymakers and practitioners should work together to develop evidence-based, trauma-informed interventions that better help this vulnerable population, with an emphasis on achieving relational permanency. Future Independent Living Programs should be tailored to meet the specific needs of youth in foster care, and child welfare workers should be aware of the risks and protective factors that impact youth development.

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Chapter 1. Introduction

BACKGROUND

Youth Aging Out of Foster Care

According to the Code of Federal Regulations (CFR) definition, foster care is “24-hour substitute care for children placed away from their parents or guardians and for whom the title IV-E agency has placement and care responsibility” (The Administration on Children, Youth and Families, Foster Care Maintenance Payments, Adoption Assistance, and Child and Family Services, 2019). Foster care settings include placements in nonrelative and relative foster family homes, group homes, emergency shelters, residential facilities, childcare institutions, supervised independent living, and preadoptive homes (Child Welfare Information Gateway, 2019). When parents cannot provide secure and stable environments for their children, the state may remove them from their parents’ care and place them in foster or residential care through the legal system (Donkoh, Underhill, & Montgomery, 2006). As reported by the AFCARS, approximately 442,995 children were in foster care in FY2017; this figure increased by 11% since FY2012. Among them, 195,360 (45%) were in nonrelative foster family homes, and 140,675 (32%) were in relative foster family homes. Other categories of care include institutions (7%), group homes (6%), trial home visits (5%), preadoptive homes (4%), run away (1%), and supervised independent living (1%). The average age at entry is 7.1 years old, and the average age at exit is 8.7 years old. The average time in care is 19.2 months. Almost half of these children are from racial or ethnic minority groups. In terms of the outcomes, of the estimated 247,631 children who exited foster care during FY 2017, 121,203 (49%) were

reunited with their parent(s) or primary caretaker(s) and 58,104 (24%) were adopted (U.S. Department of Health and Human Services, 2018).

About half of youth in foster care (56%) had a case plan goal for reunification with their parent(s) or primary caretaker(s) and 114,406 (27%) had a goal of adoption. However, not every child can achieve permanency by reunification or adoption. About 19,945 (8%) of children who exited foster care during FY 2017 were discharged because of emancipation, also known as “aging out” of foster care (U.S. Department of Health and Human Services, 2018). Studies have used different terminology regarding this population, such as “transitional age foster youth,” “youth aging out of foster care,” “emancipated foster youth,” and “youth discharged to independent living.” These terms all refer to youth who exited the foster care system without achieving permanency. They should be distinguished from the more commonly used term “former foster youth,” which refers to youth who were placed in the foster care system (Curry & Abrams, 2015). In this dissertation, the term “youth aging out” is used for consistency.

Data on youth who age out of foster care can fluctuate, but about 20,000 to 30,000 children are emancipated from foster care every year. According to AFCARS, approximately 83,124 (20%) of youth in foster care were aged 15-20 during FY2017, which comprises a large vulnerable population (U.S. Department of Health and Human Services, 2018). The numbers of youth who age out of foster care and their exact ages may not always be accurate due to data limitations. For example, some data does not contain information on youth who run away from foster care (Courtney, 2009). In addition, the data on emancipation do not distinguish the emancipation of minors (below 18) from that of youth who age out of foster care between 18 and 21 (Child Welfare Information Gateway, 2019). Considering these factors, at least 300,000 youth have aged out of foster care in the past 10 years.

Significance and Challenges

Youth who age out of foster during adolescence present several challenges because of their history and the current needs of their youth development. Most come from families that have multiple problems, including child abuse, substance abuse, and domestic violence. Unlike their peers in the general population, youth in foster care often lack sustained support from their families of origin, such as funding for college, childcare for working young parents, or a place to live during difficult periods (Osgood, Foster, & Courtney, 2010). Many youth who have experienced foster care exhibit significant behavioral problems and are in poorer mental and physical health than those in the general population (Lawrence, Carlson, & Egeland, 2006; Turney & Wildeman, 2016). Furthermore, the experience of being abused or neglected in early childhood can have long-term negative impacts on the cognitive and behavioral development of such youth (Hildyard & Wolfe, 2002). In addition, independent living is extremely difficult for youth in foster care with physical disabilities and chronic illness (Osgood, Foster, & Courtney, 2010). Chronic child maltreatment is related to adverse health and behavioral outcomes in later childhood and early adulthood (Jonson-Reid, Kohl, & Drake, 2012). Many studies have found that youth aging out of foster care are at greater risk of many negative outcomes, including poor health, undereducation, unemployment, incarceration, early pregnancy, and homelessness (Barth, 1990; Collins, 2001; Courtney et al., 2007; Courtney et al., 2011).

The transition from adolescence to adulthood is a further challenge because of the critical nature of the period, which includes role transitions, family capacity building, norm compliance, individualistic transitions, and legal and biological transitions (Arnett, 2001). The transition to adulthood contains several significant life events, such as leaving school, getting a job, leaving home, getting married, starting a family, and becoming a parent

(Henninger & Taylor, 2014; Shanahan, 2000). A successful transition to adulthood is positively associated with parental support, financial capability, and youth assets at the individual, family, and community levels (Oman, Vesely, Aspy, & Tolma, 2015; Serido, Shim, & Tang, 2013; Swartz, Kim, Uno, Mortimer, & O'Brien, 2011). In contrast, an unsuccessful transition to adulthood may significantly impact adult socioeconomic attainment, family life, and health (Eliason, Mortimer, & Vuolo, 2015).

Due to a lack of societal support, youth aging out of foster care are at higher risk of negative outcomes that impact the successful transition into adulthood. As indicated, their development and transition into adulthood are complicated by childhood maltreatment and unstable placements experienced before being discharged from foster care (Lee & Berrick, 2014). Some common risk factors for youth in foster care include substance abuse, teenage pregnancy, school failure, and juvenile delinquency (Lerner & Galambos, 1998). Their developmental outcomes are often negatively affected by poverty, parental incarceration, and family instability (Duncan, Brooks-Gunn, & Klebanov, 1994; Fomby & Bosick, 2013; Turney & Lanuza, 2017).

Child welfare agencies provide services to mitigate risk factors for youth in foster care and prevent negative outcomes before youth age out of foster care. Their goal is to ensure that youth can secure a place to live, complete high school, find employment, build positive social relationships, and eventually live independently of the child welfare system (Cook, 1994). They also deliver different programs that serve youth aging out of foster care and prepare them for self-sufficiency by offering guidance and support. A significant problem for youth who age out of foster care is that the services they receive from child welfare agencies end abruptly as they age out and are at a very vulnerable time during their transition from adolescence to adulthood. For example, once they become adults, they are forced to leave the systems designed for their age group and enter adult systems, which are

often not equipped to address their behavioral health and social needs (Osgood, Foster, & Courtney, 2010).

Youth who abruptly age out of foster care often face multiple disadvantages in terms of educational attainment, employment, housing, financial stability, and life skills compared with the youth in the general population (Chor, Petras, & Pérez, 2018; Lemon, Hines, & Merdinger, 2005; Montgomery, Donkoh, & Underhill, 2006; Yelick, 2017; Woodgate, Morakinyo, & Martin, 2017). Without achieving permanency, they are extremely vulnerable to multiple life issues (Fowler, Toro, & Miles, 2009). Overall, they have lower educational attainment, employment rates, and income and higher poverty rates, substance abuse rates, and frequency of experiencing homelessness and childbirth (Berzin, Rhodes, & Curtis, 2011). One study found that only 58% of the youth who aged out of foster care had a high school diploma or general educational development (GED) degree compared to 80% of non-foster youth (Courtney & Dworsky, 2006). Only 1%-11% of foster youth attended college compared to 32.5% of non-foster youth (Courtney et al., 2011; Pecora et al., 2006; Wolanin, 2005). In addition, just 15% of foster youth enrolled in college-preparatory classes during high school compared to 32% of non-foster youth (Sheehy et al., 2001; Unrau, Font, & Rawls, 2012). Another study found that youth aging out of foster care were at greater risk of homelessness: between 11% and 36% became homeless during the transition to adulthood compared to only 4% of youth in the general population (Dworsky, Napolitano, & Courtney, 2013; Fowler, Toro, & Miles, 2009). Another study found that 22.2% of foster youth experienced homelessness at least once after discharge (Pecora et al., 2005). In addition, 15% of youth who have aged out had substance abuse problems, and 40%-60% had an early pregnancy (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; Stott, 2012).

LEGISLATIVE AND POLICY SOLUTIONS

Major Legislations

Since the 1980s, legislators and policymakers have created programs to support youth aging out of foster care. Policymakers confronted with the many risk factors and complications of youth abruptly aging out of foster care have created programs to ensure a successful transition to adulthood that provide interventions to mitigate known risk factors. Examples of these programs follow, with a specific emphasis on the Independent Living Programs (ILPs). The first legislation to address the needs of older youth in foster care was the Consolidated Omnibus Budget Reconciliation Act of 1985 (Pub. L. No. 99-272). It included the Independent Living Initiative, which amended Title IV-E of the Social Security Act to provide federal funds to states to help youth in foster care develop independent living skills (Collins, 2004).

Following the Independent Living Initiative, the Foster Care Independence Act (FCIA), also known as the Chafee Act (Pub. L. No. 106-169), was enacted in 1999, and it established the Chafee Foster Care Independence Program (CFCIP). The program offered grants to states and tribes to help youth in foster care achieve self-sufficiency in education, employment, housing, emotional support, financial management, and living skills (Government Accountability Office, 2004). It included federal funding of \$140 million a year, which allowed states to provide independent living services. It expanded eligibility for youth who remained in foster care and aged out from 18 to 21. It also allowed states to use up to 30% of the funds for room and board. Finally, it allowed states to extend Medicaid coverage to former foster youth up to 21 (Collins, 2004; Government Accountability Office, 2004).

To emphasize higher education for youth in foster care, the Promoting Safe and Stable Families Amendments of 2001 amended the Social Security Act and added the Educational and Training Vouchers Program (ETV) to the CFCIP in 2002. The purpose of the ETV Program was to provide financial assistance for postsecondary training and education to youth who age out of foster care. The ETV provided an additional \$60 million to states and tribes to grant postsecondary educational and training vouchers to youth aging out of foster care. The vouchers could be used to cover costs to attend a higher education institution of up to \$5,000 per year (Collins, 2004; Wolanin, 2005).

Several major federal policies concerning youth in foster care are summarized below. The Fostering Connections to Success and Increasing Adoptions Act of 2008 (Pub. L. No. 110-351) revised transition planning requirements and extended eligibility for independent living services and Title IV-E payments to 21 (Child Welfare Information Gateway, 2017). In addition, the Preventing Sex Trafficking and Strengthening Families Act was passed in 2014. Some major child welfare provisions included protecting children and youth at risk of sex trafficking, improving adoption incentives, and extending family connection grants. In particular, the legislation required caseworkers to consult foster youth 14 or older in the development of their case plan and transition planning for a successful adulthood (Children's Defense Fund, 2015).

Independent Living Programs in the United States

One of the most significant legislative and policy solutions to help youth who age out of foster care is the Chafee Foster Care Independent Living Program (also referred to as ILP). It provides flexible funding for states to establish programs that are designed to support youth in foster care age 14 or older through transitional services of education, employment, health, and finance. It aims to help older foster youth achieve permanent

connections with a caring adult and engage in positive youth development. In addition, the ILP also provides financial, housing, counseling, employment, education, and other services to former youth in foster care aged 18 to 21. The educational and training vouchers are also available to youth who have aged out of foster care (42 U.S. Code § 677). Overall, ILPs incorporate instruction, modeling, role-playing, and feedback into social skills training techniques, which have proved to be effective in teaching skills acquisition and youth performance improvement (Donkoh, Underhill, & Montgomery, 2006).

In recent years, there have been several studies on ILPs and youth aging out of foster care. Data suggests that 50%-60% of eligible foster youth receive independent living services (Avery, 2010; Yelick, 2017). One analysis of national data in the United States by Okpych (2015) reported that about 50% of the youth included in the study received at least one type of Chafee service. Furthermore, women were more likely to receive services than men. It also found that African Americans were less likely than other racial or ethnic groups to receive services in large urban areas, and youth with disabilities were more likely to receive services than youth without disabilities. The most commonly received services were family support/marriage education, budget and financial management, health education and risk prevention, housing education and home management, career preparation, and postsecondary education support. Despite some weaknesses, ILPs remain one of the most important programs provided to youth aging out of foster care.

RISK AND PROTECTIVE FACTORS OF INDEPENDENT LIVING OUTCOMES

Researchers should also understand what factors contribute to key independent living outcomes to better guide program evaluation and service delivery. Many studies have examined the risk and protective factors that affect the successful transition to adulthood for youth aging out of foster care (Courtney, Stagner, & Pergamit, 2013; Fowler,

Toro, and Miles 2009). It is widely accepted that many of these factors are linked to trauma. Most children in the child welfare system are exposed to traumatic events such as child maltreatment or being removed from their homes (Greeson et al., 2011; Ko et al., 2008). Adverse childhood experiences such as child maltreatment and victimization impact psychosocial development and increase the likelihood of worse outcomes in later life. Youth who have experienced trauma are more likely to have internalizing and externalizing behaviors such as mental health problems, substance abuse, juvenile delinquency, and criminal justice involvement (Thornberry, Ireland, & Smith, 2001; Whitson & Connell, 2016).

According to the literature, several risk factors, including placement stability, previous adverse experience, disability, and mental health status, are associated with the key domain of independent living outcomes. Protective factors such as having a connection to an adult or mentor and remaining in foster care have also been identified in the literature, although studies have paid less attention to them.

Placement Stability

A significant number of research studies have documented the relationship between placement stability and independent living outcomes for youth aging out. Placement instability is a common experience for youth in foster care, and many have more than five placements while in care (Courtney, Charles, Okpych, Napolitano, & Halsted, 2014). Placement instability limits youth's ability to maintain strong connections with caregivers or other caring adults, seek support from others, and access resources in the community (Dworsky et al., 2013; Stott, 2012; Tyler & Schmitz, 2013). Youth in foster care who had frequent placement changes are more likely to experience behavioral problems, juvenile delinquency, and academic challenges (Clemens, Lalonde, & Sheesly, 2016; Graves,

Frabutt, & Shelton, 2007; Sullivan, Jones, & Mathiesen, 2010). Shah et al. (2017) find that youth with unstable placements are more likely to experience homelessness than youth placed with relatives. One study also finds that placement instability is a risk factor of an adjudicated felony for youth (Cusick et al., 2010). Shpiegel (2016) finds that stable foster care placement is associated with better outcomes in the transition to adulthood. In addition, the current placement setting is also a significant predictor of independent living outcomes (Okpych & Courtney, 2018). For example, Crawford et al. (2015) find that youth who has been in a family or kinship placement has lower odds of experiencing homelessness than their peers in other settings. Another study finds that being placed in group care is a protective factor against early pregnancy (Dworsky & Courtney, 2010).

Previous Adverse Experience

Studies have identified several risk factors associated with negative independent living outcomes, such as homelessness, substance abuse, and incarceration (Dworsky et al., 2013; Fowler, Toro & Miles, 2011). Previous adverse experience with these risk factors significantly increases the likelihood of experiencing such events again (Pilowsky & Wu, 2006). For example, youth involved in the juvenile justice system are more likely to experience homelessness (Fowler et al., 2009; Shah et al., 2017). Previous criminal behavior is a strong predictor of future incarceration (Crawford, Pharris, & Dorsett-Burrell, 2018). Berzin et al. (2011) find that substance use is associated with homelessness. One study examining the risk and protective factors of early pregnancy among older youth in foster care finds that women with a history of juvenile justice involvement are more likely to have a pregnancy. Furthermore, men who left the foster care system before 19 are more likely to have a child (Oshima, Narendorf, & McMillen, 2013).

Disability

Disability is another crucial risk factor of independent living outcomes. About 30% of youth in the child welfare system have a diagnosed disability, which consists of a large segment of this population (Slayter, 2016). Children with disabilities are also at higher risk of being abused and neglected (Sullivan & Knutson, 2000). They are less likely to achieve permanency than their peers in the child welfare system and spend more time in foster care in general (Slayter, 2016). Studies have found that youth with disabilities who are aging out are more likely to have lower educational attainment, worse employment outcomes, or are less likely to achieve independent living than youth aging out without disabilities (Anctil et al., 2007; Mares & Kroner, 2011; Salazar et al., 2019). There is also a strong connection between foster youth with mental health problems and their life outcomes: Youth who have symptoms of mental health disorders and emotional and behavioral issues are more likely to experience negative life outcomes (Dworsky et al., 2013; Fowler et al., 2009). Former foster youth diagnosed with mental health disorders were found to have higher levels of unmet needs than their peers in foster care (Katz & Courtney, 2015).

KEY DOMAINS OF INDEPENDENT LIVING OUTCOMES

Researchers have examined youth outcomes in ILPs in important domains associated with successful transitions to adulthood, self-sufficiency, and independent living. Significant indicators of independent living – such as educational attainment, employment, housing, early parenthood, behavioral problems, health, and life skills – have been examined in studies with promising but mixed results. To be eligible for ILPs, youth needs to be employed or enrolled in school. This partly explains why outcomes in areas like education and employment are generally higher than in other areas. The results of these studies are summarized below.

Educational Attainment

Educational attainment is one of the most important symbols of a successful transition to adulthood. It is strongly associated with employment opportunities and socio-economic status (Berger & Fisher, 2013). One study shows that former youth in foster care are three times more likely not to have a high school diploma or GED than their peers in the general population. It also finds that former youth in foster care are less likely to be enrolled in college and postsecondary education and to have completed a postsecondary degree (Courtney et al., 2011). Another study finds that foster youth at age 19 had much lower rates of completing high school or receiving a GED than youth in the general population (66% vs. 88%, respectively) and attending college (24% vs. 53%, respectively) (Courtney et al., 2016).

Almost every study that has examined the effectiveness of ILPs has measured educational attainment. The most common measurement of educational attainment is secondary education completion, such as obtaining a high school diploma or GED. Overall, ILPs have a positive impact on the educational attainment of youth aging out. For example, Georgiades (2005) finds that ILP participants are more likely to have a college education compared to non-ILP participants (31% compared to 0%). The multi-site evaluation of foster youth programs (Courtney, Stagner, & Pergamit, 2013) has also reported that ILP participants are more likely than non-ILP participants to report having enrolled in college. Barnow et al.'s (2015) study finds that 23% of the program participants have obtained a GED or high school diploma. The study also finds that early age program attendance and more extended enrollment in the program are positively associated with educational outcomes.

Employment

Employment is another important marker of a successful transition to adulthood, as unemployment and low wages are strong predictors of poverty. One study shows that former youth in foster care has a much lower employment rate and salaries than the general population (Courtney et al., 2011). Another study finds that about 70% of youth in foster care are employed compared with 91% of their peers in the general population (Pergamit & Johnson, 2009). A study also finds that at 21, foster youth are employed at a lower rate than their peers in the general population (54% vs. 65%, respectively) (Courtney et al., 2018). Studies have also found that the average income of former youth in foster care is well below the federal poverty line after they leave the foster care system (Dworsky, 2005).

Employment outcomes are commonly measured using full-time or part-time employment status, income, and length of employment. Many studies have also reported on the positive employment outcomes of ILPs. For example, Lindsey and Ahmed (1999) find that 59% of ILP participants have full or part-time employment compared with 44% of non-ILP participants. They also find that 63% of ILP participants experience unemployment for more than one month after discharge compared with 81% of non-ILP participants. Powers et al. (2012) find that the proportion of ILP participants who experience employment increases from 14% to 34%, compared with a slight decrease in non-ILP participants. They also find that, after a year, 45% of ILP participants were employed compared with 28% of non-ILP participants.

Housing

Another important marker of a successful transition to adulthood is securing a stable place to live. However, numerous studies have found a high prevalence of homelessness in former foster youth during their transition to adulthood. One study shows

that 14% of youth who age out experience homelessness within the first six months of leaving foster care (Dworsky & Courtney, 2009). Another study finds that 26% of youth experienced some type of homelessness after aging out of the foster care system (Crawford et al., 2015). Courtney et al. (2018) find that about 25% of foster youth in California experienced homelessness by age 21.

Most studies on the effectiveness of ILPs have reported positive housing outcomes, measured using homelessness, living arrangements, and residence in supervised settings. Lindsey and Ahmed (1999) find that ILP participants are more likely to live independently one to three years after discharge compared with non-ILP participants (68% and 41%, respectively). Lemon et al. (2005) find that ILP participants are less likely to experience homelessness than non-ILP participants (23% and 16%, respectively). Finally, Mares and Kroner (2011) determine that ILP participants who remain in the program longer are more likely to have independent housing.

Early Parenthood

Early parenthood has a major impact on a youth's transition to adulthood. Studies have shown that teen pregnancy and parenthood rates are higher among older foster youth than the general population (Courtney & Dworsky 2006; Pecora et al. 2003). By 19, almost half of the women had been pregnant compared with one-fifth of the general population (Courtney & Dworsky 2006). Another study shows that 56% of women and 30% of men had become parents by 21, which is almost twice the general population's rate (Courtney et al. 2007).

Behavioral Problems

Behavioral problems significantly impact a youth's development as they influence their overall wellbeing as they grow older. Behavioral problems generally include substance abuse, juvenile delinquency, incarceration, and domestic violence. One study finds that 45% of youth in foster care reported drug use within the previous six months and 49% had used drugs at some point in their life (Vaughn et al., 2007). Several studies have examined the substance abuse outcomes of ILP participants and have found that rates of alcohol problems increased at follow-ups, while rates of drug problems did not change (Jones, 2010, 2011).

Research has also shown that youth involved in foster care have higher criminal justice involvement rates than national averages. For example, one study shows that more than 50% of women and 80% of men are arrested at least once between 17 and 26 (Courtney, Dworsky, et al. 2011). Studies have further found that former youth in foster care are arrested and incarcerated at higher rates than average (Courtney & Dworsky, 2006; Reilly, 2003).

Health

Health status is another important indicator of a successful transition to adulthood. In general, youth in foster care have worse health statuses than their peers in the general population (Courtney et al., 2007; Pecora et al., 2009). Although many studies have linked youth aging out of foster care with health, few have examined the health outcomes of ILP participants, which include both their physical and mental health status. Mixed findings have been reported, and there has been inconsistency in the measurement of health outcomes. Lemon et al. (2005) report that ILP participants are less likely than non-ILP participants to receive mental health services (31% and 34%, respectively) and experience

difficulty in accessing medical care (53% and 58%, respectively). Georgiades (2005) reports no difference in depression levels between ILP participants and non-ILP participants.

Adult Living Skills

There are also mixed findings on adult living skills, and their measurements vary. Uzoobo et al. (2008) find that ILP participants perform better in daily living skills, financial management and budgeting, and self-care. In addition, ILP participants at follow-up have better skills acquisition (52.6% for non-ILP participants against 55.2% for ILP participants). Lindsey and Ahmed (1999) find that ILP participants are more likely than non-ILP participants to use housing assistance, Aid to Families with Dependent Children (AFDC), the Women, Infants, and Children (WIC) program, and emergency assistance. Using these programs is an indicator of having life skills.

THE GAP IN THE LITERATURE

In recent decades, youth aging out of foster care have garnered more attention, and ILPs have been instituted to help them make a successful transition to adulthood. Several outcome studies and program evaluations on the effectiveness of ILPs have been conducted (Courtney et al. 2007; Courtney et al. 2011; Montgomery, Donkoh, & Underhill, 2006; Naccarato & DeLorenzo, 2008) and show mixed findings. Some research has shown the potential positive effects of ILPs for youth aging out of foster care (Naccarato & DeLorenzo, 2008; Yelick, 2017). However, the conclusions are mostly limited due to methodological issues such as small sample sizes, non-longitudinal data, and missing data. The most frequently reported independent living outcomes in the literature were education, employment, housing, behavior problems, and early parenthood. However, most studies

missed one or more domains of the outcomes mentioned above. In addition, they have reported non-significant and mixed findings, and there is considerable variability in the measurements of independent living outcomes (Courtney et al., 2001). The weaknesses of current research limit the ability to make solid conclusions on the effectiveness of ILPs.

In addition, studies have identified several risk and protective factors that are associated with independent living outcomes in key domains. Some of these factors include placement stability, current placement setting, disability, mental health, previous homelessness experience, previous substance abuse experience, previous incarceration experience, remaining in foster care beyond 18, and having a connection to an adult or mentor. Although many studies have focused on potential risk factors and the literature has increased significantly over the past decade, knowledge about potential protective factors is largely lacking. Furthermore, most studies have only examined one or two outcomes and fail to cover other important domains of the outcomes.

Another limitation is the geographical restrictions. Few studies have examined outcomes on a national level: most have focused only on certain locations such as the Midwest or California. Despite the growing body of research, more rigorous studies need to examine specific risk and protective factors associated with key independent living outcomes and create more detailed models that guide evaluations.

The John H. Chafee Forster Care Independence Program (Public Law 106-169) requires the Administration for Children and Families (ACF) to develop a data collection system to track independent living services and their outcomes. To meet this requirement, the ACF established the NYTD and started collecting data on October 1, 2010. States were required to report basic demographic data and outcome information of youth aging out of foster care who receive ILP services (U.S. Department of Health and Human Services, 2012). This database allows researchers to examine ILP outcomes from a national

perspective. In addition, by establishing a standardized data collection system, the database allows practitioners, researchers, and policymakers to monitor the state's performance and youth outcomes over time (Okpych, 2015).

STUDY PURPOSE

Although a growing body of research has examined the risk and protective factors contributing to independent living outcomes, few studies have done so with a national sample. In addition, most studies have placed more emphasis on risk factors than protective factors. The purpose of this dissertation is to explore both the risk and protective factors associated with independent outcomes and to examine the relationship between the risk and protective factors and the key independent living outcomes of youth aging out of foster care using a combined dataset from NYTD and AFCARS. This combined dataset of all 50 states also allows us to provide an overview of independent living outcomes of youth aging out of foster care using a national sample and to explore the trends of independent living outcomes over time in each key domain. This study also intends to contribute to the current literature on ILPs and youth aging out of foster care by applying a multilevel growth curve modeling approach, which is rarely used in the research. In addition, this dissertation aims to develop a conceptual framework that explains the transition from adolescence to adulthood for youth in foster care and helps better understand how ILPs impact foster youth's independent living outcomes. Drawing from the findings, this dissertation fills the aforementioned gap in the research, gives guidance on program improvements, and offers implications for research, policy, and practice in this area.

RESEARCH QUESTIONS

This dissertation aims to answer three main research questions:

(1) What are the national estimates of key independent living outcomes for youth aging out of foster care who have received at least one ILP service, and what is the general trend over time (from age 17 to age 21) of those key independent living outcomes?

(2) Do risk factors including previous adverse experience, placement instability, and disability have negative impacts on key independent living outcomes for youth who age out of foster care after controlling for individual characteristics?

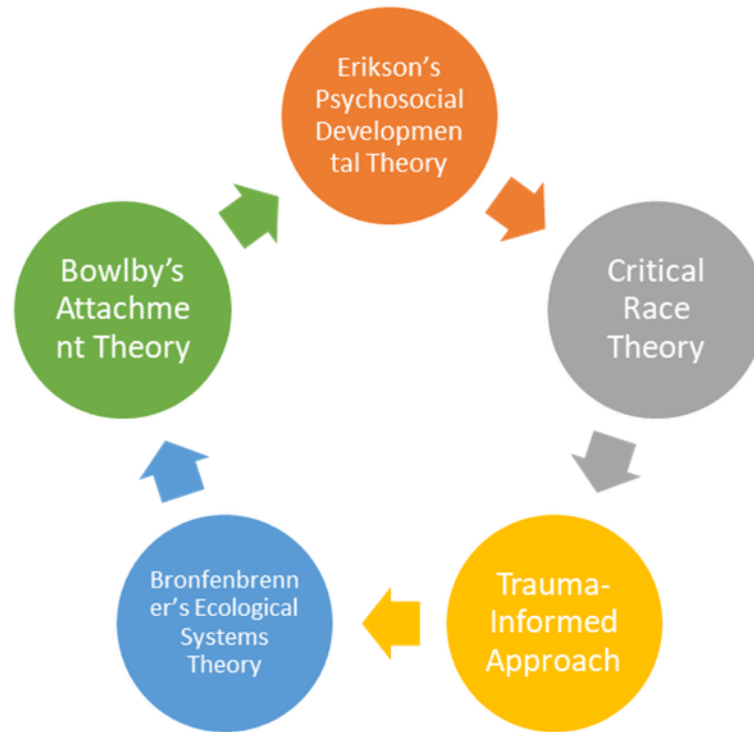
(3) Do protective factors including remaining in foster care beyond age 18, having a connection to an adult, and placement setting stability positively impact key independent living outcomes for youth who age out of foster care after controlling for individual characteristics?

Chapter 2. Conceptual And Theoretical Framework

Conceptual and theoretical frameworks regarding youth aging out of foster care are still in the early stages of development, and few studies are informed by tested theoretical approaches (Lee & Berrick, 2014; Smith, 2011; Stein, 2006). Therefore, to guide this study it is important to develop a conceptual framework to understand the risk and protective factors that may impact the transition to adulthood for youth aging out of foster care. Guiding theoretical frameworks are noticeably absent in prior program evaluations and outcomes studies of ILPs. This section identifies the relevant literature that serves as a

foundation for building the conceptual framework to help explain the successful transition to adulthood. The theoretical framework presents important risk and protective factors for youth in foster care that are consistent with both conceptual and empirical explanations from studies on child welfare. This chapter explains uses prior studies to explain why specific theoretical frameworks are important to the study of ILPs and youth in foster care outcomes. It identifies five relevant theories: Bronfenbrenner's ecological systems theory, Erikson's psychosocial developmental theory, Bowlby's attachment theory, critical race theory (CRT), and the trauma-informed approach (See Figure 1). It also further explains the significance of these theories for building a guiding framework for this study.

Figure 1: Theories Guiding the Conceptual Framework



ECOLOGICAL SYSTEMS THEORY

Ecological systems theory has proven to be a useful framework for designing and analyzing complex interventions and serves as the main guiding framework for this study, while the other theories show the importance of the risk and protective factors studied (Anderson & Mohr, 2003; Schweiger & O'Brien, 2005). According to Bronfenbrenner (1977, 1992), the structure of the social environment has five levels, and each has a unique effect on child development. The five systems levels are microsystem (immediate environments), mesosystem (relationships between microsystems), exosystem (indirect

environment that influences the microsystem), macrosystem (larger social and cultural context), and chronosystem (changes over time or life course).

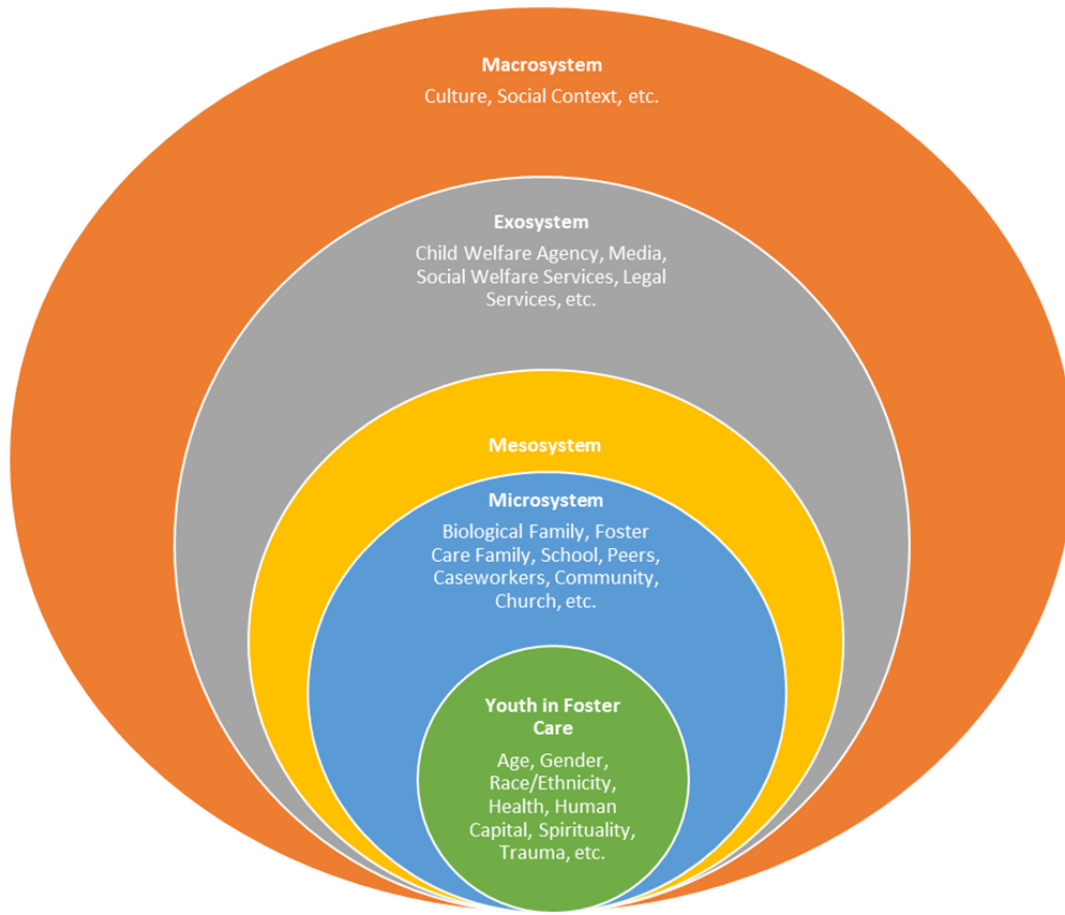
To study the independent living outcomes of foster youth, we must examine the issue in the context of multiple ecological systems; that is, we need to understand the relationships between children and their surrounding environment. The microsystem consists of the immediate environments in which a child lives, such as family, school, a peer group, or the community environment (Bronfenbrenner, 1977). For youth in foster care, this also includes the foster home, biological family, and child protective service workers. The mesosystem consists of relationships between microsystems (Schweiger & O'Brien, 2005). For example, the relationship between biological families and foster care families is a form of mesosystem. The exosystem consists of the indirect environment that does not affect the individual but influences the microsystem, such as the neighbors, media, and social welfare services (Bronfenbrenner, 1977, 1992). For youth in foster care, it also includes child welfare agencies or legal services. The macrosystem is the larger social and cultural context, which impacts individual-level factors (Schweiger & O'Brien, 2005). The last is the chronosystem, which concerns changes over time or one's life course. The age at which a child is removed from their biological family and historical events regarding youth in foster care are examples of the chronosystem.

Few studies on youth in foster care have used the ecological systems approach. One study on kinship foster care has concluded that the ecological systems theory is an appropriate theoretical framework when studying kinship foster care (Hong, Algood, Chiu, & Lee, 2011). It emphasizes the importance of understanding the relationships between children and their surrounding environments. Another study uses the ecological systems theory as a framework to study special needs adoption (Schweiger & O'Brien, 2005). It shows the multiple levels of influence of ecological systems on child development and

suggests applying the ecological perspective to the design of preadoption and postadoption services. Regarding youth aging out of foster care, one study examines the education and employment outcomes of adults placed in foster care, using ecological systems theory as a framework to identify the risk and protective factors (Harris, Jackson, O'Brien, & Pecora, 2009). The study examines risk and protective factors at each level of the ecological systems to understand the determinants of positive outcomes. Overall, these studies have shown that Bronfenbrenner's ecological systems theory is a useful framework for identifying the risk and protective factors associated with independent living outcomes.

In summary, Bronfenbrenner's ecological systems theory provides a suitable framework to identify the factors associated with a successful transition to adulthood for youth aging out of foster care. This theory is important to this study because it helps us understand the mechanism by which the direct and indirect environments influence youth in foster care. Prior studies have demonstrated the usefulness of this theory as it also illustrates how different ecological systems impact the developmental outcomes of youth in foster care (Harris, Jackson, O'Brien, & Pecora, 2009; Hong, Algood, Chiu, & Lee, 2011). Figure 2 shows the application of this theory to youth in foster care and variables of interest that may serve as predictors of success in ILPs.

Figure 2: Bronfenbrenner's Ecological Systems Theory and Youth in Foster Care



ERIKSON'S PSYCHOSOCIAL DEVELOPMENTAL THEORY

Youth aging out of foster care are at a critical juncture in their adolescent development. They are transitioning from adolescence to adulthood, and therefore developmental theories are especially important for them (Kools, 1997). One of the most influential theories of child development is Erikson's psychosocial developmental theory, which is important for understanding youth in foster care because it establishes the

theoretical foundation for adolescent psychosocial development. The central focus of this theory is the task of identity development, which refers to the process of recognizing one's capabilities and limitations when seeking one's identity (Kools, 1997, 1999).

According to Erikson's theory, adolescents develop their identity and social competence by completing a series of tasks from infancy to adulthood. This development includes eight stages, and each stage builds on the previous ones and is a prerequisite of the following one (Erikson, 1993). During each stage, a person experiences a conflict or task to resolve, which has either a positive or negative outcome for identity development depending on whether it is successfully completed (Erikson, 1959, 1968). If the person solves the task successfully, they develop a healthy personality. Otherwise, the result is unhealthy adaptation, which may impair one's ability to complete tasks at future stages. The stages and their relevant tasks are the following: (1) trust vs. mistrust; (2) autonomy vs. shame; (3) initiative vs. guilt; (4) industry vs. inferiority; (5) identity vs. role confusion; (6) intimacy vs. isolation; (7) generativity vs. stagnation; (8) ego integrity vs. despair.

Adolescence is commonly defined as a period of mental and emotional development between 12 and 19 years old (Mulkerns & Owen, 2008). The World Health Organization (WHO) defines adolescents as people between 10 and 19 years old, and the United Nations has defined "youth" as those between 15 and 24 years old. During this period, adolescents seek to define their identity and future roles as adults (Erikson, 1968, 1993). For adolescents and those in early adulthood (18-40 years old), who are the focus of this study, the basic tasks are identity vs. role confusion and intimacy vs. isolation. Successful completion of the identity vs. role confusion task leads to a strong sense of identity, while failure to do so can lead to role confusion and a weak sense of self. Successful completion of the intimacy vs. isolation task leads to the ability to form intimate

relationships with other people, while failure to do so can lead to loneliness and isolation (Erikson, 1993).

Several studies have linked Erikson's psychosocial developmental theory with youth in foster care. Research has found that the foster care experience has negative impacts on identity development (Kools, 1997; Yancey, 1992). Even youth from intact families often struggle to achieve self-reliance, and this is more challenging for youth who have been placed in the foster care system. For example, according to Erikson (1950), during the first stage of life, the developmental task is trust vs. mistrust. If an infant is placed in an insecure or dangerous environment in which their basic needs are not met, the child may not develop a sense of trust. If trust is not successfully developed at this stage, the child is also likely to face trouble in other stages of life. The issues related to youth in foster care include developing self-identity in birth and foster homes as they approach adulthood (Mulkerns & Owen, 2008). To ensure youth in foster care can successfully complete their developmental tasks and become independent adults, the child welfare system must provide them with support and assistance (Bruskas, 2008).

Few studies have specifically examined the impact of the "aging out" experience on the identity development of youth in foster care (Mulkerns & Owen, 2008). However, Erikson's theory places significant emphasis on one's early life experience, which provides a useful framework for understanding how the foster care experience in early childhood impacts later life. Although few studies directly link Erikson's psychosocial developmental theory to youth aging out of foster care, this theory plays an important role in understanding how the foster care experience influences life outcomes.

BOWLBY'S ATTACHMENT THEORY

Human attachments and their disruptions play a key role in youth who age out of foster care and their success in ILPs. Bowlby's attachment theory emphasizes the importance of attachment for human development. Attachment is defined as a "lasting psychological connectedness between human beings" (Bowlby, 1969, p. 194). According to Bowlby (1969), childhood development is strongly associated with a child's ability to form "attachment" with the primary caregiver. Children with a strong attachment to caregivers tend to be more adventurous, while children with weak attachment are more fearful and less adventurous.

Other researchers, such as Ainsworth, have built on Bowlby's original work. Ainsworth identifies three major styles of attachment in her studies: secure attachment, ambivalent-insecure attachment, and avoidant-insecure attachment (Ainsworth & Bell, 1970; Ainsworth, 1973). Later, Main and Solomon (1986) introduced a fourth style: disorganized-insecure attachment. Different attachment styles have different impacts on a child's future behaviors. Among the four styles, children with ambivalent attachment become distressed when the caregiver leaves, which might be associated with child neglect. In contrast, children with avoidant attachment tend to avoid caregivers, which might be due to child abuse. These different attachment patterns suggest that attachment impacts a child's future and link early childhood adversity and emotional and behavioral problems in adulthood (Ainsworth & Bell, 1970; Howe, 1995; Main & Solomon, 1986).

Many studies have linked attachment theory with the child welfare system, especially foster care. It is widely accepted that family reunification and stable foster care homes can significantly reduce the negative impacts of disruption in early childhood (Haight, Kagle, & Black, 2003; Stovall & Dozier, 1998; Tucker & MacKenzie, 2012), which makes attachment relationships especially important to the success of youth in

adulthood. Research has found that disrupting attachment in early childhood significantly influences development in adolescence and adulthood (Stein, 2006). Youth in foster care normally lack a primary care figure and quality caregiving in early childhood. Some have been removed from their biological parents shortly after birth and grow up in foster care. This leads to many negative outcomes in life as they grow older (Dozier, Stoval, Albus, & Bates, 2001; Howe, 1995; McWey, 2004).

Similar to Erikson's psychosocial developmental theory, few studies have directly linked attachment theory and youth aging out of foster care, even though this is an important topic within the child welfare literature. Bowlby's attachment theory, for example, connects early childhood adversity and future emotional and behavioral problems. Among the four attachment styles, children with avoidant or ambivalent attachment might experience the greatest disturbances in attachment, which could impact their growth and perception of the world. Child maltreatment or neglect may aggravate the disturbances in attachment and have long-lasting impacts on development in adolescence and adulthood. Stein (2004, 2006) finds that youth aging out of foster care frequently experience instability and placement disruption during their childhood. Downes (1992) finds that youth aging out of foster care often faces difficulties forming close relationships as they grew older, and another study finds that strong attachment is associated with positive outcomes among youth aging out of foster care (Sinclair et al., 2005). Child welfare research, policy, and practice have widely accepted attachment theory and consider it a powerful method to explain the difficulties youth in foster care experience as they approach adulthood. The theory also explains the mechanism by which risk factors in early childhood impact outcomes in adulthood. Therefore, it is also important to understand attachment theory when developing the conceptual framework of this study.

CRITICAL RACE THEORY

Racial disparities and disproportionate representations of races, particularly African American youth, is a significant feature of the child welfare system. CRT is “a framework that can be used to theorize, examine, and challenge the ways race and racism implicitly and explicitly impact on social structures, practices and discourses” (Yosso, 2005, pp. 70). The overrepresentation of Black people, Indigenous people, and people of color (BIPOC) in the foster care system is one of the most challenging issues facing child welfare today (Benedict, White, & Stallings, 1987; Shaw, Putnam-Hornstein, Magruder, & Needell, 2008). According to AFCARS, among the 437,283 children in foster care in 2018, 23% were African American, 21% were Hispanic, and 9% were of other races or multiracial (American Indian/Alaskan Native, Asian, Native Hawaiian/Other Pacific Islander; U.S. Department of Health and Human Services, 2018).

Solorzano (1997) defines CRT as “a framework or set of basic perspectives, methods, and pedagogy that seeks to identify, analyze, and transform those structural and cultural aspects of society that maintain the subordination and marginalization of people of color” (pp. 6). Law scholars Derrick Bell and Alan Freeman developed CRT in the mid-1970s, but its foundations can be traced to writers and activists such as Sojourner Truth, Frederick Douglass, W.E.B. Du Bois, Cesar Chavez, and Martin Luther King, Jr. (Delgado & Stefancic, 1993; Delgado & Stefancic, 2012). According to Delgado and Stefancic (2012), CRT “questions the very foundation of the liberal order, including equality theory, legal reasoning, Enlightenment rationalism, and neutral principles of constitutional law” (pp. 1-18). CRT has also influenced other disciplines such as sociology, ethnic studies, political science, and education (Delgado & Stefancic, 2000).

According to CRT, racism is deeply ingrained in our society and is difficult to eradicate. It is not an abnormal experience but an everyday occurrence for people of color

(Solorzano & Bernai, 2001). CRT claims that racism is institutional and embedded in society. Instead of the overt racism of the past, racism has become more subtle in modern American society (Ladson-Billings & Tate, 1995). CRT also posits that race is a social construct and a product of social thought that characterizes people based on their physical attributes and has nothing to do with genetic, biological reality (Abrams & Moio, 2009). Other core tenets of CRT include interest convergence, voices of color, and intersectionality or antiessentialism (Bell, 1980; Crenshaw, 1991; Delgado & Stefancic, 2012; Ladson-Billings, 1999). Together, these build the fundamental framework of CRT, which lays the groundwork for understanding the disproportionate representation of BIPOC populations within the foster care system.

It is regrettable that racial disproportionality and disparity in child welfare still exist and remain prevalent. This disproportionality is largely due to systemic over-surveillance and over-involvement (Dettlaff et al., 2020). Research has found that Black children in foster care are at greater risk of experiencing negative outcomes such as poor educational attainment, homelessness, and unemployment compared with children from other ethnic groups. The structural inequality and anti-Black racism in our society further aggravate this issue and disadvantage this already vulnerable population (Dettlaff et al., 2020; Hanks, Solomon, & Weller, 2018).

It is important to examine this racial disparity within any framework that explains risk and protective factors for youth aging out of foster care, and past literature has used CRT to do so. Gourdine (2019) has used a CRT perspective to explain how racism impacts equity in child welfare services. The author examines the disproportionality and disparities in service delivery to African American youth and raises concerns about data collection in the child welfare system. Overall, understanding the prevalence of racial disparity in the

foster care system and its negative outcomes could help better understand this issue. CRT offers a new and vital perspective for building the conceptual framework of this study.

TRAUMA-INFORMED APPROACH

Trauma is another critical piece in building the conceptual framework of this study. According to the Substance Abuse and Mental Health Services Administration (2014), “individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being” (p. 7). Many studies have linked childhood maltreatment, such as abuse and neglect, with long-term brain function and changes in neurobiological systems. The literature has found childhood trauma to be a significant predictor of children’s cognitive, behavioral, emotional, physical, and social functioning (Anda, et al., 2006; Perry, 2002; Perry, Pollard, Blakley, Baker, & Vigilante, 1995).

Studies have also found that childhood trauma is associated with the child’s long-term physical and mental health. For example, the Adverse Childhood Experience Study (ACE) by the Centers for Disease Control and Prevention (2019) found that ACEs were associated with risky health behaviors, chronic health conditions, low life potential, and early death. Approximately 2-3 million children in the United States experience child maltreatment, including physical and/or sexual abuse, each year (Perry & Hambrick, 2008). Given the widespread prevalence of trauma, it is important to understand its impact on child development.

It is not only important to understand trauma but also to set the context in which trauma is addressed. As a result, the trauma-informed approach or trauma-informed care (TIC) has increasingly received attention in recent years. Despite the growing knowledge

about trauma in the field, there is no standard definition of TIC. According to SAMHSA (2014), the trauma-informed approach is defined as “a program, organization, or system that is trauma-informed realizes the widespread impact of trauma and understands potential paths for recovery; recognizes the signs and symptoms of trauma in clients, families, staff, and others involved with the system; and responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re-traumatization” (p. 9). Another definition by Hopper, Bassuk and Olivet (2010) is “trauma-informed care is a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment” (p. 133). Although there is variation in how to define the trauma-informed approach in different settings, some key principles remain universal, such as safety, trustworthiness, peer support, empowerment, and being strength-based (Hopper, Bassuk & Olivet, 2010; SAMHSA, 2014).

The trauma-informed approach has also been introduced to the child welfare field. As the awareness of TIC increases, many models of TIC practices have been developed. For example, the National Child Traumatic Stress Network (NCTSN) provides a Child Welfare Trauma Training Toolkit to guide practitioners. It includes essential elements of the trauma-informed child welfare system as a framework: (1) maximize physical and psychological safety for children and families; (2) identify trauma-related needs of children and families; (3) enhance child well-being and resilience; (4) enhance family well-being and resilience; (5) enhance the well-being and resilience of those working in the system; (6) partner with youth and families; (7) partner with agencies and systems that interact with children and families (NCTSN, 2013). Many projects across the nation have adopted this model, and studies have found that TIC positively impacts the outcomes of children in the

child welfare system. One study on a statewide trauma-informed initiative found that children in the intervention group experienced less maltreatment, including less physical abuse and neglect, than the control group (Barto et al., 2018). Another evaluation of a trauma-informed training program shows that the program significantly increased participants' knowledge and use of trauma-informed practices (Kramer, Sigel, Conners-Burrow, Savary, & Tempel, 2013).

Many children in the child welfare system have long and complex trauma histories, and almost every child has experienced at least one significant traumatic event in their life. In particular, children in foster care have a higher prevalence of mental health problems than their peers in the general population (Ko et al., 2008; Taylor, Wilson, & Igelman, 2006). About 90% of youth in foster care has been exposed to various forms of violence and a traumatic event (Stein et al., 2001). Being removed from the home, experiencing multiple placements in out-of-home care, and transferring to different schools and peer groups often increase foster care children's stress and the likelihood of adverse traumatic symptoms (Halfon, Zepeda, & Inkelas, 2002; Ko et al., 2008). In addition to being traumatized, youth in foster care also face additional challenges, such as poverty, racial discrimination, grief and loss, and refugee or immigrant experiences (Barto et al., 2018). Furthermore, in addition to the maltreatment they experience before entering the child welfare system, youth aging out of foster care sometimes also experience maltreatment while in foster care (Salazar, Keller, Gowen, & Courtney, 2013). A study has found that over 90% of youth in foster care had experienced maltreatment, and 21% reported that maltreatment occurred in foster care (Pecora et al., 2003). Due to these challenges, the professionals working with youth in foster care must be aware of the prevalence and impact of childhood traumatic experiences (Fratto, 2016).

CHAPTER SUMMARY

Due to the lack of theoretical and conceptual frameworks in the literature, this chapter presents an ecological systems framework that also integrates Erikson's psychosocial developmental theory, attachment theory, CRT, and the trauma-informed approach to present a conceptual framework that helps better understand the transition to adulthood for youth aging out of foster care. Erikson's psychosocial developmental theory and Bowlby's attachment theory provide the theoretical foundation for child development at the individual level. Both approaches highlight the importance of a safe and stable childhood environment in shaping a child's future as well as the negative outcomes of an unstable childhood. They also inform us about the impact that foster care experiences have on child development. CRT provides a different perspective to examine the prevalence of racial disparity in the foster care and child welfare system. It also allows us to explain how racism impacts equity in the provision of child welfare services. The trauma-informed approach highlights the impact of trauma on youth in foster care and links the theories mentioned above. Finally, Bronfenbrenner's ecological systems theory offers a framework to examine youth in foster care in the context of multi-level systems. Using an ecological framework and important factors from the other theories – such as development, attachment, and race – this study provides a theoretical framework to examine the risk and protective factors that impact the outcomes of youths who have participated in ILPs and better understand the outcomes of youth aging out of foster care.

Multiple variables are included and tested in this study to reflect the integrated theoretical framework and the important factors that other studies have addressed. Some preliminary studies have identified several risk and protective factors associated with independent living outcomes for youth aging out of foster care (Courtney, Stagner, & Pergamit, 2013; Fowler, Toro, and Miles 2009). By drawing from the literature, the

following risk factors are tested in this study and hypothesized to negatively impact the independent living outcomes of youth aging out of foster care: homelessness, substance abuse, and incarceration before 17. The following protective factors are tested and hypothesized to positively impact their independent living outcomes: having a connection to an adult before 17 and remaining in foster care after 18.

First, Bowlby's attachment theory and Erikson's psychosocial developmental theory both emphasize the individual-level importance of a stable childhood environment. The negative impacts of ACEs on identity development and social functioning lead to multiple life challenges and behavioral problems in adolescence and adulthood, such as homelessness, substance abuse, and incarceration. These early childhood risk factors are associated with worse life outcomes in later life for youth aging out of foster care. As a result, homelessness, substance abuse, and incarceration before 17 are included in the model. In addition, guided by CRT, race is also added to the model as a categorical variable. Foster youth from minority groups are predicted to have worse independent living outcomes (Lu et al., 2004). The study also examines key outcomes among different racial groups.

Second, Bowlby's attachment theory suggests that a secure and stable childhood environment could improve psychosocial development in later life. As mentioned, disruption in early childhood has significant negative impacts on development in adolescence and adulthood. Missing biological parents and primary caregivers in early childhood also aggravates this issue. In contrast, a stable placement setting and strong attachment to a responsible adult have significant positive impacts on youth development. Some studies have found that remaining in foster care beyond 18 is a strong positive predictor of better independent living outcomes (Courtney & Hook, 2017). Therefore, this study includes remaining in foster care beyond 18 and having a connection to an adult as

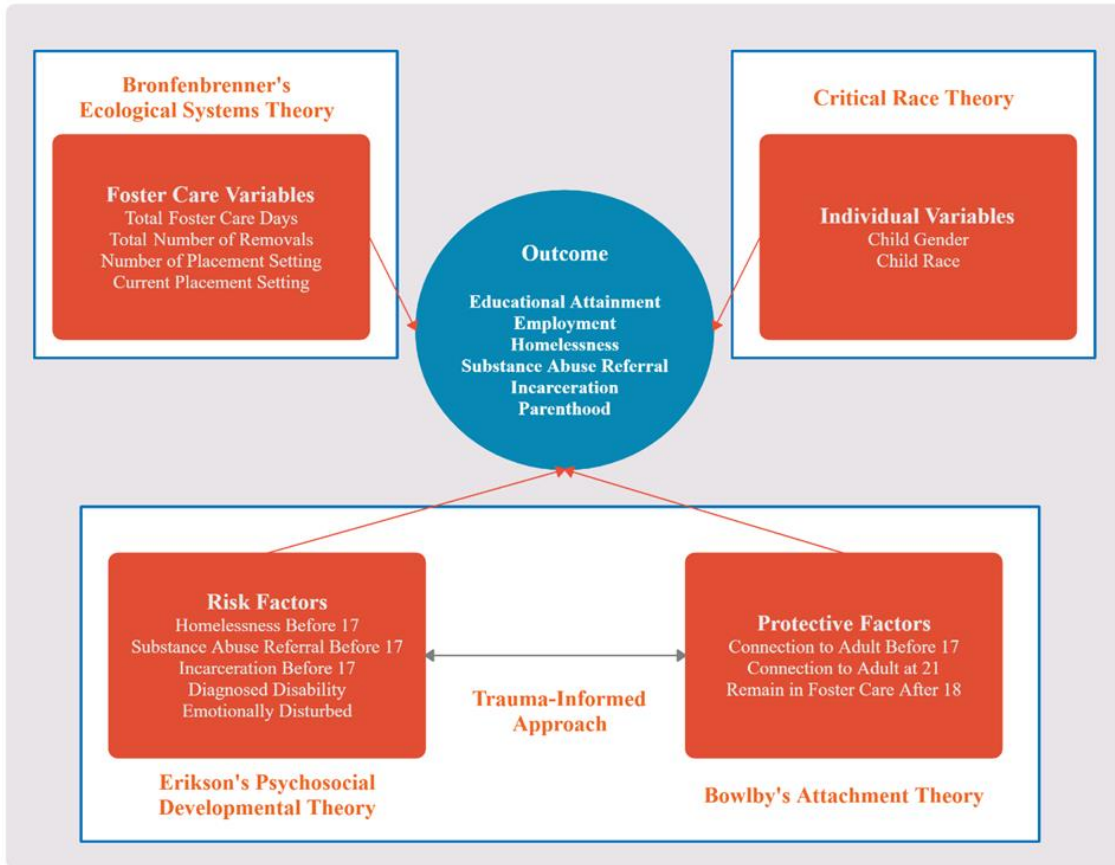
protective factors as studies have shown that having a supportive relationship with an adult is associated with better outcomes (Zinn, Palmer, & Nam, 2017). The Fostering Connections to Success and Increasing Adoptions Act of 2008 extended eligibility for Chafee independent living services and Title IV-E payments to 21 (Child Welfare Information Gateway, 2017). As of 2019, youth in 28 states, the District of Columbia, and nine Tribes are allowed to remain in foster care until 21, though some states choose to use state funding instead of federal funding to extend foster care programs.

Third, Bronfenbrenner's ecological systems theory provides a framework to understand the mechanisms through which the environment influences youth in foster care and different ecological systems impact their developmental outcomes. In addition to the individual characteristics and foster care experience, this approach examines how the child welfare system and ILP reception influence youth aging out of foster care. Some studies have indicated that the foster care experience is negatively associated with successful outcomes (Okpych & Courtney, 2018). A high number of placement changes indicates instability in foster care, and youth who experience multiple placement changes in foster care have worse outcomes in general (Okpych & Courtney, 2018; Sullivan, Jones, & Mathiesen, 2010). Therefore, this study includes variables relevant to the foster care experience, such as the reason for removal, number of placement settings, the total number of removals, and the current placement settings. In addition, this study explores the chronosystem regarding change over time. One innovation of this dissertation is that it explores the trends of independent living outcomes of youth aging out of foster care over time.

Figure 3 shows the complete conceptual framework model, which illustrates how protective and risk factors and the foster care experience are associated with independent living outcomes. It also demonstrates how the dissertation integrates the four theories

mentioned above. Guided by prior studies, this study includes educational attainment, employment, homelessness, substance abuse referral, incarceration, and parenthood as the outcome variables. Together, they represent the key life domains of youth aging out of foster care. Furthermore, homelessness before 17, substance abuse before 17, and incarceration before 17 were included as risk factors. Having a connection to an adult before 17 and remaining in foster care after 18 were included as protective factors. Foster care experience was measured using the following four variables: number of placements, total number of removals, placement settings, and reason for removal; together, these represent one's foster care history, current foster care status, and the level of stability in foster care. These variables are all important to youth's developmental and attachment outcomes and were added to the model as additional risk and protective factors based on prior studies (Crawford, Pharris, & Dorsett-Burrell, 2018; Courtney, Stagner, & Pergamit, 2013; Dworsky & Courtney, 2010; Fowler et al., 2009; Shah et al., 2017). In addition, variables related to youth characteristics such as gender and race were also added to the model. As noted, race is believed to be an extremely important predictor of child abuse and worse life outcomes, and thus the intersectionality of race and gender is important to consider in this study.

Figure 3: Conceptual Framework of Independent Living Outcomes and Associated Protective and Risk Factors



Chapter 3. Methods

DATA AND SAMPLE

The present study aims to use a national sample to examine both the risk and protective factors associated with key independent living outcomes of youth aging out of foster care. Research has identified several important domains that are indicators of a successful transition to adulthood and independent living: educational attainment, employment, homelessness, substance abuse referral, incarceration, and parenthood. This study includes these variables as the key independent living outcomes and indicators of a successful transition to adulthood. In addition, it aims to provide a national estimate of key independent living outcomes for youth aging out of foster care over time (from 17 to 21) and show the general trend of change over time.

This study uses two datasets to answer the research questions: The NYTD and the AFCARS data. The NYTD was created to track the services provided through the CFCIP and collect outcome measures to assess the program's effectiveness (National Data Archive on Child Abuse and Neglect, 2019). The NYTD contains data from all 50 states, the District of Columbia, and Puerto Rico. The 'Outcomes' file contains the results of longitudinal outcome surveys (NDACAN, 2019). States can choose the survey methods, such as whether to conduct them in person, online, by mail, or by phone. Youth participation in this survey is entirely voluntary. Each cohort is surveyed three times: a baseline survey at 17 and two follow-ups at 19 and 21. All youth in foster care who turned 17 in the baseline year were in the baseline population. For the follow-up surveys, states can draw a random sample from Wave 1. Fifteen states opted to use sampling for the FY2014 cohort: Colorado, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Missouri, Ohio, Pennsylvania, Tennessee, Texas, and Washington.

FY2014 cohort data were selected for this study, as it contains three complete waves of outcome surveys. The Wave 1, Wave 2, and Wave 3 response rates across the states were 73%, 71%, and 63%, respectively. For the FY2014 cohort, the original data contains 23,780 cases at the baseline, and 16,480 cases were eligible to be included in the FY2014 cohort at Wave 1 (NDACAN, 2019). To be eligible in the cohort, a youth must meet the following conditions: 1) be in the baseline population; 2) be in foster care on the day of the survey; 3) complete the survey within 45 days of their 17th birthday; 4) provide at least one valid answer. The present study consists of youth who responded to at least one survey question during Wave 3 ($n = 7,797$). There are significant state variations in the sample. For example, the highest response rate was South Dakota (72%), and the lowest response rate was Arizona (6%).

The AFCARS data provides additional case-level information on youth in foster care, such as the type of placement, number of placements, number of removals, and other important information relevant to this dissertation (NDACAN, 2019). The AFCARS data are collected semi-annually by states for all children in foster care, regardless of eligibility for Title IV-E payments. Both the NYTD and AFCARS data are available to the public. The present study combines linked NYTD data with the AFCARS data using encrypted and unique case IDs. The 2014 AFCARS data were extracted to merge with the NYTD 2014 cohort. Of the NYTD data, 97% matches the AFCARS data ($n = 7,538$). The final sample includes 7,538 youth.

MEASURES

Outcome Variables

Based on previous studies, six outcome variables that measure the key independent living outcomes were included in this study: educational attainment, employment,

homelessness, substance abuse referral, incarceration, and parenthood. All outcome variables were derived from the ‘Outcomes’ component at Wave 3 (age 21) and were coded as dichotomous (Yes or No). Educational attainment was measured using high school completion or enrollment. The variable was recoded (1 = high school diploma/GED; 0 = does not have high school diploma/GED). Employment outcome was measured using current full-time employment or part-time employment, and the variables were recoded (1 = current full-time or part-time employed; 0 = not employed). Homelessness was measured by whether the person had no regular or adequate place to live (1 = experienced homelessness; 0 = has not experienced homelessness). Substance abuse referral was measured by whether the person was referred for an alcohol or drug abuse assessment or counseling (1 = received a substance abuse referral; 0 = did not receive a substance abuse referral). Incarceration was measured by whether the person had been confined in a jail, prison, correctional facility, or juvenile or community detention facility for allegedly committing a crime (1 = has been incarcerated; 0 = has not been incarcerated). Parenthood was measured by whether the person had any children (1 = had a child; 0 = did not have a child).

Individual-Level Variables

Gender is binary (1 = male, 0 = female), and race variables are dummy coded. Non-Hispanic White was coded as the reference group. Non-Hispanic Black, Hispanic/Latino, more than one race, and other (Asian, American Indian/Alaskan Native, Native Hawaiian/Other Pacific Islander) were included in the race variable.

Foster Care Variables

The study also includes several variables related to the foster care experience. These variables were captured using the AFCARS data. The total foster care days were measured using the total days a child stayed in all foster care episodes. The total number of removals was measured using the number of times the child was removed from a home, including the current removal. The number of placements was measured using the number of places a child had lived as of the current removal episode. The placement settings variable was measured using the type of setting in which the child currently lived and was dummy coded with non-relative foster home coded as the reference group. Other categories include relative foster home, preadoptive home, group home, institution, supervised independent living, runaway, and trial home visit. A preadoptive home is a home in which the family intends to adopt the child. A group home is a licensed or approved home providing 24-hour care for children in a small group setting that generally has seven to twelve children. An institution is a childcare facility operated by a public or private agency and providing 24-hour care and/or treatment for children who require separation from their own homes and a group living experience. An institution is larger than a group home, with more than 12 children. Supervised independent living is an alternative traditional living arrangement where the child is under the agency's supervision but without 24-hour adult supervision, receives financial support from the child welfare agency, and is in a setting that provides for increased responsibility for self-care. Runaway indicates that the child has run away from the foster care setting. A trial home visit means that the child has been in a foster care placement but, under State agency supervision, has been returned to the principal caretaker for a limited and specified period (AFCARS, 2019).

Risk and Protective Variables

Several risk and protective factors (coded as dichotomous) were included in the study. They were extracted from both the NYTD and AFCARS data. Homelessness before 17, substance abuse referral before 17, and incarceration before 17, diagnosed disability except for being emotionally disturbed, and emotionally disturbed are included as risk factors. Protective factors include having a connection to an adult before 17, having a connection to an adult at 21, and remaining in foster care after 18. As mentioned in the conceptual framework, this study conceptualizes and constructs these risk and protective factors to reflect trauma in the study.

In the dataset, homelessness before 17, substance abuse referral before 17, and incarceration before 17 refer to a youth's lifetime experience, and they are coded to measure ACE. Homelessness at 21, substance abuse referral at 21, and incarceration at 21 in the follow-up surveys refer to the youth's experience in the past two years and are used as the outcome variables. A potential multicollinearity issue was tested and not detected by calculating the variance inflation factors (VIF).

Diagnosed disability was included as a risk factor in the study. A child is considered disabled if clinically diagnosed with at least one of the following disabilities: mental retardation, visually or hearing impaired, physically disabled, emotionally disturbed. Emotionally disturbed was recoded separately to measure mental health status. A youth was considered to have emotional disturbance if diagnosed with the following conditions: adjustment disorders, attention deficit and disruptive disorders, anxiety disorders, eating disorders, impulse control disorder, mood disorders, personality disorders, reactive attachment disorder, schizophrenic and other psychotic disorders, somatoform disorder, and Tourette syndrome.

MISSING DATA

Cases with missing data in the logistic regression models were excluded from the final sample (N = 7,538). The original sample included 16,480 youth. By conducting attrition analyses, significant differences in key variables at 17 were found between youth who participated in the survey at both baseline and 21 and youth who did not participate in the follow-up surveys. Youth who participated in both the baseline and follow-up survey were more likely to have a higher number of placement settings, have experienced homelessness, have diagnosed disability except emotionally disturbed, and have a connection to an adult at 21 than those who did not participate in the follow-up survey. No significant differences were detected concerning gender, race, total foster care days, total number of removals, current placement setting, substance abuse referral before 17, incarceration before 17, emotionally disturbed, connection to an adult before 17, and remaining in foster care after 18.

ANALYTICAL STRATEGY

As the first step of the analysis, descriptive statistics were produced to examine the individual level and other characteristics among the sample foster youth. Descriptive statistics of outcomes in each wave were also examined. Next, a binary logistic regression was conducted for each outcome in the study.

To examine the trend of key outcomes over time, hierarchical linear modeling (HLM) was used to analyze the data. In particular, longitudinal HLM (often referred to as growth curve modeling) was adopted; the repeated observations were nested within individual ones. The longitudinal HLM approach allowed for unequal time intervals in repeated measures and the modeling of nonlinear, discontinuous growth. Furthermore, it did not use listwise deletion for missing outcomes; instead, it employed the maximum

likelihood estimation with the missing at random (MAR) assumption (Pituch & Stevens, 2015). It was also possible to fit models with dichotomous outcomes through the logit link function (Heck, Thomas, & Tabata, 2013). Assumptions of HLM, including correct specification, independence, no measurement error for the predictors, and large sample size, were tested. All analyses were conducted using SPSS 26 and HLM 7.

CONFIDENTIALITY

No Institutional Review Boards (IRB) review was required for this public-use dataset. For the protection of the youth in the NYTD and AFCARS data, the child's date of birth (DOB) was recoded as the 15th of the month. If children were from counties with fewer than 1,000 records, the county FIPS code was recoded to 8 (not provided for reasons of confidentiality) (NDACAN, 2019).

Chapter 4. Results

DESCRIPTIVE STATISTICS

Table 1 shows the descriptive statistics of individual variables. The Wave 1 sample (age 17) includes 16,480 youth. Overall, 49.3% of the sample youth are women, and 50.7% are men. The majority of the sample youth are Non-Hispanic White (43.3%), Non-Hispanic Black (29.4%), and Hispanic/Latino (19.5%). Other racial identities of the sample youth include Asian (0.8%), American Indian/Alaskan Native (1.4%), Native Hawaiian/Other Pacific Islander (0.2%), and multi-race (5.4%).

For the foster care variables, the average total foster care length is 1,330 days. The average total number of removals is 1.48. The average number of placement settings in the current foster care episode is 5.56. The most common current placement setting is a non-relative foster home (38.7%). Other placement settings include relative foster home (12.2%), group home (17.4%), institution (19.2%), supervised independent living (2.3%), preadoptive home (1.6%), runaway (3.2%), and trial home visit (5.2%).

For the risk factors, the proportion of youth who experienced homelessness before age 17, substance abuse referral before age 17, and incarceration before age 17 is 17.1%, 27.1%, and 33.0%, respectively. The proportion of youth diagnosed with a disability but not emotionally disturbed is 36.9%. The proportion of youth who are emotionally disturbed is 36.9%. For the protective factors, the proportion of youth who had a connection to an adult before 17 is 94.4%, and that of those who had connection to an adult at 21 is 92.1%. The proportion of youth who remained in foster care at 19 is 29.8%.

Table 2 shows the descriptive statistics of outcomes by waves. In Wave 1, most of the youth (95.2%) were enrolled in high school, and 14.1% had full-time or part-time employment. The proportion of youth who had experienced homelessness, substance abuse

referral, incarceration, and parenthood before 17 is 17.1%, 27.1%, 33.0%, and 5.2%, respectively. In Wave 2, about 86.2% had completed high school or were enrolling in higher education, and 40.7% had full-time or part-time employment. The proportion of youth who had experienced homelessness, substance abuse referral, incarceration, and parenthood between 17 and 19 is 20.5%, 14.2%, 20.1%, and 10.5%, respectively. In Wave 3, about 84.8% had completed high school or were enrolling in higher education, and about 57.7% had full-time or part-time employment, while 29.5% had experienced homeless between 19 and 21. About 11.3% had a substance abuse referral between 19 and 21. In addition, 20.1% had experienced incarceration, and 24.2% had experienced parenthood between 19 and 21. Figure 4 displays the trend of each outcome in the three waves.

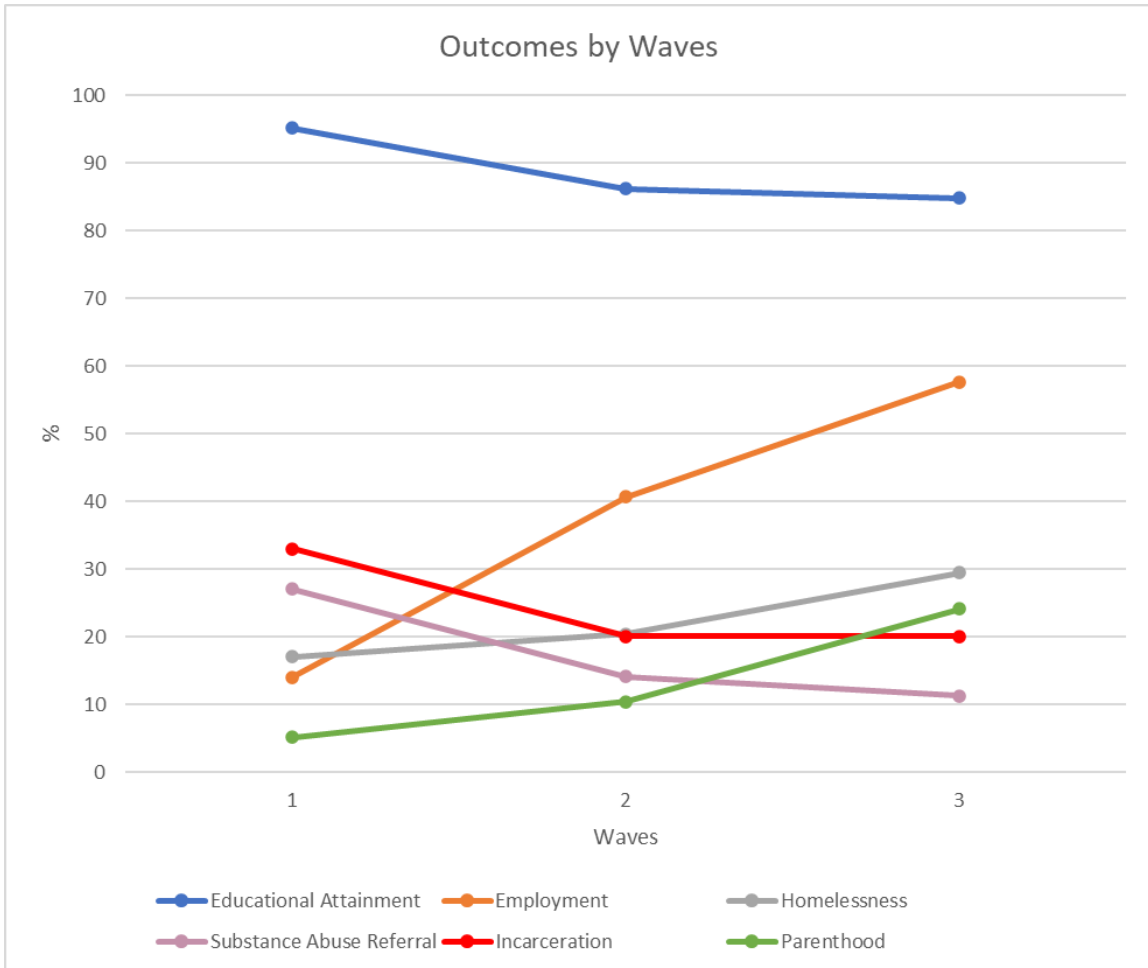
Table 1: Descriptive Statistics of Individual Variables at Age 17

	n (%)	Mean (SD)
Individual Level Variables		
Child Gender		
Male	8350 (50.7)	
Female	8130 (49.3)	
Child Race		
Non-Hispanic White	6661 (43.3)	
Non-Hispanic Black	4527 (29.4)	
Hispanic/Latino	3006 (19.5)	
Asian	127 (0.8)	
American Indian/Alaskan Native	213 (1.4)	
Native Hawaiian/Pacific Islander	28 (0.2)	
More Than One Race	824 (5.4)	
Foster Care Variables		
Total Foster Care Days		1330 (1273)
Total Number of Removals		1.48 (0.817)
Number of Placement Settings		5.56 (5.99)
Current Placement Setting		
Non-Relative Foster Home	6007 (38.7)	
Pre-adoptive Home	253 (1.6)	
Relative Foster Home	1896 (12.2)	
Group Home	2703 (17.4)	
Institution	2981 (19.2)	
Supervised Independent Living	355 (2.3)	
Runaway	497 (3.2)	
Trial Home Visit	814 (5.2)	
Risk and Protective Factors		
Homelessness Before 17	2764 (17.1)	
Substance Abuse Referral Before 17	4385 (27.1)	
Incarceration Before 17	5337 (33.0)	
Diagnosed Disability Except Emotionally Disturbed	1452 (10.6)	
Emotionally Disturbed	5685 (36.9)	
Connection to Adult Before 17	15272 (94.4)	
Connection to Adult at 21	7960 (92.1)	
Remain in Foster Care After 18	4909 (29.8)	

Table 2: Descriptive Statistics of Outcomes by Waves

	n (%)		
	Wave 1	Wave 2	Wave 3
Educational Attainment	15478 (95.2)	7377 (86.2)	6466 (84.8)
Employment	2303 (14.1)	3569 (40.7)	4429 (57.7)
Homelessness	2764 (17.1)	1761 (20.5)	2219 (29.5)
Substance Abuse Referral	4385 (27.1)	1218 (14.2)	844 (11.3)
Incarceration	5337 (33.0)	1730 (20.1)	1503 (20.1)
Parenthood	836 (5.2)	910 (10.5)	1819 (24.2)

Figure 4: Trends of Independent Living Outcomes at Three Waves



BINARY LOGISTIC REGRESSION

Table 3 and Table 4 present the results of the logistic regression model for each dependent variable (educational attainment, employment, homelessness, substance abuse referral, incarceration, and parenthood at age 21). Results of each outcome are discussed below.

Educational Attainment

Several variables are found to be significant predictors of educational attainment, including gender, total foster care days, number of placement settings, institution as current placement setting, runaway as current placement setting, trial home visit as current placement setting, homelessness before 17, incarceration before 17, connection to an adult at 21, and remaining in foster care after 18.

Among the individual-level variables, gender is a significant predictor. Women are more likely to have higher educational attainment than men. Men's odds of completing or being enrolled in high school are 0.74 times women's odds. None of the racial variables are statistically significant.

Among the foster care variables, total foster care length (OR = 1.00) and number of placement settings (OR = 0.97) are significant predictors of educational attainment. Among placement settings, institution (OR = 0.50), runaway (OR = 0.34), and trial home visit (OR = 0.60) are significant predictors of educational attainment. Youth who were placed in these settings are less likely to complete or stay enrolled in high school.

Among the risk and protective factors, homelessness before 17 and incarceration before 17 are significant risk factors against better educational attainment. Individuals who experienced homelessness before 17 have odds of completing or being enrolled in high school that are 0.72 times the odds of individuals who did not experience homelessness

before 17. Individuals who were incarcerated before 17 have odds of completing or being enrolled in high school that are 0.77 times the odds of individuals who were not incarcerated before 17.

Connection to an adult by 21 (OR = 2.27) and remaining in foster care after 18 (OR = 1.86) are significant protective factors of better educational attainment. Individuals who had a connection to an adult by 21 have odds of completing or being enrolled in high school that are 2.27 times the odds of those who did not have a connection to an adult by 21. Individuals who remained in foster care after 18 have odds of completing or being enrolled in high school that are 1.86 times the odds of those who were not in foster care at 19.

Employment

Several variables are significant predictors of employment, including the number of placement settings, group home as current placement setting, institution as current placement setting, trial home visit as current placement setting, incarceration before 17, diagnosed disability except emotionally disturbed, and being emotionally disturbed.

Among individual-level variables, no variable is a significant predictor of employment. Among foster care variables, number of placement settings (OR = 0.98) is a significant predictor of employment. Among current placement settings, group home (OR = 0.68), institution (OR = 0.61), and trial home visit (OR = 0.54) are significant predictors of employment. Youth who were placed in these settings are less likely to have better employment outcomes.

Among risk and protective factors, incarceration before 17, diagnosed disability but not emotionally disturbed, and being emotionally disturbed are found to be significant risk factors of employment. Individuals who were incarcerated before 17 have odds of getting full-time or part-time employment that are 0.82 times the odds of those who were not

incarcerated before 17 being employed. Youth who was diagnosed with a disability but not emotionally disturbed (OR = 0.82) and youth who are emotionally disturbed (OR = 0.87) have lower odds of achieving better employment outcomes.

Homelessness

Several variables are significant predictors of homelessness, including being Non-Hispanic Black, total foster care days, number of placement settings, group home as current placement setting, runaway as current placement setting, homelessness before 17, substance abuse referral before 17, connection to an adult by 21, and remaining in foster care after 18.

Among individual-level variables, being Non-Hispanic Black is a significant predictor of homelessness (OR = 1.30). The odds of being homeless for African American youth are 1.30 times the odds of the Non-Hispanic White group. Among foster care variables, total foster care length (OR = 1.00) and number of placement settings (OR = 1.06) are significant predictors of homelessness. Among placement settings, group home (OR = 1.24) and runaway (OR = 1.63) are significant predictors of homelessness. Youth who were placed in these settings are more likely to experience homelessness by 21.

Several risk and protective factors are found to be significant predictors of homelessness. Youth who experienced homelessness before 17 have odds of experiencing homelessness that are 1.56 times the odds than those who had not experienced homelessness before 17. Substance abuse referral before 17 (OR = 1.27) and incarceration before 17 (OR = 1.23) are also associated with a higher likelihood of experiencing homelessness by 21. Among the protective factors, connection to an adult by 21 (OR = 0.63) and remaining in foster care at 19 (OR = 0.57) are significant predictors of

homelessness. Youth who remained in foster care at 19 have odds of experiencing homelessness that are 0.57 times the odds of those who were not in foster care at this age.

Substance Abuse Referral

Just a few variables are significant predictors of substance abuse referral, including being Non-Hispanic Black, substance abuse referral before 17, and incarceration before 17. Among individual-level variables, being Non-Hispanic Black is a significant predictor of substance abuse referral by 21. The odds of substance abuse referral for African American youth are 0.74 times the odds of the Non-Hispanic White group. However, no foster care variables are found to be significant. Among the risk and protective factors, substance abuse referral before 17 (OR = 2.95) and incarceration before 17 (OR = 1.56) are significant predictors of substance abuse referral.

Incarceration

Several variables are significant predictors of incarceration, including gender, being Non-Hispanic Black, being multi-race, the number of placement settings, group home as current placement setting, institution as current placement setting, runaway as current placement setting, trial home visit as current placement setting, substance abuse referral before 17, incarceration before 17, connection to an adult by 21, and remaining in foster care after 18.

Among individual-level variables, men are 2.20 times more likely to be incarcerated than women. Being Non-Hispanic Black (OR = 1.36) and multi-race (OR = 1.65) increases the odds of incarceration compared with being Non-Hispanic White. Among foster care variables, number of placement settings is significantly associated with incarceration (OR = 1.03). Having more placement settings is related to having higher odds

of incarceration. Among placement settings, group home (OR = 1.32), institution (OR = 1.82), runaway (OR = 1.79), and trial home visit (OR = 2.34) are significant predictors of incarceration. Youth who were placed in such settings have higher odds of incarceration.

Among risk factors, substance abuse referral before 17 (OR = 1.84) and incarceration before 17 (OR = 2.37) are significant predictors of incarceration. Among protective factors, youth who had a connection to an adult by 21 have lower odds of incarceration (OR = 0.67). Youth who remained in foster care at 19 also have lower odds of incarceration (OR = 0.56).

Parenthood

Several variables are found to be significant predictors of parenthood, including gender, total foster care days, number of placement settings, substance abuse referral before 17, incarceration before 17, connection to an adult by 21, and remaining in foster care after 18. Among the individual-level variables, gender is a significant predictor of parenthood. Men have odds of having children at 21 that are 0.34 times the odds of women. None of the racial variables are statistically significant.

Among the foster care variables, total foster care length (OR = 1.00) and number of placement settings (OR = 1.04) are significant predictors of parenthood. No statistically significant variable exists among placement settings. Among the risk and protective factors, substance abuse referral before 17 (OR = 1.25) and incarceration before 17 (OR = 1.68) are significant risk factors of parenthood. Connection to an adult by 21 (OR = 0.74) and remaining in foster care after 18 (OR = 0.69) are significant protective factors for parenthood. Individuals who had a connection to an adult by 21 and remained in foster care after 18 have lower odds of parenthood.

Table 3: Estimates for Logistic Regression Model (DV: Educational Attainment, Employment, Homelessness at Age 21) (N = 7,538).

Variables	Odds Ratio		
	Educational Attainment	Employment	Homelessness
Individual Level Variables			
Child Gender (ref: Female)	.744**	1.084	.913
Child Race (ref: Non-Hispanic White)			
Non-Hispanic Black	.970	.896	1.304**
Hispanic/Latino	.981	1.095	.896
More Than One Race	1.188	.928	1.296
Other	.780	.884	1.480
Foster Care Variables			
Total Foster Care Days	1.000**	1.000	1.000**
Total Number of Removals	1.013	1.017	1.047
Number of Placement Settings	.968***	.982**	1.054***
Current Placement Setting (ref: Non-Relative Foster Home)			
Pre-adoptive Home	2.206	1.378	1.059
Relative Foster Home	.858	1.162	.836
Group Home	.858	.679***	1.236*
Institution	.504***	.608***	1.165
Supervised Independent Living	1.005	1.072	1.023
Runaway	.335***	.684	1.629*
Trial Home Visit	.609*	.539***	.960
Risk and Protective Factors			
Homelessness Before 17	.724**	1.101	1.562***
Substance Abuse Referral Before 17	.827	1.000	1.273**
Incarceration Before 17	.770*	.815*	1.227*
Diagnosed Disability Except Emotionally Disturbed	.990	.820*	1.016
Emotionally Disturbed	.876	.869*	1.101
Connection to Adult Before 17	1.020	1.246	.996
Connection to Adult at 21	2.272***	1.219	.632**
Remain in Foster Care After 18	1.857***	1.055	.565***

Note. *** p < 0.001, ** p < 0.01, * p < 0.05

Table 4: Estimates for Logistic Regression Model (DV: Substance Abuse Referral, Incarceration, Parenthood at Age 21) (N = 7,538).

Variables	Odds Ratio		
	Substance Abuse Referral	Incarceration	Parenthood
Individual Level Variables			
Child Gender (ref: Female)	1.008	2.201***	.335***
Child Race (ref: Non-Hispanic White)			
Non-Hispanic Black	.739*	1.355**	1.129
Hispanic/Latino	.971	1.063	1.092
More Than One Race	.896	1.653**	.868
Other	1.211	1.219	.809
Foster Care Variables			
Total Foster Care Days	1.000	1.000	1.000**
Total Number of Removals	1.223	1.115	1.043
Number of Placement Settings	1.013	1.030***	1.038***
Current Placement Setting (ref: Non-Relative Foster Home)			
Pre-adoptive Home	.645	.583	.619
Relative Foster Home	1.061	1.052	1.050
Group Home	1.180	1.322*	.935
Institution	.839	1.817***	1.093
Supervised Independent Living	.981	.790	.838
Runaway	.980	1.786*	1.370
Trial Home Visit	1.130	2.338***	1.147
Risk and Protective Factors			
Homelessness Before 17	1.099	1.067	1.013
Substance Abuse Referral Before 17	2.953***	1.844***	1.248*
Incarceration Before 17	1.558***	2.371***	1.679***
Diagnosed Disability Except Emotionally Disturbed	.713	.866	.807
Emotionally Disturbed	.970	1.043	.982
Connection to Adult Before 17	.981	1.089	.783
Connection to Adult at 21	.758	.673*	.743*
Remain in Foster Care After 18	1.031	.556***	.693***

Note. *** p < 0.001, ** p < 0.01, * p < 0.05

RESULTS FROM GROWTH CURVE MODEL

Results from the growth curve model for each outcome are shown below (Table 5-10). Each model has a binomial probability distribution and a logit link function. There are three repeated measures within subjects (Age 17, 19, 21) and waves are coded as *Time* (0, 1, 2). The parameter estimates for the six models, including the time-related variables, are shown below. Because of the coding of the time variable (Time = 0, 1, 2), the estimated intercept log odds coefficient could be interpreted as the percentage of individuals who were enrolled in high school, had full-time or part-time employment, experienced homelessness, had substance abuse referral, experienced incarceration, or experienced parenthood at the start of the study (age 17). The intercept represents the predicted log odds when any variable in the model is 0. The corresponding odds ratio could be obtained by exponentiating the log odds.

The summary of the mixed model of each unconditional model is displayed below. At Level 1, the time-related measurements are defined as nested within individuals. The mixed model suggests that there are three parameters to estimate. Two fixed effects including intercept and slope for time were estimated. The two random effects include the intercept variance and slope variance between individuals. Results for each outcome are discussed below and the complete growth model is displayed below. For each coefficient of the individual growth model, no significant variability concerning individuals was detected. Therefore, additional parameters in the conditional model were not tested. Rationale and possible explanations for this are further considered in the discussion section.

$$\eta_{ti} = \beta_{00} + \beta_{10} * \text{TIME}_{ti} + r_{0i} + r_{1i} * \text{TIME}_{ti}$$

Educational Attainment

On average, the odds ratio of completing or being enrolled in high school at 17 is 17.28, and it is statistically significant ($p < .001$). For the time variable, the negative coefficient suggests that, over each interval, an individual's likelihood of completing or being enrolled in high school decreases significantly ($p < .001$). For each 2-year passage of time, the odds of educational attainment decrease by a factor of 0.54. Initially (Time = 0), the log odds of educational attainment are 2.84. For the second interval (Time = 1), the estimated log odds are 2.24 [$2.84 + (-0.60) = 2.24$], and for the third interval (Time = 2), the log odds are 1.64 [$2.84 + (-0.60) + (-0.60) = 1.64$].

Employment

On average, the odds ratio of employment at 17 is 0.18 ($p < .001$). For the time variable, an individual's likelihood of getting full-time or part-time employment increases significantly ($p < .001$) over each interval. For each 2-year passage of time, the odds of employment increase by a factor of 2.93. Initially (Time = 0), the log odds of employment are -1.68. For the second interval (Time = 1), the estimated log odds are then -0.61 [$(-1.68) + 1.07 = -0.61$], and for the third interval (Time = 2), the log odds are 0.46 [$(-1.68) + 1.07 + 1.07 = 0.46$].

Homelessness

The odds ratio of homelessness at 17 is 0.19 ($p < .001$) on average. For the time variable, the coefficient suggests that an individual's likelihood of experiencing homelessness increases significantly ($p < .001$) over each interval. For each 2-year passage of time, the odds of experiencing homelessness increase by a factor of 1.38. Initially (Time = 0), the log odds of homelessness are -1.61. For the second interval (Time = 1), the

estimated log odds are then $-1.29 [-1.61 + 0.32 = -1.29]$, and for the third interval (Time = 2), the log odds are $-0.97 [-1.61 + 0.32 + 0.32 = -0.97]$.

Substance Abuse Referral

On average, the odds ratio of substance abuse referral at 17 is 0.35 ($p < .001$). For the time variable, an individual's likelihood of substance abuse referral decreases significantly ($p < .001$) over each interval. For each 2-year passage of time, the odds of substance abuse referral decrease by a factor of 0.51. Initially (Time = 0), the log odds of substance abuse referral are -1.04. For the second interval (Time = 1), the estimated log odds are then $-1.71 [-1.04 + (-0.67) = -1.71]$, and for the third interval (Time = 2), the log odds are $-2.38 [-1.04 + (-0.67) + (-0.67) = -2.38]$.

Incarceration

The odds ratio of incarceration at 17 is 0.44 ($p < .001$) on average. For the time variable, an individual's likelihood of incarceration decreases significantly ($p < .001$) over each interval. For each 2-year passage of time, the odds of incarceration decrease by a factor of 0.65. Initially (Time = 0), the log odds of incarceration are -0.81. For the second interval (Time = 1), the estimated log odds are then $-1.23 [-0.81 + (-0.42) = -1.23]$, and for the third interval (Time = 2), the log odds are $-1.65 [-0.81 + (-0.42) + (-0.42) = -1.65]$.

Parenthood

The odds ratio of parenthood at 17 is 0.04 on average, and it is statistically significant ($p < .001$). For the time variable, the positive coefficient suggests that, over each interval, an individual's likelihood of having a child increases significantly ($p < .001$). For each 2-year passage of time, the odds of childbirth increase by a factor of 2.56. Initially (Time = 0), the log odds of childbirth are -3.09. For the second interval (Time = 1), the

estimated log odds are then -2.15 [$-3.09 + 0.94 = -2.15$], and for the third interval (Time = 2), the log odds are -1.21 [$-3.09 + 0.94 + 0.94 = -1.21$].

Table 5: Results from the Growth Curve Model (Educational Attainment)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	2.849***	17.284***
Model for Slope, π_1		
B_{10}	-0.600***	0.548***
Random Effect	Variance	χ^2
r_0	0.527	5047.175
r_1	0.046	4953.98

Note. *** p < 0.001, ** p < 0.01, * p < 0.05

Table 6: Results from the Growth Curve Model (Employment)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	-1.689***	0.184***
Model for Slope, π_1		
B_{10}	1.077***	2.936***
Random Effect	Variance	χ^2
r_0	0.331	7597.117
r_1	0.034	6656.148

Note. *** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Results from the Growth Curve Model (Homelessness)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	-1.615***	0.198***
Model for Slope, π_1		
B_{10}	0.327***	1.386***
Random Effect	Variance	χ^2
r_0	0.507	7351.176
r_1	0.020	6356.316

Note. *** p < 0.001, ** p < 0.01, * p < 0.05

Table 8: Results from the Growth Curve Model (Substance Abuse Referral)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	-1.046***	0.351***
Model for Slope, π_1		
B_{10}	-0.671***	0.511***
Random Effect	Variance	χ^2
r_0	0.590	7917.428
r_1	0.062	4845.085

Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 9: Results from the Growth Curve Model (Incarceration)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	-0.815***	0.442***
Model for Slope, π_1		
B_{10}	-0.427***	0.652***
Random Effect	Variance	χ^2
r_0	0.775	8234.229
r_1	0.044	4920.633

Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 10: Results from the Growth Curve Model (Parenthood)

Fixed Effect	Coefficient	Odds Ratio
Model for Intercept, π_0		
B_{00}	-3.097***	0.045***
Model for Slope, π_1		
B_{10}	0.942***	2.566***
Random Effect	Variance	χ^2
r_0	1.476	4295.547
r_1	0.027	3521.086

Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Chapter 5. Discussion

SUMMARY OF FINDINGS

The present study aims to identify the risk and protective factors associated with successful independent living outcomes among a national sample of youth in foster care. Despite a growing body of literature that examines the risk and protective factors contributing to independent living outcomes, many studies are geographically limited. By using a combined dataset of NYTD and AFCARS data of all 50 states, this study provides an analysis of a national sample of youth in foster care throughout the United States.

In this study, about 30% of participants are Non-Hispanic Black. This number is higher than the national estimates according to AFCARS (23%), which suggests that African American youth are overrepresented in this sample. Since participants enrolled in the sample voluntarily, the reason for this disparity and the overrepresentation of African American youth is unclear. One possible explanation is that African American youth in foster care are contacted more frequently, thus increasing the chances of enrollment in the study, due to systemic over-surveillance and over-involvement. However, further research should be conducted to better explain this discrepancy.

In addition, the results show that Black youth are more likely to experience homelessness (OR = 1.30) and incarceration (OR = 1.36) at 21 than their peers from other ethnic groups. These findings align with previous studies and confirm that Black youth in foster care are at greater risk of experiencing negative outcomes (Dettlaff et al., 2020; Hanks, Solomon, & Weller, 2018). Racism and structural inequality may contribute to this. One interesting finding is that Black youth are less likely to have substance abuse referrals (OR = 0.74) than others, and there is no significant association between substance abuse referral and belonging to a certain race. This contrasts with the general population, in which

Black and Hispanic youth are more likely to experience substance abuse referral than White youth (Prince, Vidal, Okpych, & Connell, 2019). However, some studies have similar findings. For example, a study using a national sample also found that race and ethnicity are not related to substance abuse (Traube, James, Zhang, & Landsverk, 2012). Another study found that Black youth had higher rates of substance abstinence than Hispanic and White youth (Wall & Kohl, 2007). The reason for this difference remains unknown and thus needs further exploration.

By examining the outcome trends by waves and results from the growth curve modeling, this study compares each outcome at 17, 19, and 21. For educational attainment, about 85% of youth have received high school diplomas or were enrolled in post-secondary education by 21. This is a very promising result as it is much higher than the national high school completion rate, which is at only 50%. For employment, about 41% had full-time or part-time employment by 19, and 58% were employed by 21. Unlike employment and education, a worrying fact is that by 21, almost 30% of youth have experienced homelessness, a figure which increases significantly after 17. In contrast, substance abuse referral decreases significantly after 17, from 28% to only 11%. The incarceration rates remain the same for ages 19 and 21. About 20% of youth had been incarcerated after 17. Lastly, by 21, about 24% of youth had children, which increases significantly from 19, when the figure is about 14%. Although the numbers reveal some patterns about independent living outcomes of youth aging out of foster care, this study cannot make solid conclusions on the effectiveness of ILPs due to the lack of a comparison group. Some of the promising results show the potential value of ILPs, but a rigorous randomized controlled trial study is needed to confirm their validity.

One of the most important risk factors is placement stability, measured by the number of placement settings in which a foster youth was placed. The findings align with

previous studies that youth in foster care who had frequent placement changes are more likely to experience negative outcomes (Clemens, Lalonde, & Sheesly, 2016; Graves, Frabutt, & Shelton, 2007; Sullivan, Jones, & Mathiesen, 2010). In particular, a higher number of placement settings is associated with lower educational attainment, worse employment, and higher likelihood of homelessness, incarceration, and parenthood. However, extra caution is required when making causal assumptions as youth with behavioral problems are more likely to have unstable placements and frequent removals, which leads to negative outcomes. It is also noticeable that the number of removals is not a significant predictor of any outcomes. This is a surprising result as one would expect that both the number of removals and placement settings are important predictors of independent living outcomes. According to the literature, frequent removals from one's home are associated with trauma, which leads to negative outcomes (Dworsky et al., 2013; Tyler & Schmitz, 2013). This result might be due to the relatively low average number of removals in the sample (1.48), and it also suggests that the number of placement settings might be a stronger risk factor and a better representation of placement stability.

Another important predictor is the current placement setting. This study finds that being placed in a group home is a risk factor of unemployment, homelessness, and incarceration, and being placed in an institution is a risk factor of educational attainment, employment, and incarceration. With previous literature, this confirms that a certain placement setting is associated with independent living outcomes (Okpych & Courtney, 2018). There are also some contradictory findings in this study. Even though previous studies have found that youth placed in kinship foster home have lower odds of homelessness (Crawford et al., 2015), these results show that relative foster home are not a significant predictor of any outcomes. This study also finds that being placed in a group home is not significantly associated with early parenthood, which contradicts previous

findings (Dworsky & Courtney, 2010). These discrepancies might be partially due to the sampling method and geographical differences.

Among other risk factors, homelessness before 17, substance abuse referral before 17, and incarceration before 17 are all strong risk factors of independent living outcomes, as expected. Homelessness before 17 is associated with lower educational attainment and higher odds of experiencing homelessness by 21. Substance abuse referral before 17 is associated with higher odds of experiencing homeless, substance abuse referral, incarceration, and parenthood by 21. Furthermore, incarceration before 17 is a significant risk factor of all outcomes examined in this study. These risk factors confirm the findings from previous studies (Berzin et al., 2011; Crawford et al., 2015; Dworsky et al., 2013). This study's results have shown a clear pattern in which previous exposure to these risk factors is associated with increased risk of experiencing these negative outcomes again in adulthood; several previous studies have also mentioned this (Connel, Pittenger, & Lang, 2018; Green et al., 2016).

Although about half of the youth in the sample have a diagnosed disability (48%) and 37% are emotionally disturbed, diagnosed disability and being emotionally disturbed are not significantly associated with outcomes including educational attainment, homelessness, substance abuse referral, incarceration, and parenthood. The only exception is employment, in which both diagnosed disability and being emotionally disturbed are significant risk factors. This finding contradicts the previous literature and the expectation that disability and mental health are important risk factors for key independent living outcomes. However, a recent study also using NYTD data identifies similar patterns (Cheatham et al., 2020), in which disability is a significant predictor of employment but not a significant predictor of high school completion. In addition, youth with a diagnosed

disability have lower odds of achieving higher educational attainment and employment outcomes.

In addition to risk factors, this study also aims to identify protective factors associated with better independent living outcomes. The findings demonstrate the importance of maintaining connections with a positive adult role model, which echoes previous studies (Dworsky & Courtney, 2009; Tyler & Schmitz, 2013). In particular, the findings show that having a connection with an adult when between 17 and 21 years old is a significant protective factor and is associated with better educational attainment and a lower likelihood of experiencing homeless, incarceration, and parenthood by 21. It is noticeable that having a connection with an adult before 17 is not significantly associated with any outcomes examined in this study. This finding emphasizes the importance of having a mentor or a role model during this transitional period. Since this variable is only measured by asking the participant whether they had a connection with an adult, it is possible that this dataset does not capture other forms of social support. Future research should consider using more types of measurements to capture the different dimensions of social support.

Lastly, remaining in foster care after 18 is a significant protective factor of independent living outcomes. Specifically, remaining in foster care at 19 is associated with better educational attainment and a lower likelihood of experiencing homelessness, incarceration, and parenthood by 21. Many research studies have found similar results that remaining in foster care at an older age can significantly reduce risks and improve positive outcomes for youth aging out (Courtney, Okpych, & Park, 2018; Courtney, Park, & Okpych, 2017).

LIMITATIONS

The present study also has several limitations. First, the NYTD dataset has limited validity as most of the data are self-reported. There is also considerable attrition between the baseline and follow-up surveys at 19 and 21, which may create attrition biases and limit the generalizability of the findings. The response rates for Wave 2 (age 19) and Wave 3 (age 21) are relatively low (43% and 38% across states), making it hard to use the sample to generalize the findings to all youth in foster care at 21. Another worrying fact is that many youths could not participate in the follow-up Wave 2 and 3 surveys because they could not be located. One possible explanation is that they are hard to locate because they are homeless. As a result, it is possible that the results are biased and not representative of the population, especially of those who have experienced homelessness. Furthermore, the non-random sampling method used by the NYTD survey might add sampling biases to the study.

Second, the merged dataset only contains certain variables. As a result, this study does not include some potential risk and protective factors. Other variables might account for the variance in outcomes, such as resilience, financial status, motivation, and efficacy, among others. Without considering these confounding factors, the results may not be fully interpretable. In addition, the dataset misses other important outcome domains such as life skills, physical health, and financial ability, which are all important indicators of independent living outcomes. Finally, the dataset does not contain variables that directly measure trauma using a screening tool or survey questionnaire. Instead, this study uses previous adverse experiences as an indirect measurement of trauma. Future studies may consider adding a variable that directly measures trauma.

Third, this study's dataset only contains variables that measure whether the youth has received a certain type of ILP service. It does not have information about the scope and

quality of the ILP service received. It also lacks information on implementation fidelity and program designs across states, which are important factors in measuring the effectiveness of the programs. Although this study contains a large sample size, it also introduces large variability since states run ILPs in different ways. Future research needs to consider this limitation and find a way to control this variability. Some possible methods include adding a comparison group or analyzing states with similar ILP service delivery and different ILP service delivery separately.

Fourth, a common problem with a large sample size is that it easily yields statistically significant results. Researchers should be cautious because statistical significance is not the same as practical significance. Practical significance can be tested by calculating the effect size to measure the magnitude of the difference. One possible solution to better translate statistically significant results is to provide confidence intervals for the parameters.

Lastly, the growth curve modeling used in this study does not show significant variability across individuals. Therefore, only the results of the unconditional model are reported here, and no additional individual-level variables are added to test the improvement in the model fit. One possible explanation is that the individual growth model used in this study is not ideal for a nonlinear growth curve. Given the preliminary nature of this method, future studies could increase the model fit for binary outcomes based on the findings in this study.

IMPLICATIONS FOR POLICY AND PRACTICE

Several implications for policy and practice are discussed below by drawing from the findings of this study. As indicated by the results, evidence suggests that extended foster care is an important protective factor associated with better independent living

outcomes (Courtney et al., 2018). Currently, most states have extended foster care services and support to youth after 18 (Child Welfare Information Gateway, 2017). Some states, such as California, are even trying to extend their foster care to 25. Such efforts should be encouraged and receive more attention. This study has demonstrated the importance of extending foster care beyond 18, and policymakers should be aware of the protective effects of foster care for youth aging out. To expand coverage for youth in foster care, the Fostering Connections to Success and Increasing Adoptions Act may need to extend eligibility for ILPs and ETVs to youth who exit foster care at 16. One challenge is that even if youth meet the criteria and are eligible to remain in foster care, many still choose to exit the system after 18. Policymakers and child welfare caseworkers need to help youth in foster care understand the benefits of remaining in the foster care system for a longer time.

Beyond extending foster care, an important issue for youth in foster care is that they no longer have access to the services they receive from the child welfare agencies when they age out of the foster care system. During this vulnerable transition from adolescence to adulthood, they are suddenly exposed to a strange adult world with few preparations. They may lose access to their health insurance and other benefits, further exacerbating their trauma and other negative outcomes in later life (Morton, 2018; Osgood, Foster, & Courtney, 2010). Given these unique challenges faced by youth aging out, researchers, practitioners, and policymakers need to find a way to provide stable, supportive, undisrupted, and continuous services after youth exit the foster care system.

The high prevalence of homelessness, substance use, incarceration, and early parenthood among youth aging out of foster care between 19 and 21 requires the attention of policymakers and practitioners who work with this population. Given the unique challenges faced by youth in foster care and their complex needs during the transition to adulthood, child welfare workers and other professionals should receive more training in

providing culturally competent practice to better support youth in the foster care system. Although knowledge of trauma and trauma-informed care has been introduced and widely accepted in the child welfare system in recent years, more efforts must be made to ensure youth in foster care receive tailored and adequate services. In addition, interventions that aim to address trauma and other mental health needs of youth in foster care require more attention, and service provisions should incorporate knowledge of trauma.

Consistent with the previous research, risk factors such as placement instability, certain placement settings, previous adverse experiences (homelessness, substance abuse, incarceration before 17), diagnosed disability, and mental health status are associated with adverse outcomes. However, each risk factor has different impacts on every key domain of the independent living outcomes. In addition, individual-level variables such as gender or race also impact the outcomes. For example, Black youth are more likely to experience homelessness and incarceration by 21. Men are less likely to have better educational attainment than women by 21. Such differences need to be considered. At the policy level, future interventions and ILP programs need to be tailored to meet the diverse needs of this population. It is unlikely that one type of intervention will meet the needs of all. A targeted, community-based, and inclusive service approach is very much needed. Child welfare agencies should actively enroll youth who are at the most risk of negative outcomes into the program.

One of the most important findings of this study is that having a connection to an adult when aged between 17 and 21 is a strong protective factor of better outcomes. It has been well documented in the literature that having supportive and permanent relationships with parental figures, caring adults, and mentors positively impacts child development and prevents negative outcomes (Salazar et al., 2018; Steiner et al., 2019). Furthermore, having a permanent relationship increases placement stability, which also leads to better

independent living outcomes after youth exit the system (Stein, 2006). These findings confirm previous studies and emphasize the importance of having these relationships during the transition to adulthood. On the policy level, this finding also aligns with the objectives of the ILP, which are to help older foster youth achieve permanent connections with a caring adult and engage in positive youth development. The idea of achieving “relational permanency” has been adopted by many researchers and has received additional focus in recent years (Ball, Sevillano, Faulkner, & Belseth, 2021; Jones & LaLiberte, 2013). Even if youth aging out of the foster care system are unable to achieve permanency through reunification or adoption, policymakers and practitioners should still encourage these youth to build strong and long-lasting relationships with caring adults, mentors, peers, and friends.

In sum, to better inform evidence-based practice, a more rigorous program evaluation of ILPs is needed. States should consider further use of grant funds to develop more programs in more areas that are crucial to at-risk foster youth. The NYTD should consider incorporating additional questionnaires for future data collection to better capture other dimensions of the variables of interest. Child welfare agencies and policymakers should be aware of the potential risk and protective factors for youth in foster care and adopt different strategies to better meet the needs of this population.

CONCLUSIONS

Youth aging out of the foster care system face multiple disadvantages in terms of educational attainment, employment, housing, and life skills compared with their peers in the general population. Recognizing the gap in the literature, this study has examined the risk and protective factors contributing to key domains of independent living outcomes, including educational attainment, employment, homelessness, substance abuse referral,

incarceration, and parenthood. The study also constructs a theoretical framework that explains how these factors impact youth aging out of foster care during the transition from adolescence to adulthood. By using a merged dataset of NYTD and AFCARS data, this study allows us to perform analysis on a national sample of foster youth.

The findings of this study generally align with previous studies. Placement instability is an important risk factor for negative outcomes. Placement instability is associated with lower educational attainment, worse employment, and higher likelihood of homelessness, incarceration, and parenthood. Placement settings including group homes and institutions are other important risk factors associated with worse educational attainment, employment, homelessness, and incarceration outcomes. Having previous adverse experiences such as homelessness, substance abuse referral, and incarceration are all strong risk factors of independent living outcomes. The study also confirms that remaining in foster care after 18 and having a connection to an adult are both significant protective factors.

Several findings also contradict previous studies. For example, on an individual level, this study finds that Black youth are less likely than other races to have a substance abuse referral. Among other risk factors, the number of removals was not found to be a significant risk factor. Being diagnosed with a disability and being emotionally disturbed are not significantly associated with outcomes including educational attainment, homelessness, substance abuse referral, incarceration, and parenthood. Among protective factors, having a connection to an adult before 17 is not a significant protective factor of any outcomes examined in the study. The reason for these discrepancies requires further investigation.

Given the findings of this study, evidence-based and trauma-informed practices and policies must be developed and tailored to meet the needs of youth in foster care as they

transition from adolescence to adulthood. This study emphasizes the importance of providing extended foster care to youth in the system and ensuring they have continuous access even after they exit the child welfare system. Child welfare workers and policymakers should work together to provide culturally competent services and targeted interventions to youth aging out. They also need to support youth in achieving relational permanency by building connections with caring adults and mentors. The study highlights the need for an additional evaluation of the ILPs and an improvement of the data collection system. Taken together, these efforts can better support youth aging out and promote better life outcomes for these youth.

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