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Mediating Effects of Foster Care Experiences on Employment and Educational Outcomes in Aged Out Former Foster Youth

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MEDIATING EFFECTS OF FOSTER CARE EXPERIENCES ON EMPLOYMENT AND EDUCATIONAL OUTCOMES IN AGED OUT FORMER FOSTER YOUTH

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John Campbell

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To: Dean Tomás R. Guilarte
Robert Stempel College of Public Health & Social Work

This dissertation, written by John Campbell, and entitled Mediating Effects of Foster Care Experiences on Employment and Educational Outcomes in Aged Out Former Foster Youth, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Florida International University, 2021

DEDICATION

First, I dedicate this dissertation to my son, Christian, for his unconditional love, and for giving me purpose. From the moment he entered my life, I knew this work was possible and necessary. I also dedicate this dissertation to my grandmother, Ms. Fannie May Bell, who filled my childhood with hope, imagination, and endearment. Her spirit lives on in all that I have done, and all that I ever will do. I also dedicate this dissertation to my mother, Robin, for inadvertently showing me the value of perseverance- and my father, Arthur, for inadvertently teaching me the virtue of compassion. This dissertation is also dedicated to my colleague, Rebecca Young, whose friendship and cathartic exchanges were invaluable as I navigated the uncharted territory of doctoral studies- and my friend, Nya Land, whose companionship inspired me to conquer my inner-saboteur by making peace with my inner-critic. Last, but certainly not least, I dedicate this dissertation to the family and friends whose contributions to my journey have been invaluable. My sister, Danielle, and cousin, Alina, whose living rooms and couches served as an office to me on many nights. My cousin, and dear friend, Erica, whose sincerity, authenticity, and bravery, continue motivate me. My sister, Crystal, whose resilience has been inspirational from the moment we were both placed into foster care. My nieces and nephews, Carlito, Destiny, Caila, Rodney Jr., Camren, Jasiah, and Jalina, whose love and admiration continue to fill my life with joy and hope for a better tomorrow. My aunt, Gail “Sandra” Bowden, for sharing her maternal love and challenging me to trust myself despite ridicule from others. Ms. Arlene Hart, who also shared her maternal love, and encouraged me to reach for the stars, while I was aged out of foster care. And the countless other friends and family, who have been there for me throughout this journey. There isn’t enough room to list you all in this dedication, but you will always have a place in my heart and a seat at my table.

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ABSTRACT OF THE DISSERTATION

MEDIATING EFFECTS OF FOSTER CARE EXPERIENCES ON EMPLOYMENT AND EDUCATIONAL ATTAINMENT IN AGED OUT FOSTER YOUTH

by

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Professor Hui Huang, Major Professor

The economic well-being outcomes of youth who are removed from foster care status due to reaching the age of ineligibility (i.e., age out) is an important issue in public health and social work. Research indicates that circumstances experienced while aging out increase the risk of being unemployed and lacking an educational credential, which can result in adverse mental, emotional and behavioral health in adulthood (Yoshikawa et. al., 2012). Moreover, circumstances experienced by youth transitioning from foster care status (Chor et. al., 2018), and economic well-being outcomes upon aging out (Watt & Kim, 2019), tend to vary based on sex and race/ethnicity. This study investigated the interrelation between simultaneously embodying both a sex and race/ethnicity (i.e., intersectional identity), circumstances experienced through age 19 (i.e., foster care experiences), and economic well-being indicators at age 21, using secondary administrative data from a 4-year longitudinal study (N = 4657). First, bivariate and logistic regression analyses were conducted to observe the relationship between intersectional identity and economic well-being outcomes. Second, bivariate and logistic regression analyses were conducted to observe the relationship between foster care experiences and economic well-being outcomes. Third, mediation effects were tested using the LAVAAN v.2 package for

RStudio© v.1.3.959 (Rosseel, 2012), with each foster care experience as a mediator of the relationship between each, non-White male, intersectional identity and each economic well-being outcome. Results from the first set of analyses provided evidence that intersectional identity was significantly related to two of the three economic well-being outcomes (being full- or part-time employed or having attained a postsecondary education credential). Results from the second set of analyses provided evidence that foster care experiences were significantly related to each of the economic well-being outcomes. Results from the mediation analyses supported foster care experiences as mediators for some groups, but not all. With one exception, due to smaller odds of experiencing circumstances that jeopardize youths' odds of being employed or attaining an educational credential by age 21, female-containing intersectional identities tended to have greater of achieving these milestones. More specifically, Non-Hispanic Black females had smaller odds of being employed, due to experiencing multiple placement episodes by age 19. Conversely, with one exception, where mediation was evidenced among male-containing intersectional identities, smaller odds of employment and educational attainment were present. More specifically, material support services were associated with more favorable odds of attaining a postsecondary education credential by age 21 among Hispanic males of any race. Insights gained by this investigation may aid in developing strategic plans of action to address disparities in economic well-being outcomes among youth who transition from foster-care status. Additionally, ensuring that policy efforts target the material circumstances of youth who stay in care beyond age 17 may help improve their employment and educational prospects.

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I. INTRODUCTION

Mediating Effects of Foster Care Experiences on Employment Educational Attainment in Aged Out Foster Youth

Problem Statement

The education and employment outcomes of aged out former foster youth (21 years old) is an important issue in both public health and social work. First, although adverse health outcomes are shown to result from long term economic hardship in the public health literature (Ferguson et al., 2007; Yoshikawa et al., 2012), new research suggests that positive opportunities and experiences in adolescence can help create neural pathways and build new brain architecture that help youth heal from trauma and experience a successful adulthood (Branco, 2018). Recent child welfare policy efforts have focused on providing youth with independent living services through age 21. The overall purpose of these services is ensuring that youth achieve economic well-being upon leaving care (Administration for Children and Families, 2017). For example, a significant proportion of the services provided encourage the pursuit of postsecondary education or vocational training as both promote better employment outcomes and protect against negative outcomes during the transition to adulthood (Courtney & Hook, 2017). However, for nearly three decades, statistically significant disparities in economic well-being based on race and ethnicity, have been reported in aged out former foster youth at age 21 (Fanshel et al., 1990; Courtney et al., 2001; Pecora et al., 2006).

The historic prevalence of racially skewed economic well-being outcomes in aged out youth is concerning since, when compared to White youth, Black American youth who age out receive the lowest range of independent living services and are least likely to receive any type of services while in care (Okypch, 2015) when compared to all other racial groups. Considering the

fact that Black American youth represent 23% of youth placed foster care nationwide, despite only representing 14% of all children in the general population, it stands to reason that the racial disparities in outcomes among aged out former foster youth should be the subject of further investigation (United States Department of Health and Human Services, 2017; Annie E. Casey Foundation, 2017).

Although disproportionality and disparity are not new topics to the field of child welfare, most studies present findings which were observed prior to when the US economy recovered from the 2008 Great Recession. Data from the Luxembourg Income Study (LIS), which contains harmonized microdata from high- and middle-income countries, indicates that the employment prospects of young people were significantly impacted during the 2008 Great Recession, colloquially understood to have ended in the year 2010 (Sironi, 2018). There is evidence that much progress has been made since the end of the 2008 Great Recession, with employment and education outcomes among youth who age out showing overall improvement between the years 2013 and 2017 (Administration for Children and Families, 2017). Similarly, studies using national administrative data indicate that Black American aged out youth are likely to be enrolled in college than other minority groups (Kim et al., 2019), and Hispanic youth show positive outcomes, relative to both White and Black youth (i.e., less likely to be homeless, more likely to be enrolled in college, more likely to receive independent living services) (Watt & Kim, 2019; Kim, Ju, Rosenberg, & Farmer, 2019). However, Black American youth who age out continue to fare worse in terms of employment and postsecondary education completion (Watt & Kim, 2019; Kim, Ju, Rosenberg, & Farmer, 2019). An issue that is especially problematic since foster youth from other ethnic minority groups have tended to experience adverse economic well-being outcomes at higher rates than their counterparts as well. For example, Mexican American youth

experience higher levels of social disconnection, when compared to other groups (Casey-Cannon et al., 2006). And youth who identify as American Indian or Alaskan Native are found to have some of the highest rates of unemployment, when controlling for other factors (e.g., state unemployment rate, whether the state has enacted extended foster care, percentage of youth age 18-24 enrolled in higher education, whether their state has a legislated tuition waver for former foster youth) (Watt & Kim, 2019).

Research conducted since the end of the 2008 Great Recession suggests that experiences while aging out (between ages 16 and 19) are impactful on employment and education outcomes upon aging out (age 21), and significantly differ based on youths' intersectional identities (Baca-Zinn & Zambrada, 2019; Chor et al., 2018; Stewart et al., 2014). The quantitative application of an intersectional perspective, to examine economic well-being outcomes among former foster youth, would provide researchers and practitioners with an understanding of the etiological pathway through which ethnic minority youth experience higher rates of adverse employment and education outcomes at age 21. Similarly, an up-to-date analysis of which experiences and intervention types have the most impact on economic well-being indicators, would help inform practitioners' targeted intervention efforts, and ensure that the literature base is reflective of more recent trends.

Theoretical Framework

An intersectional perspective, that which considers an individual's identity as an amalgamation of at least two of the social locations (i.e., race/ethnicity, class, and gender), can advance understanding of the contextual differences in experiences that contribute to the etiology of health outcomes (Bauer & Scheim, 2019). Intersectionality theory posits that individuals experience substantively distinct experiences and outcomes based on these identities due to latent

social relations, history and the operations of structures of power (Murphy et al., 2009, pp. 8-13). Quantitative applications of an intersectional perspective help describe the existence and magnitude of outcome inequalities based on intersectional group membership, identifying the causal factors that drive inequalities of outcomes, and examining if, how, and to what extent, mediators have varying effects on individuals based on their intersectional group membership (Bauer & Scheim, 2019).

Consistent with these methods, The Commission on Social Determinants of Health (CSDH) framework emphasizes the interrelation of socioeconomic position (e.g., sex, race/ethnicity), contextual factors, and health outcomes (Murphy et al, 2009; Solar & Irwin, 2010, p.48). Critical components of the CSDH framework include structural determinants (e.g., socioeconomic position), and intermediary determinants (i.e., material circumstances, behavioral factors, and psychosocial factors) []. Consistent with the tenants of intersectionality theory, the CSDH framework assumes that although material, behavioral and psychosocial factors are associated with health outcomes, the distribution of these circumstances are a result of theorized, socioeconomic position and social context-based, inequities (Solar & Irwin, 2010, p.20-29). In other words, structural determinants are causally antecedent to intermediary determinants, which then lead to observed outcomes (Solar & Irwin, 2010).

The overarching framework for this study was a modified version of the CSDH framework which utilizes intersectional identity as the primary social location and circumstances prominently experienced by youth who age out as intermediary determinants. Circumstances experienced while aging out (between ages 17 and 19) are impactful on employment and education outcomes upon aging out (at age 21), and significantly differ based on youths' intersectional identities (Baca-Zinn & Zambrada, 2019; Chor et al., 2018; Stewart et al., 2014).

However, limited longitudinal research using national administrative data is available that explains the mediating effects of intermediary determinants experienced while aging out, on future employment and educational attainment, including the unique distribution of those contexts based on intersectional identity (Courtney et al., 2018; Kim et al., 2019; Watt & Kim, 2019). Accordingly, this study tested whether the relationship between social location (i.e., intersectional identity) and economic well-being indicators was mediated by circumstances (i.e., material, psychosocial, and behavioral) experienced through age 19, among former foster youth who turned age 21 in the year 2018.

II. LITERATURE REVIEW

This chapter starts with a summary of research design of each longitudinal study of aging out foster youth. After that, findings of these studies and other studies on aging out foster youth were presented. The findings were organized by the factors (i.e., independent variables) of these studies.

Longitudinal Studies of Aged Out Youth

The Northwest Foster Care Alumni Study

In a joint effort between Oregon and Washington state child welfare administrations, the Northwest Foster Care Alumni Study (hereafter; Northwest Study) studied former foster youth between the ages of 20 and 33 who had been placed in family foster care between 1988 and 1998, and were served by one of three agencies: (1) Casey Family Programs; (2) the Oregon Department of Human Services, Division of Children, Adults, and Families; or (3) the Washington Department of Social and Health Services, Children's Administration, Division of Children and Family Services (Pecora et al., 2005). A total of 659 case record reviews were conducted, and qualitative data was additionally collected from 479 members of the study

sample, with an adjusted response rate of 75.7 (Pecora et al., 2005). The sample included 60.5% women and 54.5% people of color, with the average age at time of interview being 24.2 years of age (Pecora et al, 2005). The mean length of time in care was 6.1 years, and the mean placement change rate was 1.4 placements per year while in care.

The Midwest Evaluation of the Adult Functioning of Former Foster Youth

The Midwest Evaluation of the Adult Functioning of Former Foster Youth (hereafter; Midwest Study), also known as the Midwest Study, is the largest longitudinal study of young people aging out of foster care and transitioning into adulthood since the passage of the 1999 Foster Care Independence Act. In a joint effort between Chapin Hall at the University of Chicago and the School of Social Work at the University of Washington, the Midwest Study collected self-reported data from in-person interviews, and administrative case files of aging out youth across 5 waves, in years 2003 (Wave I, ages 17-18, n=732), 2004 (Wave 2, age 19, n= 603), 2006 (Wave 3, age 21, n= 591), 2008 (Wave 4, ages 23-24, n=602), and 2010 (Wave 5, age 26, n=596) (Courtney, Dworsky, Brown, Cary, Love, & Vorhies, 2011). Adult functioning of several domains was measured, including living arrangements, relationships with family of origin, social support, education, employment, economic well-being, receipt of government benefits, physical and mental well-being, health and mental health service utilization, sexual behaviors, pregnancy, marriage and cohabitation, parenting, and criminal justice system involvement.

The National Youth in Transition Database

In February of 2008, the US Children's Bureau partnered with Cornell University to conduct a national evaluation of service engagement outcomes in aging out foster youth, the National Youth in Transition Database (NYTD). The NYTD uses surveys to collect two types of data: 1) service engagement data, which was submitted every 6 months on independent living

services for eligible youth paid for or provided by states through the Chaffee Foster Care Independence Program (CFCIP); 2)Self-reported outcome data on a cohort of aging out foster youth aged 17 through a survey administered by states every two years to create baseline data at age 17 and follow up data at ages 19 and 21, after which another cohort of aging out foster youth aged 17 are to be sampled (Lee & Ballew, 2018). The NYTD was developed through the lens of translational research, a systematic movement of research findings into the development of innovative interventions and practices through the utilization of knowledge derived from interventions, practices and policies (Bronfenbrenner Center for Translational Research, n.d.). Findings from these areas are intended to improve the health and well-being of their intended populations.

Factors Associated with Outcomes

Based on the research several factors may contribute to the observed racial disparities in economic well-being outcomes including the structural determinants (i.e., intersectionality based on sex and race), and intermediary determinants such as material circumstances (i.e., incarceration, utilization of independent living services, homelessness, prior employment), psychosocial circumstances (i.e., reason for entry to care, mental health diagnosis, connection to supportive adult), and behavioral circumstances (i.e., clinical disability diagnosis).

Sex

Regarding the impact of sex on education outcomes in aging out foster youth, males are overall less likely to belong to a group with a post-secondary education credential than female youth (Courtney et al., 2011; Kim et al., 2019; Pecora et al., 2006). In former foster youth, a greater proportion of female former foster youth are enrolled in postsecondary education program when compared to males (Courtney et al., 2018, p. 34). And aged out females are also

more likely to have completed a two-year college program than male former foster youth (Courtney et. al., 2007). Similarly, regarding the impact of sex on current employment at age 19, in aging out foster youth, females tend to be employed at higher rates than males (Dworsky, 2005). Aged out females also tend to have higher rates of ever having a job since leaving care by age 23 or 24 (Courtney et al., 2010, p.28). However, these differences in employment rate are not often of statistical significance (Courtney et al., 2007; Courtney, Dworsky, Lee, & Rapp, 2010). However, regarding the impact of sex on intermediary determinants in aging out foster youth, males are more likely to have a disability diagnosis, of any kind, than females (Wiegmann, Puntam-Horpstein, Barrat, Magruder, & Needell, 2014). Aging out male foster youth are also more likely to have an emotional disturbance diagnosis when compared to females (p.7). These differences are due to statistically significant associations between foster care placement setting, drop-out rates, and disability diagnosis (Wiegmann et al., 2014). In addition, aging out male foster youth are more likely to have be arrested or have spent at least one night in a criminal justice-related correctional facility when compared to females by age 21 (Courtney et al., 2007, p. 66) and are more likely to belong to subgroups of youth classified as more likely to experience homelessness or substance abuse (Shpiegel & Ocasio, 2015). And female aging out youth tend to receive more independent living services than males (Chor et al., 2018; Okpych, 2015).

Significant disparities in economic well-being are prevalent among youth who age out of foster care, based on social location (Kim et al., 2019; Wiegmann et al., 2014). In terms of employment, females tend to be currently employed at higher rates than males (Dworsky, 2005). Aged out females also tend to have higher rates of ever having a job (Courtney et al., 2010, p.28). Similarly, in terms of educational attainment, aged out males tend to have significantly lower odds of belonging to a group with a post-secondary education credential when compared

to females (Courtney et al., 2011; Kim et al., 2019; Pecora et al., 2006). However, these differences in employment rate are not often of statistical significance (Courtney et al., 2007; Courtney et. al., 2010). Conversely, race/ethnic disparities in employment are routinely significant, with Non-Hispanic Black youth being less likely to be employed when compared to their counterparts (Watt & Kim, 2019; Hook & Courtney, 2011; Dworsky, 2005).

Race

Regarding the impact of race on education outcomes in aging out foster youth, the odds of being enrolled in postsecondary education across time is significantly greater for Hispanic and Black youth, than for White youth (Kim et al., 2019; Watt & Kim, 2019). Although Hispanic youth have statistically significant higher rates of post-secondary enrollment when compared to all other racial groups (Watt & Kim, 2019), in terms of postsecondary education program completion, youth who self-identify as "Other" (i.e., not non-White Hispanic nor White, nor American Indian, nor Black American) appear to have reduced odds of having completed at least some college and having completed any postsecondary education or training between ages 17-33 (Dworsky et al., 2010). Regarding employment, although employment among youth who age out tends to increase between ages 17 and 21, Black American youth are found to have more trouble finding a job and are only half as likely as their non-Black peers to be employed by age 21 (Hook & Courtney, 2011). The fact that Black American youth are more likely to attend postsecondary education (Kim et al., 2019), may at least partially explain why they have lower employment rates, since aging out foster youth report having trouble balancing work and postsecondary education (Dworsky & Courtney, 2010). On the other hand, regarding the impact of race on intermediary determinants in aging out foster youth, Black American youth are less likely to receive independent living services (ILS) (including education and training voucher)

(Shpiegel & Ocasio, 2015), and tend to belong to groups who receive limited ILS, compared to other groups (Chor, Petras & Perez, 2018; Okpych, 2015). In addition, non-White Hispanic aging out foster youth are more likely to belong to subgroups classified as having multiple problems such as homelessness, incarceration, and lack of supportive adult (Shpiegel & Ocasio, 2015).

Intersectional group membership

Regarding the impact of intersectional group membership on employment outcomes, Black American males who age out fare worse than other intersectional groups, while Black American females tend to fare worse in terms of finding employment in the first place (Courtney et al., 2011; Hook & Courtney, 2011; Kirk et al., 2012). For example, wages for the entire Midwest study population increased between ages 17 and 21 but stagnated from age 21 through 24 (Hook & Courtney, 2010). However, observing outcomes at age 24, a significantly lower number of Black American males, are employed when compared to other race/ethnicity/gender subgroups (Courtney et al., 2011). Similarly, while Black American females have more trouble finding a job than their White American counterparts (i.e., 43% is unemployed versus 20%) (Hook & Courtney, 2011). These trends are similar to those found in the general population as, among all Black male age groups, unemployment is highest between the ages of 16 and 24, with Black males having higher unemployment rates than Black females across all age groups (United States Bureau of Labor Statistics, 2019).

Individual utilization of independent living services

Regarding the impact of individual utilization of ILS on employment, receipt of any ILS between ages 17 and 21 is significantly associated with employment at age 21 (Kim et al., 2019). And, regarding impacts on education, receipt of ILS is also significantly associated with obtaining high school degree or GED and being enrolled in college (Kim et al., 2019). These

findings are congruent with systematic reviews of ILS (Montgomery, Dunkoh, & Underhill, 2006; Stot, 2013). Regarding the impact of utilizing specific ILS, receipt of postsecondary education support related services is associated with increased likelihood of employment in aging out foster youth (Kim, Ju, Rosenberg, & Farmer, 2019; Okpych & Courtney, 2014). And individual receipt of mentoring, career preparation, nor employment training related ILS is positively associated with education and employment outcomes in aged out former foster youth (Kim et al., 2019, p. 299). However, studies have not tested for the mediating effects of these services on the relationship between structural determinants and employment in aging out foster youth.

Incarceration

Regarding the impact of incarceration on employment, a history of incarceration decreases the odds of being employed at age 19 (Courtney et al., 2011). However, national administrative data, indicates that adjudicated youth are less likely to report full time employment at age 19 than those who were not (Lee & Ballew, 2018). And regarding impacts on postsecondary education, a history of incarceration is negatively and significantly associated with college entry (Okpych, Courtney, & Dennis, 2017). Similar impacts are found in youth from the general population, with criminal justice involvement having a negative effect on future education outcomes (Kirk & Sampson, 2013; Sweeten, 2006).

History of homelessness

Regarding the impact of homelessness on education, youth who have experienced homelessness at age 17 or earlier negatively associated with high school completion (Kim et al., 2019). Moreover, regarding its impact on employment in former foster youth, a history of homelessness is associated with lack of job stability (Curry & Abrams, 2015). Similarly,

homeless youth from the general population experience higher rates of unemployment (Courtney & Dworsky, 2006), and economic instability (Barker, 2016) when compared to those who are not homeless.

Placement setting

Regarding the impact of placement setting on employment, youth who age out while residing in a non-relative foster home are more likely to be employed than youth who age out while in congregate care (i.e., a group home setting) at age 21 (Kim et al., 2019) and age 24 (Macomber et al., 2008). Regarding employment outcomes at age 24, aging out while in a group home remains a statistically significant, even after prior employment and county-level unemployment rate of youths' residence are controlled for (Macomber et al., 2008, p.42). And regarding the impact of placement setting on education outcomes, youth placed in a group home or other foster care placement are less likely to complete high school than those who live in a non-relative foster home (Kim et al., 2019). Similarly, youth placed in a non-relative foster home are more likely to have post-secondary education than those placed in other foster care settings (Kim et al., 2019).

Reason for entry to foster care

Regarding the impact of reason for entry to care on employment, being placed in foster care for reasons other than abuse, neglect, or voluntary placement is associated with increased risk of being unemployed in former foster youth (Dworsky, 2005, p. 1096). And regarding impacts of reason for entry to care on education, referral to foster care due to sexual abuse, versus other types of maltreatment, is negatively associated with high school completion (Okpych et al., 2017).

Clinical disability diagnosis

Aging out youth with a mental health diagnosis are more likely to belong to a subgroup of youth who have also experience economic disadvantage (e.g., inability to pay bills on time), than those with no diagnosis (Samuels & Pryce, 2008; Courtney et al., 2010). Regarding impacts on education, neither internalizing psychological disorder nor external behavioral health is statistically significantly associated with high school completion and college entry (Okpych, Courtney, & Dennis, 2017). However, aging out youth who have been diagnosed with a physical disability are less likely to graduate high school, report post-secondary enrollment, or be employed, when compared to those who do not (Anctil et al., 2007; Wagner, Cameto, & Newman, 2003). And, in terms of sex-based differences, males who age out are more likely to have a disability diagnosis of any kind or have an emotional disturbance diagnosis when compared to females when compared to females (Wiegmann, Puntam-Horpstein, Barrat, Magruder, & Needell, 2014).

Connection to supportive adult

Regarding the impacts of a supportive adult on employment in aging out youth, connection to a supportive adult is associated with decreased risk of trouble with securing employment (Lee & Ballew, 2018; Shpiegel & Oscasio, 2015). Regarding impacts on education, some studies reported that connection to a supportive adult is not found to have a significant relationship with postsecondary education or high school outcomes (Kim et al., 2019; Okpych et al., 2017). However, one study reported that former foster youth with fewer connections to a supportive adult experience higher rates of negative education outcomes (Cushings, Samuels, & Kerman, 2014).

Substance abuse referral

Regarding the impact on employment, having a substance abuse referral on file is statistically significantly associated with outcomes (Naccarato, Brophy & Courtney, 2010), in aging out foster youth. However, it is not statistically significantly associated with employment (Kim et al., 2019). In regard to education, having a substance abuse referral on file, is associated with lower odds of high school completion, when compared to not having a substance abuse referral on file (Kim et al., 2019).

III. THE CURRENT STUDY

Study Aims and Hypothesis

The current study will examine indirect pathways to economic well-being indicators in a sample of transition aged youth (17-21 years old). Informed by intersectional theory, Aim I is to examine the relationship between intersectional identity, with employment and educational attainment. It is first hypothesized (Aim I:H1) that intersectional identity is significantly associated with odds of being full- or part-time employed at age 21. It is also (Aim I:H2) hypothesized that intersectional identity is significantly related to odds of having a high school diploma or general education equivalent (GED) by age 21. It is also (Aim I: H3) hypothesized that intersectional identity is significantly related to odds of having a postsecondary degree or vocational certificate or degree by age 21.

Informed by the CSDH framework, Aim II is to examine the role of intermediary determinants experienced by age 19 on economic well-being indicators at age 21. It is first hypothesized that intermediary determinants are significantly related to odds of being employed (Aim II:H1 and H4). It is also hypothesized (Aim II:H2 and H5) that intermediary determinants

are significantly related to odds of having a high school diploma or general education equivalent (GED) by age 21. It is also hypothesized (Aim II:H3 and H6) that intermediary determinants are significantly related to odds of having a postsecondary degree or vocational certificate or degree by age 21.

Informed by both the CSDH and IT, Aim III is to examine the extent to which intermediary determinants mediated the relationship between intersectional identity and odds of experiencing the aforementioned outcomes. It is hypothesized that youth will have significantly different odds of experiencing intermediary determinants, based on intersectional identity, which results in less favorable odds of being employed (Aim III: H1), having a secondary education credential (Aim III:H2), and having a postsecondary education credential (Aim III:H3). Congruent with IT, given the support for youth of color tending to fare worse in terms of adverse intermediary determinants and economic well-being outcomes, non-White males were chosen as the reference group for analysis.

Significance of the Study

The employment and educational attainment of youth who age out is an important issue in public health and social work. First, although adverse health outcomes are shown to result from long term economic hardship in the public health literature (Ferguson, Bovaird, & Mueller, 2007; Yoshikawa, Aber, & Beardslee, 2012), new research suggests that positive opportunities and experiences in adolescence can help create neural pathways and build new brain architecture that help youth heal from trauma and experience a successful adulthood (Branco, 2018). Second, in addition to impacting the lives of those who age out, the long-term economic hardship can be extremely costly in terms of requiring public health and social programs. For example, a per year cohort of 23,000 aged out youth, is estimated to yield over $6 billion in public costs, including

$1.7 billion in financial assistance programs, due to lack of adequate preparation for economic well-being (Courtney, Dworsky, & Peters, 2009). These amounts are calculated to represent a $5.8 billion investment return deficient based on $1.1 billion in annual spending on independent living services for youth aging out (Courtney et al., 2009).

Although several researchers have identified how sex and race/ethnicity relates to economic well-being indicators among youth who age out, to date, no studies can be located which examine the role of circumstances experienced through age 19 on future economic wellbeing indicators- based on intersectional identity. Additionally, most studies examine outcomes using small samples of youth who aged out prior to 2010. Data from the Luxembourg Income Study (LIS), which contains harmonized microdata from high- and middle-income countries, indicates that the employment prospects of young people were significantly impacted during the 2008 Great Recession (Sironi, 2018). The Great Recession is colloquially understood to have ended in the year 2010 (Sironi, 2018). Fortunately, recent research presents optimistic findings, with employment and education outcomes of aging out foster youth (17-19 years old) in the year 2017 being markedly improved when compared to aging out foster youth from the year 2013 (National Youth in Transition Database, 2017). However, no studies, to date, have examined the employment and education outcomes of former foster youth within the context of the current, improved (Sironi, 2018) national economic environment. It is important that a timelier understanding is pursued. This study aims to address these gaps in the literature. First, this study combined youths' sex and race/ethnicity to create categorical and binary measures of intersectional identity. Second, this study utilizes national administrative data to observe economic well-being indicators among youth who aged out in the year 2018.

The sophistication of research on these outcomes in former foster youth is growing, with increased studies combining federal, state, and county-level data to examine race and gender differences in foster care experiences and outcomes (Kim et al., 2019; Watt & Kim, 2019). However, to date, few studies have examined the mediating effects of foster care experiences (i.e., incarceration, utilization of independent living services, history of homelessness, placement setting, reason for entry to care, mental or behavioral diagnosis, connection to a supportive adult, and drug or alcohol diagnosis) on economic well-being indicators among aged out youth. Moreover, no studies have taken an intersectional approach to investigate mediation pathways through which economic well-being indicators manifest among aging out youth. This study investigated how aging out youths' social location (i.e., intersectional identity) indirectly effected their economic well-being prospects, through circumstances experienced while aging out.

IV. METHOD

Parent Studies

The secondary data used for this study comes from two surveys housed by the National Data Archive on Child Abuse and Neglect (NDACAN): The National Youth in Transition Database (NYTD), and the Adoption and Foster Care Analysis and Reporting System (AFACRS). Following similar studies (Kim et al, 2019; Watt & Kim, 2019), this study merged AFCARS, NYTDSS, and NYTDOS to observe a more comprehensive set of variables. Since all three datafiles are housed by NDACAN, youth have a common identifier across the databases.

The NYTD was developed by the Department of Health and Human Services to increase efforts for development and assessment of independent living services that help foster care youth in the transition to adulthood (Watt & Kim, 2019). The theoretical underpinnings of NYTD include: 1) a non-clinical variant of bioecological systems theory, and 2) a translational research

perspective which emphasizes the systematic movement of research findings into the development of innovative interventions and practices through the utilization of knowledge derived from interventions, practices and policies (Bronfenbrenner & Morris, 2006; Bronfenbrenner Center for Translational Research, n.d.). Under the 1999 Chaffee Foster Care Independence Program, 50 states, the District of Columbia, and Puerto Rico report NYTD Services and Outcomes data on a regular basis. States draw NYTD Services Survey (NYTDSS) data every six months regarding the federally funded Independent Living Services (ILS) provided to youth. In addition, states collect NYTD Outcomes Survey (NYTDOS) data using a survey with foster youth that examines various outcomes such as financial and education status (Chaffee National Youth in Transition Database, 2008).

Procedure

The NYTDSS and NYTDOS are conducted with a cohort of youth biannually from the age 17, using non-probability sampling at baseline (within 45 days of a youth turning age 17), with Wave II (within 45 days of a youth turning age 19) and Wave III (within 45 days of a youth turning age 21) follow-up methodologies varying across the states (National Data Archive on Child Abuse and Neglect, 2014). For the NYTDOF, the first cohort includes youth who turned 17 in federal fiscal year 2011, and new cohorts have been recruited every three years since then (Chaffee National Youth in Transition Database, 2008). Accordingly, the second cohort of NYTD Outcomes data participated in baseline survey at age 17 (FY2014) and two follow-up surveys at age 19 (2016) and at age 21 (2018). This study used data from only the second cohort, since their outcome data is as recent as 2018, which allowed me to conduct up-to-date analysis on determinants of employment and education outcomes. Moreover, this study utilized the

National Youth in Transition Database (NYTD) – Outcomes Survey, Cohort Age 17 in FY2014, Waves 1-3 (Complete), National Youth in Transition Database (NYTD) – Services File, FY2011-2018, to capture utilization of independent living services, homelessness, clinical disability diagnosis, connection to a supportive adult, substance abuse referral, employment status, and educational attainment.

AFCARS is a collation of survey data from the federally administrated Statewide Automated Child Welfare Information System- submitted to the U.S. Department of Health and Human Services twice a year by each state (National Data Archive on Child Abuse and Neglect, 2002). The data is collected to address policy development and management issues and to analyze foster care caseload characteristics and trends; it includes case specific data for each youth and family who has contact with state child protection agencies (National Data Archive on Child Abuse and Neglect, 2002). The AFCARS Foster Care file contains individual-level data on demographic and foster care characteristics, (e.g., race, sex, reason for removal, number of placements, placement setting, incarceration) as reported by state and title IV-E agencies in order to monitor foster care and adoption programs and better address program and policy issues (Watt & Kim, 2019). This study used the Adoption and Foster Care Analysis and Reporting System (AFCARS), Foster Care File 2014, to capture youths' group home or institutional placement, reason for entry to foster care, and placement history.

Participants

This study merged the AFCARS Foster Care datafile from fiscal years 2014 and 2016 with NYTDOF and NYTDSF from fiscal years 2014, 2016, and 2018, to create a purposive sample. NYTD data includes a unique identifier for each youth included at baseline, which can be also be found in AFCARS data. Accordingly, this study used three waves of NYTDOF data

(baseline wave 1 in 2014, wave 2 in 2016, and wave 3 in 2018), NYTDSF data (September 2014, March and September 2016, and March 2018), and 2014 AFCARS records. Following procedures utilized by similar studies (Kim et al, 2019; Watt & Kim, 2019), this study merged AFCARS records into NYTD records using IBM SPSS Version 25.0. As detailed in Figure 2, AFCARS records were excluded from if the youth was not in foster care at the end of FY2014 (N = 235,769), was over age 17 at the end of FY2014 or did not have a recorded sex or race/ethnicity (N = 399,756), or the entry was a duplicate (N = 24,935). As detailed in Figure 3, NYTD records were excluded if they were duplicate entries (N = 6551) or included blank or declined responses on any study variable in the NYTDSS or NYTDOS (N = 22,456).

The sample used for analysis in the study is based on youth participant records resulting from the aforementioned merging procedures. As detailed in Table 1, 16.8% of youth were Non-Hispanic White males, with NH White females representing the largest proportion of the population (22.8%). A majority of youth were referred to care due physical abuse or sexual abuse (67.5%), and the average number of foster care placement episodes experienced was 5.76 (SD = 6.06). As detailed in Table 2, a majority of youth had a secondary education credential (75.6%), and material support services were the most commonly received ILS (48.9%).

Ethical Considerations

The current study was deemed exempt by the FIU Office of Research Integrity due to the use of secondary data [Figure 4]. As a secondary data analysis, this study poses no risk of harm or direct benefits to the participants. Nevertheless, several precautions were taken. First, all data were de-identified to minimize the risk of unintended disclosure and information about study participants. Second, network password access was limited to the student investigator conducting this study and his dissertation committee. Fifth, all data will be destroyed within 12 months of

the completion of the study Third, all de-identified data was forwarded to FIU from the Principal Investigator using a password protected zip file and stored on an encrypted network. Fourth, the student investigator had no direct contact with the study participants.

Measures

Structural determinants

The structural determinants in my study were intersectional identities and derived from the AFCARS FY2014 datafile. The AFCARS FY2014 datafile contains information on sex and race/ethnicity, as provided by youth or the youth's parent (McCauley & Dineen, 2019). In AFCARS, sex is a nominal measure (i.e., 1= 'Male', 2 = 'Female', 9 = 'Unknown or Missing') and defined as the gender of the child. And race/ethnicity is derived from seven binary measures (i.e., 0 = no, 1= yes), indicating where a youth was:

1) Non-Hispanic American Indian or Alaska Native (i.e., having origins in any of the original peoples of North and South America including Central America, and who maintains tribal affiliation or community attachment- and not of Hispanic origin)

2) Non-Hispanic Asian (i.e., having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam- and not of Hispanic origin).

3) Non-Hispanic Black (i.e., having origins in any of the Black racial groups of Africa- and not of Hispanic origin).

4) Non-Hispanic Hawaiian or Pacific Islander (i.e., having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands- and not of Hispanic origin).

5) Non-Hispanic White (i.e., having origins in any of the original peoples of Europe, the Middle East, or North Africa- and not of Hispanic origin).

6) Hispanic any race (i.e., of Mexican, Puerto Rican, Cuban, Central or South American origin, or a person of other Spanish cultural origin).

7) Two or more races (i.e., but not of Hispanic origin)

To capture intersectional identity for this study, a total of 8 binary variables were created by combining the AFCARS data on sex and race/ethnicity (i.e., 1= Non-Hispanic White male, 2= Non-Hispanic White female, 3= Non-Hispanic Black male, 4= Non-Hispanic Black American female, 5= Hispanic male of any race, 5= Hispanic female of any race, 6= Other male, and 7= Other female).

Intermediary determinants

Intermediary determinants in this study were derived from FY2014 NYTDSF and NYTDOF wave 2, and FY2014 AFCARS, records. The NYTDSF contained one intermediary determinant (i.e., individual utilization of ILS). The NYTDOF contains four intermediary determinants: history of incarceration, history of homelessness, connection to supportive adult, and substance abuse referral. And the AFCARS file contains three intermediary determinants: mental health diagnosis, physical disability diagnosis, placement setting, reason for entry to foster care, and incarceration.

Cumulative rate of independent living services received

In the NYTDSS, independent living services are recorded across fifteen nominal variables (i.e., 0 = ‘Yes’, 1= ‘No’, 77 = ‘Blank’) indicating whether a youth received the specified service at least once since the last reporting period (i.e., within the past 2 years). A brief description of each ILS follows.

(1) *Special education*- a specialized service provided to youth with a disability, at no cost to parent.

(2) *Independent living needs assessment*- a mandatory account of goals, and/or needs, written or typed by a State agency representative.

(3) *Academic support*- technical assistance with completing a secondary education program

(4) *Postsecondary education support*- technical assistance with enrolling or completing a postsecondary education program.

(5) *Career preparation*- technical assistance with developing technical and soft skills for finding, applying for-, and retaining employment.

(6) *Employment programs or vocational training* - internship, apprenticeship, or vocational training)

(7) *Budget and financial management*- technical assistance with developing techniques for practicing fiscal responsibility.

(8) *Housing education and home*- technical assistance with obtaining housing and developing domestic independence.

(9) *Health education and risk prevention*- non-clinical assistance with developing strategies to maintain physical well-being.

(10) *Family support and healthy marriage*- assistance with developing healthy marital, interpersonal, paternal, and maternal relationships.

(11) *Mentoring*- assigned one-on-one meetings with a trained and screened adult.

(12) *Supervised independent living*- solitary habitation in a domicile paid for and arranged by the State, with oversight from an adult that is not provided on a 24-hour basis.

(14) *Room and board financial assistance*- payments made by the State for rental deposit, utilities, or expenses associated with being a new tenant.

(15) *Education financial assistance*- payments made by the State for completing an educational program.

(16) *Other financial assistance*- any further payments provided by the State to assist with living without supervision from the State.

Based on the literature review, a total of three continuous variables were created which measured cumulative rate of material support related-, employment support related-, and academic support related services received through age 19. Material support related services included supervised independent living, room and board financial assistance, education financial assistance, and other financial assistance, as defined in the NYTDSS. Employment related services included career preparation, and employment programs or vocational training, as defined in the NYTDSS. And academic support related services included special education-, academic support-, and postsecondary education support- services, as defined in the NYTDSS.

Since ILS were extracted from the NYTDSS, and NYTDSS data is submitted every 6 months, each youth can have more than one service record during a given observation period. Therefore, following similar research (Huang et. al., 2021) to capture each youth's service receipt over time, cumulative rate of ILS received in each of the three categories was calculated using a two-step process. First, the percentage of service records indicating receipt of at least one of the ILS was calculated. For example, if a youth had four records in the service data and indicated receipt of career preparation service in 2 records, his/her percentage of career preparation service receipt was 50% (2 divided by 4). Second, since each ILS variable included more than one type of service, I computed the average percentage of service receipts with each

category. For example, if 50% of a youth's records indicate receiving career preparation service and 100% indicating receiving employment programs and vocational training, the youth's average percentage of employment support receipt was computed to be 75% (the average of 50% and 100%).

Incarceration

In the NYTDOS, incarceration is defined as having been confined in a jail, prison, correctional facility, or juvenile or community detention facility in connection with allegedly committing a crime (misdemeanor or felony). Youth participants were asked "In the past two years, were you confined in a jail, prison, correctional facility, or juvenile or community detention facility, in connection with allegedly committing a crime?". In this study, the incarceration variable captured whether youth reported being incarcerated at any time up to age 19 (N = 1360) (29.2%), using NYTDOS data from using NYTDOS data from the year 2014 (when youth were age 17) and the year 2016 (when youth were age 19).

Group home or institutional placement

In AFCARS placement setting is divided into eight categories: pre-adoptive home foster home with a relative, foster home with a non-relative foster home, group home, supervised independent living, runaway, and trial home visit. A group home is defined as a licensed or approved home providing 24-hour care for children in a small group setting that generally has from seven to twelve children, and an institutional placement is defined as 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 group living experience (e.g., childcare institutions, residential treatment facilities, and maternity homes). In this study, a dichotomous variable was created to measure whether or not youth resided in a group home or institutional

placement prior to age 19 (N = 1460) (31.4%), using AFCARS data from the year 2014 (when youth were age 17).

Clinical disability diagnosis

In AFCARS, having a clinical disability diagnosis indicates that a qualified professional has clinically diagnosed the child as having at least one of the following disabilities: mental retardation, a visual or hearing impairment, a physical disability, a mental disorder, or other diagnosed condition. In this study, a dichotomous variable was created measure whether youth were diagnosed with a clinical disability at least once through age 19 (N = 178) (3.8%), using NYTDOS data from the year 2014 (when youth were age 17) and the year 2016 (when youth were age 19).

Homelessness

In the NYTDOS, homelessness is defined as having no regular or adequate place to live, and includes living in a car, on the street, or in a temporary or homeless shelter. Youth were asked "In the past two years, were you homeless at any time?". For 17-year-old youth, the response related to a youth's lifetime experiences. For 19-year-old youth the response related to the youth's experience in the past two years. In this study, a dichotomous variable was created to capture whether youth experienced homelessness at least one by age 19 (N = 1397) (30%), using NYTDOS data from the year 2014 (when youth were age 17) and the year 2016 (when youth were age 19).

Multiple placement settings

In AFCARS, the number of placement settings quantifies how many places the child has lived, including the current setting, during the current removal episode. In this study, a dichotomous variable (yes/no) indicating whether youth experienced a number of placement

episodes above the sample population mean (M = 5.76; SD = 6.06) using the aggregate sum of placement episodes reported in AFCARS in the year 2014 (when youth were age 17) and the year 2016 (when youth were age 19).

Connection to supportive adult

In the NYTDOS, connection to a supportive adult indicates whether youth knew an adult who he or she can easily go to for advice or guidance when there is a decision to make or a problem solve, or for companionship when celebrating personal achievements. Youth were asked "Currently is there at least one adult in your life, other than your caseworker, to whom you can go for advice or emotional support?". In this study, a dichotomous variable was created to measure whether a youth reported connection to a supportive adult at least once by age 19 (N = 4602) (98.8%) using NYTDOS data from the year 2014 (when youth were age 17) and the year 2016 (when youth were age 19).

Referred to care due to physical or sexual abuse

In AFCARS, reasons for referral to foster care are recorded by fifteen dichotomous variables (i.e., physical abuse, sexual abuse, neglect, parental alcohol abuse, parental drug abuse, youth drug abuse, youth alcohol abuse, youth disability, youth behavioral problem, death of a parent, incarceration of a parent, caretaker inability to cope, abandonment, voluntary relinquishment of paternal rights, and inadequate housing). In this study, a dichotomous variable was created to capture if a youth was referred to foster care due to physical or sexual abuse by using data from the year 2014, when youth were age 17 (N = 3144) (67.5%), using AFCARS data from the year 2014 (when youth were age 17).

Economic Well Being Outcomes

Employment

In the NYTDOS, employment is recorded by two dichotomous variables measuring whether a youth was employed for at least 35 hours per week in one or multiple jobs (i.e., full-time employed), or less than 35 hours per week in one or multiple jobs (i.e., part-time employed). Youth were asked "Currently are you full time employed?", and "Currently are you part-time employed?". In this study a dichotomous variable was created to measure whether a youth was full- or part-time employed at age 21 (N = 2765) (59.4%), using NYTDOS data from the year 2018.

Secondary and postsecondary education credential attainment

In the NYTDOS, educational attainment is recorded at the end of the fiscal year, and divided into six categories (i.e., high school or GED, vocational certificate, vocational license, associate degree, bachelor's degree, and graduate degree). Youth were asked "What is the highest educational degree or certification that you have received?". In this study two dichotomous variables were created to measure whether the highest education credential attained by age 21 was secondary educational (i.e., high school diploma or GED) (N = 3520) (75.6%), or postsecondary educational (i.e., vocational certificate, vocational license, associate degree, bachelor's degree, or graduate degree) (N = 349) (7.5%), using NYTDOS data from the year 2018.

Data Analysis

Aim I: Main effects of structural determinants on outcomes.

In order to examine the hypotheses supporting Aim I (H1-H3), three chi-square tests of independence were performed to ascertain: 1) whether the structural determinant (intersectional

identity) is statistically significantly associated with being full time or part time employed at age 21 (Aim I:H1), 2) whether the structural determinant (intersectional identity) is statistically significantly associated with highest education credential attained being a high school diploma or general education equivalent (GED) at age 21 (Aim I: H2), and 3) whether the structural determinant (intersectional identity) is statistically significantly associated with highest education credential being a postsecondary degree or vocational certificate, or degree, at age 21 (Aim I: H3). Cramer's V (V) effect sizes were also calculated to determine the strength of each model's findings of association. An effect size 0 indicates no relationship, a value between .00 and under .20 indicates a negligible association, a value between .20 and under .40 indicates a moderate association, a value of .40 and under .60 indicates a relatively strong association, a value of .60 and under .80 indicates a strong association, and a value of .80 and under 1.00 indicates a very strong association between variables in the model (Rea & Parker, 2016).

In order to examine the hypotheses supporting Aim I (H4-H6), three binary logistic regression analyses were performed to ascertain: 1) whether having the individual intersectional identities of Non-Hispanic White male resulted in more favorable odds of being employed at age 21, compared to other intersectional identities (Aim I:H4), 2) whether having the individual intersectional identity of Non-Hispanic White male resulted in higher increased odds of highest education credential attained being a high school diploma or general education equivalent (GED) at age 21 (Aim I:H5), 3) whether having the individual intersectional identity of Non-Hispanic White male resulted in higher increased odds of highest education credential being a postsecondary degree or vocational certificate, or degree, at age 21 (Aim I: H6). Hosmer-Lemeshow tests were also performed with each logistic regression model to examine overall goodness-of-fit (Cook et al., 2001). The alpha level of .05 was used for all statistical tests.

Variables with a p-value at or below .05 were considered to be of statistical significance, signifying that the observed relationship was statistically different from zero (i.e., rejection of the null hypothesis). Hosmer-Lemeshow test were conducted to assess whether the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict (Field, 2004).

Aim II: Main effects of intermediary determinants on outcomes.

In order to examine the hypotheses supporting Aim II (H1-H3), a total of forty-five chi-square tests of independence were conducted to ascertain: 1) whether the nominal scale intermediary determinants were statistically significantly associated with being employed by age 21 (Aim II:H1), 2) whether the nominal scale intermediary determinants were statistically significantly associated with highest education credential attained being a high school diploma or general education equivalent (GED) at age 21 (Aim II: H2), and 3) whether the nominal scale intermediary determinants were statistically significantly associated with highest education credential being a postsecondary degree or vocational certificate, or degree, at age 21 (Aim II: H3). Cramer's V (V) effect sizes were also calculated to determine the strength of each model's findings of association.

In order to examine the hypotheses supporting Aim II (H1-H3), three binary logistic regression analyses were performed to ascertain: 1) whether intermediary determinants were statistically significant predictors of odds of being employed by age 21 (Aim II:H4), 2) whether intermediary determinants were statistically significant predictors of odds highest education credential attained being a high school diploma or general education equivalent (GED) at age 21 (Aim II:H5), 3) whether intermediary determinants were statistically significant predictors of

odds of highest education credential attained being a post-secondary or vocational degree at age 21 (Aim II: H6).

Aim III: Mediating effects of intermediary determinants

In order to address Aim III, a total of three parallel multiple mediator analyses were performed to examine relative mediating effects of intermediary determinants on the relationship between intersectional identities and being full- or part-time employed by age 21 (Aim III:H1), having a high school diploma or GED as highest education credential attained by age 21 (Aim III:H2) , and having a post-secondary degree or vocational certificate or degree as highest education credential attained by age 21 (Aim III:H3). Estimation of mediation models containing a dummy coded multi-categorical independent variable with three or more levels yield a singular path b coefficient, but individual path c, path a, path c', and path ab coefficients for each dummy variable within the model (Hayes & Preacher, 2014, p. 456). Individual path a coefficient is estimated for each dummy-coded group variable to quantify differences in odds of experiencing the hypothesized mediator, relative to the reference group. Similarly, path b coefficients are estimated to determine whether each of the models' mediators are related to the given outcome, controlling the set of group variables. Both of these coefficients convey directional information about the mediation pathway through which the odds of outcomes are driven (Hayes & Preacher, 2014, p. 459). The product of these coefficients (i.e., path ab) provide an estimate for the difference in odds of the model's outcome, through the respective mediator, due to membership in the given group, when compared to the reference group. In other words, these, relative indirect effects convey the degree to which odds of an outcome are more or less favorable, when compared to the reference group, due to the joint mechanisms of path a and path b (Hayes & Preacher, 2014). Path ab estimates were calculated by hand to ensure accuracy using output from

the statistical models produced in R for the analyzed models only and were rounded up to one significant digit (e.g., .679 vs .6789) (Cole, 2015).

Of equal interest to many researchers conducting mediation analysis using dummy coded multi-categorical independent variable with three or more levels, are path c and path c' coefficients. Information derived from these paths are useful for studies with modifiable independent variables (Hayes & Preacher, 2014; Bauer & Scheim, 2019). Consistent with intersectional theory, the present study does not conceptualize intersectional identify as a modifiable condition (McCall, 2005). Moreover, these path coefficients were not interpreted beyond their contribution to the overall model, as emphasizing their significance has come under increased scrutiny within the methodological literature (Hayes & Preacher, 2014, p. 463; Hayes, 2018, p. 119-121). Therefore, in text, results are reported on the statistically significant mediation pathways (i.e., path ab, path a and path b, coefficients). All pathway coefficients were determined following the aforementioned methodology, and criterion for statistical significance. Detailed results are presented in tables.

Missing data

Missing data is expected to be of minimal concern due to data having been imputed directly into the database by interviewers, and because the NYTDOS, NYTDSS, and AFCARS include statistical weights for sex and race/ethnicity to account for missing responses (National Data Archive for Child Abuse and Neglect, 2019, p. 33). Wave 3 of the NYTDOS, and Waves 1 and 2 of the NYTDSS were analyzed for missing data to determine the final sample size used for analyses. In Wave 3 of the NYTDOS, 7.605 youth participated in the study and answered all survey questions. In the NYTDSS, 13,704 youth participated in the study and answered all survey questions at Waves 1 and 2. In total, 7.153 youth participated in Wave 3 of NYTDOS and

Waves 1-2 of NYTDSS. In fiscal year 2014, a total of 26,021 youths were 17 years old, and eligible for inclusion in the NYTD fiscal year 2014 cohort. A total of 19,508 records had no matching case in the NYTDOS, a total of 2,915 had no matching case in the NYTDSS, resulting in a total of 4,690 remaining cases. Of these cases, a total of 33 had an "unknown" race/ethnicity and were removed from analysis resulting in the final sample size of 4,657. Bivariate analyses were conducted to determine if the youth included in the final sample (N = 4,657) and the ones that had a race/ethnicity of "Unknown" (N = 33) were significantly different on any demographic variables at the baseline. Chi-square statistics were used for nominal variables, and t-test statistics were used for continuous variables.

Assumption testing

In cases where mediator and outcome variables are continuous, mediation analysis makes assumptions similar to a general linear regression model (i.e., normality, linearity, and multicollinearity, and autocorrelation) (Judd & Kenny, 2010). In cases where the study variables are nominal, it has become more widely recommended to follow the procedures for conducting a general logistic regression (Kenny, 2013, p. 2; MacKinnon et al., 2007, p. 10-12) (i.e., independence of observations, multicollinearity, linearity of independent variables to log odds, sample size > 500) (Schreiber-Gregory et al., 2018). After removing missing data continuous study variables were tested to verify that statistical assumptions of linear regression had been met, and nominal variables were tested to verify that the statistical assumptions of logistic regression had been met (MacKinnon, 2012).

First, univariate outliers on the three service variables were tested using boxplot and histogram. Boxplots are a standardized way of displaying the distribution of data based on a five-number summary of the population distribution of a given variable (i.e., minimum, first quartile

(Q1); median, third quartile (Q3); maximum. The top edge of the tinted box shows the value of the upper quartile (Q3) score; therefore, the distance between the top edge of the shaded box and the top horizontal line shows the range between which the top 25% of scores fall. And the slightly thicker horizontal line in the middle of the tinted boxes represent the mean values for each variable. The explore function in SPSS 25 was used to identify and graphically display any scores that fell below the population lowest 25% of scores or above the population's top 25% of scores (i.e., outliers). A histogram is a graphical representation of a frequency distribution-whereas observation values are plotted on a horizontal axis, and each bar shows how many times a value occurred within the dataset. As shown in Figure 5,

Figure *6* , and Figure 7, no outliers were found within the distribution of scores pertaining to cumulative rate of having received each service-type, and the cumulative rate of service receipt was less than 50% for the majority of youth in the academic support related and employment related service type categories. Similarly,

Figure 8, Figure 9, and Figure 10, showed that no significant outliers were present among the population distribution of cumulative rate of having received any service type. A relatively equal proportion of youth received material support related services 100% of the time they were aging out, through age 19, and 0% of the time that they were aging out, through age 19 (mean = 49%, SD = .347). In terms of academic support related services, a small proportion of youth received services 100% of the time, while the majority of youth did not receive academic support related services at all (mean = .352, SD = .282). In terms of employment related services, the majority of youth did not receive employment related services (mean = .264, SD = .267).

Second, univariate normality of the three service variables were tested using Shapiro-Wilk tests, skewness, and kurtosis. Shapiro-Wilk and Kolmogorov-Smirnov (K-S) tests compare

the scores in the sample to a normally distributed set of scores with the same mean and standard deviation (Field, 2009, p.144). If the test is non-significant ($p > .05$) then the distribution of the sample is not significantly different from a normal distribution (i.e., it is probably normal) (Field, 2004). If, however, the test is significant ($p < .05$) then the distribution in question is significantly different from a normal distribution (i.e., it is non-normal) (Field, 2009). Although both tests serve the same function, the Shapiro-Wilk test has more statistical power to detect differences from normality (Field, 2009, p. 148). As seen in Table 3, the Shaprio-Wilk test indicated that the cumulative rate of having received academic related service receipt through age 19 ($W = .928$, $df = 4657$, $p = .000$), rate of employment related service receipt ($W = .873$, $df = 4657$, $p = .000$), and rate of material support related services ($W = .913$, $df = 4657$, $p = .000$), were significantly non-normal, and positively skewed (i.e., in violation of the assumption of normality). Abnormality in the distribution of cumulative service receipt rates was expected due to the high variation in number of available services based on geographic region (Okpych, 2015). Skewness and kurtosis values were calculated to explore multivariate non-normality.

Skewness measures to what extent a distribution of values deviates from symmetry around the mean, kurtosis is a measure of the peakedness of the score distribution, and standard error is a measure of the stability of sampling error (Field, 2009). A positive skewness value indicates a greater number of smaller values, and a negative skewness value indicates a greater number of larger values (Field, 2009). A positive kurtosis value indicates a more peaked distribution, and a negative kurtosis value indicates a flatter distribution (Field, 2009). Standard error of skewness is a measure of the extent to which the skewness of a distribution of score is likely to vary across multiple sampling distributions (Field, 2009). Although these statistics are useful in helping assess a distribution of scores, skewness and kurtosis ratios provide a more

robust measure of statistical significance (Field, 2009). Critical skewness and kurtosis ratios were obtained by dividing the skewness and kurtosis statistics by their corresponding standard errors (Field, 2009, p.185). If the absolute value of a ratio is greater than 1.96, the distribution was considered to be in violation of the assumption of normality (Field, 2009, p.185).

As displayed in Table 4 the skewness, kurtosis for each cumulative rate of having received each service type through age 19; corresponding standard errors and critical values (ratios) were significant. Results showed that skewness ranged from -.693 (cumulative rate of having received academic support related services through age 19) and .808 (cumulative rate of having received employment related services through age 19). The values of kurtosis ranged between -1.28 (cumulative rate of having received material support related services through age 19), and -1.50 (cumulative rate of having received academic support related services through age 19). In terms of multivariate normality, the majority of service variables had significantly violated the assumption of normality, and only cumulative rate of having received material support related services through age 19 had a normal distribution (skewness of .048, SE = .036, critical value = 1.33). Given that the study aims to provide practice implications for targeted service provisioning, the data was not manipulated in order to bring scores closer to a normal distribution.

Next, the data was examined for the presence of multivariate outliers with Mahalanobis values. First Mahalanobis values were computed using the linear regression function in SPSS 25. Mahalanobis values measure each cases distance from the means of the continuous study (cumulative rate of having received services through age 19) variables (Field, 2009, p. 214). Next, the compute variable function was utilized to calculate the cumulative probability that Mahalanobis values were from a chi-square distribution (i.e., probability that a score was

significantly distanced from the mean). The Barnett and Lewis (1978) Test of Discordancy of a Single Outlier was applied to determine the presence of multivariate outliers. Whereas k equals the number of continuous predictor variables and n equals the sample size, results indicated that no multivariate outliers were present ($n = 4657$, $k = 3$; $p < .001$; critical value > 23.95), and the average distance from the mean was 2.99 for each variable [Table 5].

Fifth, all study variables were examined for the presence of multicollinearity. To test for multicollinearity between all independent variables and each dependent variable, the linear regression function in SPSS was used to calculate the variance inflation factor (VIF) values between the predictive variables and each dependent variable (Field, 2009). Variance inflation factor indicates whether a predictor has a strong linear relationship with the other predictors (Field, 2009, p. 224). Multicollinearity is considered to be problematic when a VIF value is greater than 10 and a tolerance value is less than .1 (O'Brien, 2007). Tests indicated that multicollinearity was of concern for 2 out of 19 variables in each model (i.e., Youth residing in a group home at age 17, Tolerance = .037, VIF = 26.69; Youth residing in an institution at age 17, Tolerance = .040, VIF = 24.74) [Table 6].

In other words, these variables do not individually add to the prediction of each outcome when all other indicators are simultaneously taken into account. One way to handle multicollinearity is to remove highly correlated variables from your statistical model or combine highly correlated variables in cases were doing so would conceptually align with your study aims (Leech et al, 2014, p. 116). To account for this multicollinearity, placement setting at age 17 was binarized into a dummy variable (0 = no, 1 = yes) which captured whether a youth resided in a group home or institutional facility placement at age 17.

Fifth, to test the assumption of the absence of autocorrelation (independence of errors), Durbin-Watson d test statistics were calculated for each dependent variable -to- continuous independent variable relationship. The Durbin-Watson tests examines whether serial correlations are present (i.e., whether adjacent residuals are significantly correlated) (Field, 2009, p. 220). A Durbin-Watson value less than 1 or greater than 3 is accepted as a conservative critical value, in determining whether autocorrelation is present (Field, 2009, p. 221). Results indicated that there was no autocorrelation in the data (i.e., no test statistic values less than 1 or greater than 3) [Table 7].

V. Results

Aim I: Main effects of structural determinants on outcomes

Association between intersectional identity and outcomes. The first hypothesis in Aim I (Aim I:H1), is supported as the results indicate that there is a significant ($\chi^2(7, 4657) = 24.218$, $p < .001$), but negligible ($V = .080$) association between intersectional identity and being full- or part-time employed by age 21 [Table 9]. The second hypothesis in Aim II (Aim I:H2) is not supported as the results indicate that there is a non-significant ($\chi^2(7, 4657) = 12.624$, $p = .082$) association between intersectional identity and highest education credential attained being a high school diploma or GED at age 21 [Table 10]. The third hypothesis in Aim I (Aim I:H3) is supported as the results indicate that there is a significant ($\chi^2(7, 4657) = 22.618$, $p = .002$) but negligible ($V = .070$) association between intersectional identity and highest education credential attained being a post-secondary or vocational degree at age 21 [Table 11].

Intersectional identities' relationship with odds of employment and educational attainment. The fourth hypothesis in Aim I (Aim I: H4) is partially supported, on the basis of effects between individual intersectional identity and being full- or part-time employed by age 21

[Table 12]. As compared with non-Hispanic White male, being a Non-Hispanic Black male is associated with decreased odds if being full- or part-time employed (b= -.368, s.e. =.154, p = .016), and being Other female is associated with decreased odds of being full- or part-time employed (b= -.406, s.e. =.201, p = .043). Results indicate that the model with intersectional identity as the independent variable fits statistically significantly better than the model without intersectional identity as the independent variable ($\chi^2(7, 4657) = 30.415$, $p < .001$).

The fifth hypothesis in Aim I (Aim I: H5) is not supported, on the basis of effects between individual intersectional identity and highest education credential attained being a high school diploma or general education equivalent (GED) at age 21 [Table 13].Results indicate that the logistic model with intersectional identity as the independent variable does not fit statistically significantly better than the model without intersectional identity as the independent variable ($\chi^2(7, 4657) = 12.623$, $p = .261$). The Hosmer-Lemeshow test ($p = 1.00$) does not provide evidence that the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict.

The sixth hypothesis in Aim I (Aim I: H6) is partially supported on the basis of effects between individual intersectional identity and highest education credential attained being post-secondary education degree or vocational certificate or degree at age 21 [
Table 14]. As compared to non-Hispanic White male, being a Hispanic any race female is associated with increased odds of highest education credential attained being a postsecondary degree, or vocational certificate, or degree, at age 21 (b= -.021, s.e. =.249, p = .005). Results indicate that the logistic model with intersectional identity as the independent variable fits statistically significantly better than the model without intersectional identity as the independent variable ($\chi^2(7, 4657) = 24.218$, $p = .001$). The Hosmer-Lemeshow test ($p = 1.00$) does not provide

evidence that the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict.

Aim II: Main effects of intermediary determinants on outcomes

Association between intermediary determinants and outcomes. The first hypothesis in Aim II (Aim II: H1) is partially supported on the basis of associations between intermediary determinants and being full- or part-time employed by age 21 [Table 15]. Results indicate that being incarcerated at least once by age 19 has a significant (χ^2 (1, 4657) = 48.811, p <.001) but weak (V = .102) association, being homeless at least once by age 19 has a significant (χ^2 (1, 4657) = 15.486, p < .001) but negligible (V = .058) association, being referred to a substance abuse treatment program at least once by age 19 has a significant (χ^2 (1, 4657) = 13.606, p < .001) but negligible (V = .054) association, having more than 5 placements has a significant (χ^2 (1, 4657) = 51.908, p < .001) but weak (V = .106) association, staying in a group home or institutional facility placement at age 17 has a significant (χ^2 (1, 4657) = 45.468, p < .001) but negligible (V = .099) association, and being diagnosed with a clinical disability has a significant (χ^2 (1, 4657) = 13.583, p <.001) but negligible (V = .054) association, with employment status by age 21.

The second hypothesis in Aim II (Aim II: H2) is partially supported on the basis of associations between intermediary determinants and the highest education credential attained being high school diploma or GED by age 21 [Table 16]. Results indicate that having been incarcerated at least once by age 19 has a significant (χ^2 (1, 4657) = 57.364, p <.001) but weak (V = .111) association, having been homelessness at least once by age 19 has a significant (χ^2 (1, 4657) = 68.180, p < .001) but weak (V = .121) association, being referred to a substance abuse

treatment program at least once by to age 19 has a significant (χ^2 (1,4657) = 18.355, p < .001) but negligible (V = .063) association, having more than 5 placement episodes has a significant (χ^2, (1,4657) = 40.895, p < .001) but negligible (V = .092) association, and staying in a group home or institutional facility placement at age 17 has a significant (χ^2 (1, 4657) = 19.817, p < .001) but negligible (V = .065) association with the highest education credential attained being high school diploma or GED by age 21.

The third hypothesis in Aim II (Aim II: H3) is partially supported on the basis of associations between intermediary determinants and the highest education credential attained being a post-secondary or vocational degree at age 21 [Table 17]. Results indicate that having been incarcerated at least once by age 19 has a significant (χ^2 (1, 4657) = 8.572, p = .003) but negligible (V = .043) association, being referred to a substance abuse treatment program at least once by to age 19 has a significant (χ^2 (1, 4657) = 4.505, p = .034) but negligible (V = .031) association, and staying in a group home or institutional facility placement at age 17 has a significant (χ^2 (1, 4657) = 15.121, p < .001) but negligible (V = .057) association, with the highest education credential attained being a post-secondary or vocational degree at age 21.

Intermediary determinants' relationship with odds of full- or part-time employment.

The fourth hypothesis in Aim II (Aim II:H4) is partially supported on the basis of effects between the intermediary determinants and being employed by age 21 [Table 18]. Cumulative rate of having received material support related services is positively related to the odds (b = .360, s.e. = .088, p < .001), having been incarcerated at least once by age 19 is a negatively related to the odds (b = -.260, s.e. = .072, p < .001), having been homeless at least once by age 19 is a negatively related to the odds (b = -.151, s.e. = .068, p = .027), having more than 5 placement episodes is negatively related to the odds (b = -.350, s.e. = .064, p < .001), and

diagnosed with a clinical disability is negatively related to the odds (b = -.502, s.e. = .157, p = .001), of being employed full- or part-time at age 21. The odds ratio (OR) results indicate that as cumulative rate of having received material support related services by age 19 increases by one unit, the odds of being employed by age 21 increases by .433 times (1.433-1= .433). Results indicate that the logistic model with intermediary determinants as the independent variables fits statistically significantly better than the model without intermediary determinants as the independent variables ($\chi^2(11, 4657) = 147.412$, $p < .001$). The Hosmer-Lemeshow test (p = .180) does not provide evidence that the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict.

Intermediary determinants' relationship with educational attainment. The fifth hypothesis in Aim II (Aim II: H5) is partially supported on the basis of effects between the intermediary determinants and the highest education credential of high school diploma or GED at age 21 [Table 19]. Cumulative rate of having received academic support related services by age 19 is positively related to the odds (b = .352, s.e. = .151, p = .020), reason for referral to foster care physical abuse, sexual abuse, being abandonment, or neglect is negatively related to the odds (b = -.187, s.e. = .077, p = .015), having been incarcerated at least once by age 19 is negatively related to the odds (b = -.351, s.e. = .080, p < .001), having been homeless at least once by age 19 is negatively related to the odds (b = -.466, s.e. = .075, p < .001), having more than 5 placement episodes is negatively related to the odds (b = -.318, s.e. = .072, p < .001), and staying in a group home or institutional facility placement at age 17 is negatively related to the odds (b = -.168, s.e. = .077, p < .001) of being employed by age 21. The odds ratio (OR) results indicate that as cumulative rate of having received academic support related services by age 19 increases by one unit, the odds of having attained a secondary education credential by age 21

increases by .422 times (1.422-1= .422). Results indicate that the logistic model with intermediary determinants as the independent variables fits statistically significantly better than the model without intermediary determinants as the independent variables ($\chi^2(11, 4657) = 147.412$, $p < .001$). The Hosmer-Lemeshow test ($p = .467$) does not provide evidence that the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict.

The sixth hypothesis in Aim II (Aim II: H6) is partially supported on the basis of effects between the intermediary determinants and the highest education credential of postsecondary degree or vocational certificate, or degree, at age 21 [Table 20]. Cumulative rate of having received material support related services by age 19 is a positive and significant predictor ($b = .689$, s.e. = .166, $p < .001$), and having resided in a group home at age 17 is a negative and significant predictor ($b = -380$, s.e. = .140, $p < .006$), of odds of highest education credential attained being postsecondary degree or vocational certificate, or degree, at age 21. The odds ratio (OR) results indicate that as cumulative rate of having received material support related services by age 19 increases by one unit, the odds of being employed by age 21 increases by .947 times (1.947-1= .947). Results indicate that the logistic model with intermediary determinants as the independent variables fits statistically significantly better than the model without intermediary determinants as the independent variables ($\chi^2(11, 4657) = 44.397$, $p < .001$). The Hosmer-Lemeshow test ($p = .556$) does not provide evidence that the predicted probabilities deviate from the observed probabilities in a way that the binomial distribution does not predict.

Aim III: Mediating Effects of Intermediary Determinants

Intersectional identity and odds of being employed by age 21

This section details the results of a parallel multiple mediator model estimating the relationship between youths' intersectional identity and their log odds of being full- or part-time employed at age 21. Prior to analysis, the comparison of model fits was conducted using the LMTEST v. 0.9-38 package for RStudio© v.1.3.959. That is, the full model including all intermediary determinants (M1.1; the full model) was compared with the restricted model limited to intermediary determinants found in the full model significantly related to the employment variable (M1.2; the restricted model). As shown

Table ***21***, the results from the full model (M1.1) showed that incarceration ($\beta = -.061$, $p < .05$), residing in a group home ($\beta = -.063$, $p < .05$), clinical disability ($\beta = -.047$, $p < .05$), multiple placement episodes ($\beta = -.076$, $p < .05$), and material support related services ($\beta = .059$, $p < .05$), are statistically significantly related to being full- or part-time employed by age 21. Model fit results indicated statistical evidence (χ^2 (14, 4657) = 12142, $p < .05$) to reject the null hypothesis that M1.1 was a significantly better fit than M1.2 [Table 22]. Since the comparison showed that the restricted model has better model fit, as determined at a 95% level of confidence, the restricted model (M1.2) was used for mediation analysis. In order to reduce Type-1 error, standardized indirect effects were computed for each of 1,000 bootstrapped samples, with significance determined at a 95% level of confidence, using RStudio© v.1.3.959.

Mediating effects of incarceration

As detailed in

Table *23*, results indicated that, compared to Non-Hispanic (NH) White males, having been incarcerated at least once had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and incarceration indicated that, compared to Non-Hispanic (NH) White males, NH White females ($\beta = -.138$, $p <$

.05), NH Black females (β = -.125, p < .05), Hispanic females of any race (β = -.219, p < .05), and Other females (β = -.148, p < .05) were less likely to have been incarcerated at least once by age 19. Moreover, the results of the relationship between incarceration and full- or part-time employment indicated that, holding intersectional identity constant, having been incarcerated at least once by age 19 was associated with decreased odds of being employed (β = -.089, p < .05), compared to having not been. That is, regardless of a youth's intersectional identity, youth who were incarcerated at least once by age 19, had less favorable odds of being employed, when compared to those who had not been.

Therefore, as compared to NH White males, NH White females (a*b= -.138*-.089=.012, p < .05), NH Black females (a*b= -.125*-.089=.009, p <.001), Hispanic females of any race (a*b= -.291*-.089=.023, p < .05), and Other females (a*b= -.138*-.089=.012, p < .05), had greater odds of being employed.

Mediating effects of residing in a group home or institutional placement

As detailed in

Table *23*, compared to NH White males, having resided in a group home or institutional placement setting had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and having resided in a group home or institutional placement indicated that, compared to NH White males, NH White females (β = -.131, p < .05), NH Black females (β = -.107, p < .05), Hispanic females of any race (β = -.150, p < .05), and Other females (β = -.176, p < .05) were less likely to have resided in a group home or institutional placement setting. Moreover, the results of the relationship between having resided in a group home or institutional placement incarceration and full- or part-time employment indicated that, holding intersectional identity constant, having resided in a group

home or institutional placement setting at age 17 was associated with decreased odds of being employed (β = -.076, p < .05). That is, regardless of a youth's intersectional identity, youth who resided in a group home or institutional placement setting at age 17 had less favorable odds of being employed, when compared to those who had not been. Therefore, as compared to NH White males, NH White females (a*b= -.138*-.068=.010, p < .05), NH Black females (a*b= -.125*-.068=.009, p < .05), Hispanic females of any race (a*b= -.219*-.068=.016, p < .05), and Other females (a*b= -.148*-.068=.00, p < .05), had greater odds of being employed.

Mediating effects of having a clinical disability diagnosis

As detailed in

Table *23*, compared to NH White males, having been diagnosed with a clinical disability had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and having been diagnosed with a clinical disability indicated that, compared to NH White males, NH Black females (β = -.033, p < .05), Hispanic females of any race (β = -.035, p < .05), and Other females (β = -.041, p < .05) were significantly less likely to have been diagnosed with a clinical disability. Moreover, the results of the relationship between having been diagnosed with a clinical disability and full- or part-time employment indicated that, holding intersectional identity constant, having been diagnosed with a clinical disability was associated with decreased odds of being employed (β = -.120, p < .05). That is, regardless of a youth's intersectional identity, youth who were diagnosed with a clinical disability by age 19, had less favorable odds of being employed, when compared to those who were not. Therefore, as compared to NH White males, NH Black females (a*b= -.033*-.119=.003, p <.05), Hispanic females of any race (a*b= -.035*-.119=.004, p = .001), and Other females (a*b= -.041*-.119=.005, p = .001), had greater odds of being employed.

Mediating effects of multiple placement episodes

As detailed in

Table *23*, compared to NH White males, having resided in a group home or institutional placement setting had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and multiple placement episodes indicated that, compared to NH White males, NH Black males ($\beta = .055$, $p < .05$), and NH Black females ($\beta = .061$, $p < .05$) were more likely to experience an above average (i.e., greater than 5) placements by age 19. Moreover, the results of the relationship between multiple placement episodes and full- or part-time employment indicated that, holding intersectional identity constant, experiencing more than 5 placement episodes through age 19 was associated with decreased odds of being employed ($\beta = -.081$, $p < .05$). That is, regardless of a youth's intersectional identity, youth who experienced more residential instability than their peers had less favorable odds of being employed. Therefore, as compared to NH White males, NH Black males (a*b= .055*-.081= -.004, $p < .05$), and NH Black females (a*b= .068*-.081= -.005, $p < .05$), had smaller odds of being employed.

Mediating effects of material support services

As detailed in

Table *23*, compared to NH White males, material support services had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and cumulative rate of material support services received indicated that, compared to NH White males, NH White females ($\beta = .049$, $p < .05$), Non-Hispanic Black females ($\beta = .088$, $p < .05$), Hispanic females of any race ($\beta = .068$, $p < .05$), and Other females ($\beta = .137$, $p < .05$) received more material support services. Moreover, the results of the

relationship between cumulative rate of material support services received and full- or part-time employment indicated that, holding intersectional identity constant, higher rates of having received material support services were associated with higher odds of being employed (β = .086, $p < .05$). That is, regardless of a youth's intersectional identity, receiving more material support related services increased the odds of a youth being employed by age 21. Therefore, as compared to NH White males, NH White females (a*b= .049*.086=.004, p = .001) NH Black females (a*b= .088*.086=.007, $p < .05$), Hispanic females of any race (a*b= .068*.086=.005, p< .05), and Other females (a*b= .137*.086=.011 p <.05), had greater odds of being employed.

Intersectional Identity and Odds of High School Diploma or GED by age 21

The following section details the results of a parallel multiple mediator model estimating the relationship between youths' intersectional identity and their log odds of having a high school diploma or GED be the highest education credential attained by age 21. Prior to analysis, a comparison of model fits was conducted using the LMTEST v. 0.9-38 package for RStudio© v.1.3.959. That is, the full model including all intermediary determinants (M2.1; the full model) was compared with the restricted model limited to intermediary determinants found in the full model significantly related to the secondary education variable (M2.2; the restricted model). As show in Table 24, the results from the full model (M2.1) showed that having been incarcerated at least once (β = -.066, $p < .05$), having resided in a group home or institutional placement (β = -.032, $p < .05$), homelessness (β = -.088, $p < .05$), multiple placement episodes (β = -.057, $p < .05$), reason for referral to foster care (β = -.034, $p < .05$), and cumulative rate of academic support related services (β = .060, $p < .05$), are statistically significantly related to attained be a high school diploma or GED. However, results indicated statistical evidence (χ^2 (11, 4657) = 119.76, $p < .05$) to reject the null hypothesis that M2.1 was a significantly better fit than M2.2 [

Table *25*]. Since the comparison showed that the restricted model has better model fit, as determined at a 95% level of confidence, the restricted model (M2.2) was used for mediation analysis. In order to reduce Type-1 error, standardized indirect effects were computed for each of 1,000 bootstrapped samples, with significance determined at a 95% level of confidence, using RStudio© v.1.3.959.

Mediating effects of incarceration

As detailed in Table 26, when compared to NH White males, incarceration had a mediating influence on odds of having the attained a high school diploma or GED but no other credential for some groups; not all. The results of the relationship between intersectional identity and incarceration indicated that, compared to Non-Hispanic (NH) White males, NH White females ($\beta = -.138$, $p < .05$), NH Black females ($\beta = -.101$, $p < .05$), Hispanic females of any race ($\beta = -.166$, $p < .05$), and Other female ($\beta = -.148$, $p < .05$) were significantly less likely to have been incarcerated at least once by age 19. Moreover, the results of the relationship between incarceration and possession of a high school diploma or GED, but not other credential, indicated that, holding intersectional identity constant, being incarcerated at least once by age 19 was associated with decreased odds of having attained the credential by age 21 ($\beta = -.072$, $p < .05$). That is, in terms of secondary education, regardless of a youth's intersectional identity, youth who had been incarcerated at least once by age 19, had less favorable odds of, at best, attaining their high school diploma or GED by age 21, when compared to those who had not been. Therefore, as compared to NH White males, NH White females ($a*b= -.138*-.077=.010$, $p < .05$), NH Black females ($a*b= -.101*-.077=.008$, $p < .05$), Hispanic females of any race ($a*b= -$

.166*-.072=.012, p < .05), and Other females (a*b= -.148*-.077=.011, p < .05), had greater odds of having a high school diploma or GED.

Mediating effects of residing in a group home or institutional placement

As detailed in Table 26, compared to NH White males, having resided in a group home or institutional placement setting had a mediating influence on odds of having a high school diploma or GED but no other credential by age 21 for some groups; not all. The results of the relationship between intersectional identity and having resided in a group home or institutional placement indicated that, compared to NH White males, NH White females (β = -.131, p < .05), NH Black females (β = -.084, p < .05), Hispanic females of any race (β = -.112, p < .05), Other males (β = -.035, p < .05), and Other females (β = -.176, p < .05) were less likely to have resided in a group home or institutional placement setting. Moreover, the results of the relationship between group home or institutional placement and possession of a high school diploma or GED but no other credential indicated that, holding intersectional identity constant, youth who resided in a group home or institutional placement setting had decreased odds of attaining the credential by age 21 (β = -.037, p < .05), compared to those who had not. That is, in terms of secondary education, regardless of a youth's intersectional identity, youth who resided in a group home or institutional placement setting at age 17, had less favorable odds of, at best, attaining their high school diploma or GED by age 21, when compared to those who had not. Therefore, as compared to NH White males, White females (a*b= -.118*-.037=.004, p < .05), NH Black females (a*b= -.084*-.037=.002, p < .05), Hispanic females of any race (a*b= -.112*-.037=.004, p < .05), and Other females (a*b= -.176*-.037=.006, p < .05), had greater odds of having a high school diploma or GED.

Mediating effects of homelessness

As detailed in Table 26, compared to NH White males, history of homelessness had a mediating influence on odds of having a high school diploma or GED but no other credential by age 21 for some groups; not all. The results of the relationship between intersectional identity and homelessness indicated that, compared to NH White males, NH White females ($\beta = .049$, $p < .05$), NH Black males ($\beta = .055$, $p < .05$), and NH Black females ($\beta = .061$, $p < .05$), were more likely to have experienced homeless at least once by age 19. Moreover, the results of the relationship between homelessness and possession of a high school diploma or GED, but not other credential, indicated that, holding intersectional identity constant, history of homelessness was associated with decreased odds of attaining the credential by age 21 ($\beta = -.089$ $p < .05$). That is, in terms of secondary education, regardless of a youth's intersectional identity, youth who experienced homeless at least once by age 19 had more favorable odds of, at least, attaining a high school diploma or GED by age 21. Therefore, as compared to NH White males, NH White females (a*b= .049*-.089= -.004, $p < .05$), NH Black males (a*b= .055*-.089= -.005, $p < .05$), and NH Black females (a*b= .061*-.089= .005, $p < .05$), had smaller odds of having a high school diploma or GED.

Mediating effects of multiple placement episodes

As detailed in Table 26, compared to NH White males, having resided in a group home or institutional placement setting had a mediating influence on odds of having a high school diploma or GED but no other credential by age 21 for some groups; not all. The results of the relationship between intersectional identity and multiple placement episodes indicated that, compared to NH White males, Other males ($\beta = .131$, $p < .05$), and Other females ($\beta = .103$, $p < .05$) were more likely to experience an above average (i.e., greater than 5) placements while aging out. Moreover, the results of the relationship between multiple placement episodes and

high school or GED credential attainment indicated that, holding intersectional identity constant, experiencing more than 5 placement episodes through age 19 was associated with decreased odds of attaining the credential by age 21(β = -.064 $p < .05$). That is, regardless of a youth's intersectional identity, youth who experienced more residential instability than their peers had less favorable odds of, at best, attaining a high school diploma or GED by age 21. Therefore, as compared to NH White males, Other males (a*b= .131*-.064= -.008, $p < .05$), and Other females (a*b= .103* -.064=-.006, $p < .05$) had smaller odds of having a high school diploma or GED.

Mediating effects of being referred to care due to physical or sexual abuse

As detailed in Table 26, compared to NH White males, reason for referral to foster care had a mediating influence on odds of having a high school diploma or GED but no other credential by age 21 for some groups; not all. The results of the relationship between intersectional identity and reason for referral indicated that, compared to NH White males, NH White females (β = .080, $p < .05$), NH Black females (β = .104, $p < .05$), NH Black males (β =.052, $p < .05$), Hispanic females (β = .152, $p < .05$), and Other females (β = .090, $p < .05$), were more likely to have been referred to care due to physical or sexual abuse. Moreover, the results of the relationship between reason for referral and high school or GED credential attainment indicated that, holding intersectional identity constant, being referred to foster care due to sexual was associated with decreased odds of attaining the credential by age 21 (β = -.034, $p < .05$). That is, in terms of secondary education, regardless of a youth's intersectional identity, youth who were referred to care due to physical or sexual abuse had less favorable odds of, at best, attaining a high school diploma or GED by age 21. Therefore, as compared to NH White males, NH White females (a*b= .080*-.034= -.003, $p < .05$), NH Black females (a*b= .104*-.034= -

.003, $p < .05$), and Hispanic females (a*b= .152*-.034= -.005, $p < .05$), had smaller odds of having a high school diploma or GED.

Mediating effects of academic support services

As detailed in Table 26, compared to NH White males, academic support services had a mediating influence on odds of having a high school diploma or GED but no other credential by age 21 for some groups; not all. The results of the relationship between intersectional identity and cumulative rate of academic support services received by age 19 indicated that, compared to NH White males, NH Black females ($\beta = -.039$, $p < .05$) received significantly less services, and Other females received significantly more services ($\beta = .039$, $p < .05$). Moreover, results indicated that, holding intersectional identity constant, higher rates of academic support services received by age 19 were associated with ($\beta = .048$, $p < .05$) increased odds of having attained a high school diploma or GED. That is, regardless of a youth's intersectional identity, receiving more academic support related services increased the odds of a youth, at most, possessing a high school diploma or GED by age 21. Therefore, as compared to NH White males, NH Black females (a*b= -.039*.048= -.002, $p < .05$) had less favorable odds, and Other females had more favorable odds (a*b= .039*.048= .002, $p < .05$), of having a high school diploma or GED.

Intersectional Identity and Log Odds of Postsecondary or Vocational Attainment

The following section details the results of a parallel multiple mediator model estimating the relationship between a youths' intersectional identity and their log odds of having, at best, attained a postsecondary education degree or vocational degree or certificate by age 21. Prior to analysis, a comparison of model fits was conducted using the LMTEST v. 0.9-38 package for RStudio© v.1.3.959. That is, the full model including all intermediary determinants (M3.1; the full model) was compared with the restricted model limited to intermediary determinants

found in the full model significantly related to the postsecondary education variable (M3.2; the restricted model). As shown in

Table *27*, the results from the full model (M3.1) showed that having resided in a group home or institutional placement ($\beta = -.022$, $p < .05$), and cumulative rate of material support related services ($\beta = .045$, $p < .05$), were statistically significantly related to attained be a high school diploma or GED. However, results indicated statistical evidence (χ^2 (26, 4657) = 21980, $p < .05$) to reject the null hypothesis that M2.1 was a significantly better fit than M2.2 [Table 28]. Since the comparison showed that the restricted model has better model fit, as determined at a 95% level of confidence, the restricted model (M3.2) was used for mediation analysis. In order to reduce Type-1 error, standardized indirect effects were computed for each of 1,000 bootstrapped samples, with significance determined at a 95% level of confidence, using RStudio© v.1.3.959.

Mediating effects of residing in a group home or institutional placement

As detailed in Table 29, compared to NH White males, having resided in a group home or institutional placement setting had a mediating influence on odds of being employed for some groups, but not all. The results of the relationship between intersectional identity and having resided in a group home or institutional placement indicated that, compared to NH White males, NH White females ($\beta = -.131$, $p < .05$), NH Black females ($\beta = -.107$, $p < .05$), Hispanic females of any race ($\beta = -.150$, $p < .05$), and Other females ($\beta = -.176$, $p < .05$) were less likely to have resided in a group home or institutional placement setting. Moreover, results indicated that, holding intersectional identity constant, having resided in a group home or institutional placement setting at age 17 was associated with decreased odds of having a postsecondary education degree or vocational degree or certificate at age 21 ($\beta = -.024$, $p < .05$). That is, regardless of a youth's intersectional identity, youth who resided in a group home or institutional

placement setting at age 17, had less favorable odds of having attained a postsecondary or vocational credential by age 21, compared to those who had not. Therefore, as compared to NH White males, NH White females (a*b= -.131*-.024=.003, $p < .05$), NH Black females (a*b= -.107*-.024=.002, $p < .05$), Hispanic females of any race (a*b= -.150*-.024=.004, $p < .05$), and Other females (a*b= -.176*-.024=.004, $p < .05$) had more favorable odds of having a postsecondary education degree or vocational degree or certificate by age 21.

Mediating effects of material support services

As detailed in Table 29, compared to NH White males, material support services had a mediating influence on odds of the highest education credential attained being a postsecondary or vocational credential for some groups, but not all. The results of the relationship between intersectional identity and cumulative rate of material support services received by age 19 indicated that, compared to NH White males, NH White females ($\beta = .049$, $p < .05$), Non-Hispanic Black females ($\beta = .088$, $p < .05$), Hispanic males of any race ($\beta = .049$, $p < .05$), Hispanic females of any race ($\beta = .067$, $p < .05$), and Other females ($\beta = .137$, $p < .05$) received more material support services. Moreover, results indicated that, holding intersectional identity constant, higher rates of material support services received by age 19 were associated with increased odds of having the highest education credential attained be a postsecondary or vocational credential by age 21 ($\beta = .044$, $p < .05$). That is, regardless of a youth's intersectional identity, receiving more material services increased the odds of a youth having attained a postsecondary or vocational credential by age 21. Therefore, as compared to NH White males, NH White females (a*b= .049*.044=.002, $p < .05$), Hispanic males of any race (a*b=

.049*.044=.002, p < .05), Hispanic females of any race (a*b= .068*.044=.003, p < .05), and Other females (a*b= .137*.044= .006, p < .05) had more favorable odds of having a postsecondary education degree or vocational degree or certificate by age 21.

VI. DISCUSSION

Aim I: Intersectional identities' relationship with economic well-being outcomes

Guided by the intersectional theory, the first part of this study (Aim I) conceptualized intersectional identity (INID) as a structural determinant related to economic well-being outcomes in aged-out former foster youth at age 21. There was support for this notion, as results indicated significant disparities in employment and attainment of a postsecondary or vocational credential based on INID. In regard to employment, INID was significantly related to odds of being employed, and odds of having attained a postsecondary or vocational credential, by age 21. More specifically, at the bivariate level, a smaller proportion of Non-Hispanic Black males (53.9%), and Other males and females (53% and 52.9%, respectively) (i.e., Non-Hispanic American Indian or Alaskan, Hawaiian or Pacific Islander, or More Than One Race) were employed, when compared to Non-Hispanic White males [Table 9]. However, logistic regression results indicated that these differences were only significant, in the case of Non-Hispanic Black females and Other females [Table 12]. One reason that may explain the bivariate findings is that members of these intersectional groups have markedly different experiences in the labor market, when compared to White males (Browne & Misra, 2003). As such, the disparities in employment among aged-out foster youth may be reflective of labor market discrimination experienced among Non-Hispanic Black males and females from race/ethnic groups included in the category of Other (Pedulla, 2018). For example, in an experimentally designed study comparing White and Black applicants' experiences in the labor market, Pedulla (2018) found that although there

was no meaningful difference in the callback rates between White and Black applicants (5.9 percent vs. 5.9 percent, $|z| = 0.05$, $p = 0.96$), White applicants with seamless employment histories received a callback rate nearly twice that of Black applicants with similar work histories (10.4 percent vs. 5.8 percent, $|z| = 3.12$, $p < 0.01$). Moreover, in a supplemental logistic regression model that included a three-way interaction between having a history of long-term unemployment, being a Black applicant, and being a female applicant, the author found a negative and statistically significant ($p < 0.05$) interaction, when compared to being a White applicant. It is important to note that the author did not include a metric for discrimination. Furthermore, the author concluded that a convergence of stereotypes pertaining to being Black, or a female, or unemployed was the primary driver of variation in callbacks. Nonetheless, these findings support the notion that individuals' labor market prospects may vary significantly due to discriminatory practices that favor those who identify as White and male.

In regard to education outcomes, INID was not related to high-school diploma or GED attainment [Table 10]. However, bivariate [Table 11], and regression [
Table 14] results indicated that smaller proportion of Hispanic females of any race (6.4%) had attained a postsecondary or vocational credential by age 21, when compared to Non-Hispanic White males (7.7%). These findings contradict the work of Courtney et al. (2007), who found females transitioning from foster care status to have increased odds of completing a two-year college program by age 21, when compared to their male counterparts. The fact that a significantly smaller proportion of Hispanic females of any race completed college also appears to contradict, broader societal shifts in college completion among Hispanic females in the general population (Fry & Lopez 2012). One possible explanation for this is that these studies

observed outcomes that took place prior to the year 2010 (when the 2008 Great Recession ended), and measured identity using one-dimensional demographic characteristics.

Aim II: Intermediary determinants' relationship with economic well-being

This section discusses the results from the logistic regression models of economic well-being outcomes on intermediary determinants. Intermediary determinants are discussed relative to their relationship with economic well-being outcomes. Guided by the CSDH, the second part of this study (Aim II) conceptualized circumstances experienced while aging out of foster care (between ages 17 and 19) as intermediary determinants related to odds of economic well-being outcomes at age 21 in former foster youth. It was hypothesized that material circumstances, behavioral factors, and psychosocial factors would affect youths' likelihood to be employed, have only attained a high school credential, or have only attained a postsecondary education credential.

Material Circumstances

Given prior studies (Courtney et al., 2011; Lee & Ballew, 2018; Rosenberg & Kim, 2018; Kim et al., 2019), it was not surprising that material circumstances (i.e., incarceration, homelessness, group home or institutional placement, history of multiple placements) were significantly related to economic well-being outcomes. First, the negative and significant relationship between incarceration and employment found in this study is consistent with previous studies. For example, using data from the Midwest Study, Courtney et al (2011) found aged out foster youth with arrest histories had decreased odds of being employed at age 19, compared to those who did not. And national administrative data, indicates that adjudicated youth are less likely to report full time employment than those who were not (Lee & Ballew, 2018). Second, the negative and significant relationship between homelessness and employment

found in this study is consistent with previous studies. In a recent study using NYTD to examine the associations between homelessness and post-secondary education and employment status (Rosenberg & Kim, 2018) found that youth who experienced homelessness were less likely to have post-secondary education or full-time employment at age 21, even when controlling for individual and foster care characteristics. My study found a negative and significant relationship between homelessness and high school diploma or GED, but not find significant relationship between homelessness and post-secondary degree attainment but. Third, the negative and significant relationship between residing in a group home at age 17 and odds of being employed found in this study aligns with findings from prior research using NYTD data. In a logistic regression analysis that included many of the same covariates as the present study, Kim et al. (2019) found that youth in the similar FY2011 NYTD cohort (n = 4206) who resided in a group home at age 21 were less likely to be employed, when compared to those who were resided in a non-relative foster home. Similarly, Macomber et al. (2008) found that having resided in a group home at age 21 remains negatively related to odds of being employed well into adulthood (at age 24). Fourth, the negative and significant relationship between number of placements and each of employment and high school diploma/GED also align with previous studies. For example, Kim et al. (2019) found that the number of placements experienced prior to age 21 was negatively associated with odds of high school completion and postsecondary education. However, it is important to note that the education variables in the present study qualitatively differed from those in the Kim et al. (2019) study. More specifically, whereas Kim and colleagues observed whether a youth had at least completed high school or obtained a GED at age 21, the present study observed whether high school or GED was the highest credential attained at age 21.

One possible explanation for the prevalence of these associations across studies is that each of these circumstances may disrupt foster youths' ability to develop and maintain personal relationships that help facilitate employment, such as consistent access to supportive adults and social networks that provide information about employment opportunities. Social capital theory suggests that the resources necessary for upward economic mobility are embedded in the relationships that individuals have with supportive others (Dubos, 2017). Youth who experienced incarceration, homelessness, placement disruptions are likely to experience disruptions in their relationship with caregivers, supportive adults, and their network in general, and therefore, experience disruption in building their social capital, which can compromise their employment and education outcomes.

Independent Living Services

Consistent with similar research (Kim et al., 2019; Lee & Ballew, 2019) the current study concatenated the 13 categories of independent living services (ILS) included in the NYTD data into three types: academic related, employment related, and material support related. There is evidence to support the notion that, overall, ILS are beneficial to youth who age out. For example, in a binary logistic regression analysis of youth from the FY2011 NYTD cohort (n = 4,206), Kim et al. (2019) found that youth who reported ILS utilization at least once while aging out (versus not reporting any at all) were significantly more likely to complete high-school education (OR = 1.25, p = .03), have postsecondary education (OR = 1.20, p = .03), or work full-time (OR = 1.24, p = .04). Overall, our study findings were consistent with this previous study. For example, in terms of academic support related ILS, only attainment of a high school diploma or GED was related. Kim et al (2019) reported a significant relationship with postsecondary education enrollment and employment, but not with high-school diploma or GED attainment.

Superficially, these results would appear to contradict our finding that academic support services were only related with high-school diploma or GED attainment. However, a more plausible explanation for this discrepancy is that, unlike the present study, ILS receipt was measured cross sectionally using a binary measure (i.e., “yes, received” or “no, did not receive”). Furthermore, postsecondary education enrollment is not the same as postsecondary educational attainment. Nonetheless, with very few exceptions, youth have to attain a high school diploma or GED prior to enrolling in college. Moreover, collectively, the results from Kim et al (2019) and our study suggest that the receipt of academic support related ILS recorded in the NYTDSS may be more effective at helping youth attain a high school diploma or GED than at helping youth attain a college or vocational credential.

One reason that may help explain this is that academic performance and attainment deficits are routinely reported among older youth in foster care (Shin, 2003), and circumstances experienced between age 19 and 21 may exacerbate those deficits (Pecora, 2012). In a multiple regression analysis of older youth in foster care (mean age = 17.5 years old) from the city of Chicago, Shin (2003) found that over 30% were reading below the 6th-grade level, 31% had reading skills between the 6th- and 8th-grade level, and 18% were reading at the 9th and 11th-grade level. Moreover, youth who age out are frequently and consistently reported as suffering from poorer high school or equivalent attainment, when compared to their peers (Pecora, 2012). Given these results, the possibility that the academic support related ILS recorded in the NYTDSS may only be enough to help youth meet the minimum requirements for possession of a high school diploma or GED by age 21 should not be ruled out. Nor should the fact that circumstances such as multiple placement episodes, and mental health related symptoms, are frequently associated with academic performance (Pecora, 2012), and may buffer any effect that

academic related ILSs have on educational attainment. Collectively, these previous studies and our findings provide evidence that the potential utility of services which aim to help youth excel academically should not be undervalued.

In terms of material support related ILS, employment and postsecondary education credential attainment were significantly related. Superficially, these findings appear incongruent with previous studies. For example, Kim et al (2019) reported that financial assistance for pursuing an educational degree was significantly related to postsecondary education credential enrollment, but not high school completion. At the same time, Lee and Ballew (2018) reported that financial assistance for the pursuit of an educational credential and other financial assistance are associated with higher odds of being socially connected, as indicated by being employed or enrolled in a postsecondary educational school. However, as with the majority of previous research in this area, both of these studies observed receipt of ILS as binary measure. Moreover, dissimilar from these previous studies, we concatenated a more comprehensive set of ILSs into our material support related ILS variable, which did not exclude important services such as housing.

The significant, and positive, effects of providing material support related services to youth who age out have been regularly and widely reported within the literature (Courtney et al., 2010; Pecora, 2004). Therefore, the finding of significance across all three models was expected. One reason that might explain why higher rates of material support related ILS were not associated with related to increased odds of being employed at age 21 or having attained a postsecondary educational degree is that individuals in the general population tend to benefit from an extended period of inter-dependence, beyond age 18. For example, only 5% to 10% of 18-year-olds in the U.S. live on their own (Brannen, 2002), and about half of 18 to 24-year-old

young people still live in their parent's home (Jekielek & Brown, 2005). Due to this lengthened transitional period between adolescence and adulthood, most young adults typically have the continued physical, economic, emotional, and social support of their families (Goldscheider & Goldscheider, 1999). Indeed, the period between ages 18 and age 25 in modern-day society has been colloquially referred to as emerging adulthood, characterized as a developmental period in which young people from the general population explore adult roles without the full impact of adult responsibilities (Arnett, 2005). Since youth who age out do so within the context of these broader, societal trends, it follows logic that material support relates to their ability to achieve the milestones of being employed and attaining an educational credential. Collectively, these previous studies and our findings evidence how critical it is to ensure youth who age out receive as many material support related services as possible while transitioning from care.

In terms of employment related ILS, we found that none of the outcomes analyzed were related. This finding is consistent with both of the aforementioned studies (Kim et al., 2019; Lee & Baller, 2018). Moreover, given the results of smaller studies, it was not surprising (Edelstein & Lowenstein, 2014). A scoping review conducted by researchers at the Urban Institute found that many of the programs providing these services lack partnership with local employers, fail to emphasize the interpersonal skills required for participation in the labor market, or do not provide youth with individualized employment services (Edelstein & Lowenstein, 2014). Moreover, the majority of the programs reviewed reported no positive effect on employment outcomes and did not provide services beyond 6-18 months due to issues such as funding constraints (Edelstein & Lowenstein, 2014). A possible explanation for our finding is that longer-term evaluations of employment related services tend to report more positive and significant effects than shorter-term evaluations (Card, 2017).

Psychosocial and Behavioral Factors

In terms of behavioral and psychosocial factors, several findings were unexpected. First, it was surprising to find that connection to supportive adult was not related to odds of any of the economic well-being outcomes. One explanation for this is the fact that connection to a supportive adult was a common (90.9%) circumstance among youth within the sample. When data is skewed in this way, regression results are more likely to indicate the absence of a significant relationship (Rosner, 2011). Phenomenological evidence suggests that the employment and education outcomes of both youth who are aging out and youth who have recently aged out, are enhanced by the presence of supportive adults. In regard to aging out youth, these connections have included supportive relationships with child welfare workers (Collins, et al., 2010), and friends of their birth families (Munson et. al., 2010). For example, in a retrospective cohort study of recently aged out, 21-year-old, youth (n =616) Courtney et al. (2018) concluded that adult support played a significant role in their transition from care (e.g., 28% reported having to get food/money from friends or relatives). Because these connections may include continued relationships with child welfare workers (Collins et al., 2010), and friends of their family (Munson et. al., 2010), it is important that the present study's finding of non-significance is interpreted with caution.

Second, given prior research, it was surprising to find that having a clinical disability diagnosis was unrelated to either of the education outcomes. In a smaller but statistically robust study, Geenen & Powers (2006) found that having a clinical disability while in foster care had a multiplicatively negative affect on youths' education outcomes, compared to only being in foster care or only having a disability diagnosis. Moreover, in a logistic regression analysis of education outcomes in aged out youth from the FY2011 NYTD cohort, Kim et al. (2019) found

that having a disability diagnosis was negatively associated with both postsecondary education enrollment and course completion. However, the incongruence is likely a reflection of the fact that, unlike Kim et al (2019) our study measured the attainment of a postsecondary education or vocational credential, rather than college enrollment.

Finally, results indicated that having at least one substance abuse referral by age 19 was unrelated to any of the outcomes analyzed. This finding is consistent with previous research (Kim et al., 2019; Braciszewski & Stout, 2012). However, these results should be interpreted with caution for at least one reason; findings regarding the relationship between substance abuse and employment and education outcomes tend to vary based on how substance abuse is operationalized within a given analysis. In past studies, when substance abuse was operationalized as the abuse of any substance, it has not predicted future employment outcomes (Bell et al., 2002; Drebing et. al., 2002). However, when operationalized as the utilization of a specific substance, the utilization of some types of substance is negatively related to postsecondary educational outcomes (Aertgeerts & Buntix, 2002). For example, in a study of college freshmen (N = 3518), Aertgeerts & Buntix (2002) utilized the Composite International Diagnostic Interview (CIDI), a standardized diagnostic interview for assessing mental disorders according to the criteria of the DSM-IV to examine the relationship between alcohol-abuse, alcohol-dependence, and academic performance. Although researchers found no relationship between alcohol abuse and performance ($p > .05$), students who did not met criteria for alcohol dependence were significantly ($p < .05$) less likely to fail in their first year, when compared to those who did (50% vs 62.5%, respectively) (Aertgeerts & Buntix, 2002). Collectively, these previous studies evidence the importance of exercising caution when interpreting results pertaining to the presence of a substance abuse referral.

Aim III: Indirect effects of intersectional identity on economic well-being outcomes

This section discusses the results of parallel multiple mediation models (M1.2, M2.2, M3.2) which investigated whether youths' odds of experiencing each economic well-being outcome were more or less favorable, due to material circumstances, psychosocial circumstances, and behavioral circumstances- when compared to NH White males. The first part of this study examined the relationship between intersectional identities and economic well-being outcomes via multiple chi-square analyses. The second part of this study examined the relationship between intermediary determinants (i.e., material, psychosocial, and behavioral circumstances) and economic well-being outcomes via multiple logistic regressions. The relationship between circumstances while aging out and outcomes upon aging out are well documented within the child welfare literature. As are sex- and race-based disparities in employment and education outcomes. Yet, little is known about how different circumstances while aging out may buffer the impact that youths' social position has on their future employment and education outcomes.

Guided by both the CSDH and IT, the third part of this study investigated whether material circumstances, psychosocial circumstances, and behavioral circumstances, mediated the relationship between intersectional identity and economic well-being outcomes. Relative indirect (mediating) effects were examined for this portion of the study, which are a measure of whether mediating effects are present for a given group, relative to a comparison group (Hayes & Preacher, 2014). Congruent with IT, NH White males were the reference group for all relative indirect effect observations.

Intersectional identity as a precursor of economic well-being prospects

Although intersectional identity was directly related to odds of employment and postsecondary education, results suggest that the sex dimension of intersectionality was more influential than race/ethnicity in multiple contexts. For example, results indicated that incarceration (defined as having been confined in a jail, prison, correctional facility, or juvenile or community detention facility, in connection with allegedly committing a crime at least once), is a risk factor for less favorable employment and secondary education outcomes at age 21 among all youth in the study sample. However, as evidenced by the indirect effects in M1.2 and M2.2, incarceration only produced significant mediating effects among the female-containing intersectional identity groups; not male ones. In other words, in terms of employment and within the context of incarceration, females achieved better economic well-being outcomes regardless of their race/ethnicity. The apparent tendency for the sex dimension of intersectionality to be more influential than the race/ethnicity dimension was also present within the context of having resided in a group home or institution in M1.2 (estimating odds of employment), M2.2 (estimating odds of secondary education attainment), and M3.2 (estimating odds of postsecondary education attainment). As well as within the context of material support related services in M3.2 (estimating odds of postsecondary education attainment). In each of these contexts, females achieved better economic well-being outcomes than their male counterparts, when compared to White males. While these results are important and revealing, it is important to note that they reflect a comparison to White males only, and do not indicate that race/ethnicity is an irrelevant dimension of intersectional identity, within the context of economic well-being outcomes.

Nonetheless, the results of Aim III are consistent with intersectional theory's matrix of domination framework (Collins, 2000, 227-228). The matrix of domination framework infers

that intersecting systems of oppression, organized at the macro-level, have produced phenomenon, such as the Eurocentric patriarchy- which privileges individuals who are societally recognized as 'White'- particularly males [

Figure *II*] (Collins, 2000). In this way, White individuals (White males in particular) are less societally disadvantaged than their counterparts. Some results of Aim III provide tangential support for this notion, as youth of color tended to be disadvantaged in important and dissimilar ways, when compared to their White counterparts. For example, residential instability, as defined more than five placement episodes between age 17 and 19, was a risk factor for less favorable employment and secondary education outcomes, among all youth in the study sample. But the indirect effects from M1.2 evidence that experiencing this circumstance was especially disadvantageous to Black American youth, in terms of employment outcomes. Similarly, the residential instability was related to secondary education attainment among all youth in the study sample. But the indirect effect results from M2.2 evidence that this was especially true in the case of youth identified as American Indian or Alaska Native, Asian American, Hawaiian or other Pacific Islander, or Two or more races.

The matrix of domination also posits that, due to historically embedded racism and sexism, females and people of color occupy more disadvantaged social locations than their male and White peers. As a result, Black American females are at a heightened risk of being disadvantaged, when compared to their White male and White-female counterparts- in that order (Blige & Collins, 2020). On one hand, there appears to be evidence in support of this notion in Aim III. For example, even though having been referred to foster care due to physical or sexual abuse was universally related to secondary education credential attainment, indirect effects in M2.2 evidence that, females of color were more significantly disadvantaged as a result, when compared to their counterparts, and relative to the comparison group (White males).

On the other hand, it is important to note that intersectional theory posits that intersectional identity is a multiplicity of intersecting social locations; it is made up of multiple one-dimensional demographic features that operate simultaneously (Murphy et al., 2009). For example, an individual may occupy both a female and a Non-White social location, which renders them vulnerable to sexism and racism. But they may also be a member of a member of an indigenous tribe, which would render them vulnerable to neo-colonialism. As such, intersectional identities that lie outside the White spectrum may experience protective factors at significantly different rates, and, thus, end up with starkly different outcomes. In this way, a

beneficial service or intervention may simultaneously contribute to both privilege and disparity, when the service or intervention is disproportionately distributed. Results from Aim III provide evidence to support this notion. For example, in terms of failure to attain a secondary education credential, academic support services were a protective factor for all youth in the study sample. Higher rates of receiving these services were associated with greater chances of attaining a secondary education credential. At the same time, the rate at which youth had received services contributed to both privilege and disparity. Whereas Other females were in a privileged position (i.e., received more, and were thus more likely to have attained the credential), NH Black females received less services, and were thus less likely to have attained a secondary credential- in contrast to White males.

Material circumstances as a mediating pathway

There was support for Aim III as material circumstances mediated the relationship between youths' intersectional identity, their odds of being employed, and odds of having attained a postsecondary or vocational credential. With few exceptions, as opposed to their White male counterparts, females who age out tend to fare better in terms of employment and secondary education attainment, due to their decreased odds of being incarcerated or residing in group home or institutional placement, having multiple placement settings, and higher rates of material support services. More specifically, Black males had higher odds of experiencing more than 5 placement episodes by age 19, and therefore had less favorable odds of being employed at age 21. On the other hand, Hispanic males of any race received higher rates of material support services, and therefore had more favorable odds of having a postsecondary credential. No prior studies, to date, have examined intersectional differences in the mediating effects of these circumstances among youth who age out. Still, my findings appear to be partially consistent with

similar research pertaining to the interrelation between sex, race/ethnicity, material circumstances, and economic well-being outcomes.

My results are consistent with previous studies on showing material circumstances as a mediating pathway explaining the economic well-being differences between different sex groups. For example, in terms of incarceration, youth from the Midwest Study who experienced incarceration were less likely to be employed after aging out, when compared to those who had not (Hook & Courtney, 2011). And aged out males are reported as more likely to be incarcerated than their female counterparts (McMahon & Fields, 2015). The results of these studies are consistent with my finding that, due to decreased odds of incarceration, females had more favorable odds of being employed. On the other hand, my finding was that incarceration did not mediate the employment prospects of males from different ethnic backgrounds is inconsistent with previous studies. For example, previous studies have found that NH Black males who age out are less likely to be employed (Stewart et al., 2014; Courtney et al., 2010), and are more likely to experience incarceration (Raimon et al., 2015) when compared to other groups. Moreover, at the national level NH Black males (age 18-24) in the general population are six times more likely to be incarcerated (3,148 per 100,000 vs. 463 per 100,000) when compared to their NH White male counterparts (National Institute of Child Health and Human Development, 2017). And, according to recent estimates, NH Black males in the general population (ages 16 through 24) have an aggregate unemployment rate equal to the sum of their White and Asian counterparts combined (United States Bureau of Labor Statistics, 2018). The quantitative literature on sex-based disparities in incarceration among aged out youth is thin. However, one possible reason that may explain this discrepancy is that, due to experiences of racism and discrimination, NH Black males may have higher levels of mistrust for traditional American

systems, such as education, training, work and business settings (Terrell & Terrell, 1981). It is plausible that this, or other, qualitative factors may impact the role of incarceration on employment.

Based on previous studies, it was surprising to find that rate of material support services was not a mediating pathway explaining the economic well-being differences between different males from different ethnic backgrounds. Multiple studies have reported that NH Black males receive the lowest range of ILS and occupy the least likely racial group to receive any type of ILS while aging out (Courtney et al., 2010; Okypch, 2015; Roy & Jones, 2004). One possible explanation for this discrepancy is that additional support services, which fall outside the scope of those reported in the NTYDSS, are made available to youth who have a dependent child (Center for the Study of Social Policy, 2011), and females who age out are more likely to have a dependent child (Shpiegel & Casgardi, 2015). These services provide recipients with access to resources, such as evidence-based programs for coping with the negative effects of trauma (Center for the Study of Social Policy, 2011), which, in turn, affect their employment and educational attainment prospects (Stot, 2013).

It is important to note that female parents were reported to only have slightly higher odds of receiving at least one service compared with male parents ($\chi^2 = 8.82$, $p < .01$), and types of services received were largely similar among all groups in the aforementioned study (Shpiegel & Casgardi, 2015). However, unlike the present study, receipt of services was measured with a binary indicator ("Yes" or "No"). Moreover, prior research demonstrates support for the fact that females who age out tend to receive higher rates of specific types of material support services. In a descriptive study of youth from the FY2011 NYTD cohort, Okpych (2015) reports that females were more likely to receive at least one type of service prior to age 21, and more likely to receive

a wider array of services by age 21, than their male counterparts. More specifically, although gender differences were generally between 3 to 4 percent, the widest gap was receipt of supervised independent living services (females= 14.4% vs. males = 9.9%) and financial assistance for education (females = 21.9% vs. males = 14.7%). It is important to note that, unlike my study, Okpych (2015) measured receipt of services using a binary indicator ("yes" or "no"). Still, both of these specific service types were included in my "material support related services" variable.

Another important finding to report was that having experienced multiple placements was a risk factor for failure to be employed, and failure to have a secondary education credential among youth in the general study population; but it only mediated these outcomes among Other and NH Black youth, respectively. In other words, experiencing more than 5 placements by age 19 facilitated differences in odds of completing a secondary education program among youth from different ethnic backgrounds. However, since multiple placements negatively related to these outcomes, and previous studies indicate that non-White youth tend to experience higher frequencies of placement episodes (Roberts, 2002; Stewart et al., 2014), my finding was expected.

Psychosocial circumstances as a mediating pathway

It was surprising to find that entry to care due to physical or sexual abuse, and clinical health diagnosis, have mediating effects; but connection to a supportive adult did not. First, this finding was unexpected given the results of Aim II, which indicated that each of these intermediary determinants were related to any of the economic well-being outcomes analyzed. Possible reasons for the lack of association between these circumstances and each outcome are discussed in an earlier section. However, it is important to acknowledge that engagement with an

emotionally supportive adult may buffer the effect of poor performance on standardized testing and educational attainment, through instilling a sense of academic resilience within youth who age out (Neal, 2017). And there is further evidence to support the effect of long-term connection to a supportive adult (Hook & Courtney, 2011), and long-term exposure to trauma (Salazar et al., 2012) on economic well-being outcomes among aged out youth. Therefore, the impact of connection to a supportive adult on economic well-being outcomes may need to be captured qualitatively, versus through a survey or questionnaire. This should be further explored in future studies.

Behavioral circumstances as mediating pathway

Based on the literature review, clinical disability diagnosis and substance abuse referral were hypothesized to produce mediating effects across each of models. Surprisingly, clinical disability diagnosis produced mediating effects for NH Black females, Hispanic females of any race, and Other females. But these effects were limited to the full- or part-time employment model. One possible explanation for this finding is that females of color are consistently reported as having developed more pronounced strategies for coping with daily stressors than their male, and White counterparts (Bey et al., 2019). It is possible that these coping mechanisms reduce the odds of having a clinical disability diagnosis among non-White females, which, in turn increases their odds of being employed. However, it is important to note that youth may experience different barriers to employment and educational attainment, based on the type of disability they are coping with. Recent research indicates that youth in foster care are at an increased risk of experiencing mental health challenges (e.g., ADD/ADHD, anxiety, depression; Turney & Wildeman, 2016), and post-traumatic stress disorder (Salazar, et al., 2013), when compared to their peers in the general population. At the same time, having an emotional disability is

consistently found to reduce the odds of being employed or obtaining a secondary education credential among youth in the in the general population (Wagner et. al., 2005), and among youth who age out (Mares & Kroner, 2011).

Limitations and Future Research

Much was learned from this study. But despite the significant contribution of the present study, some limitations and suggestions for future research should be noted. First, due to limitations of the NYTD data, this study did not include several other important factors that impact the relationship between intermediary determinants and economic well-being outcomes, such as incarceration rate (Barnert, et. al., 2017), and type of substance abuse treatment received (Waldron & Turner, 2008). For example, in a multi-wave analysis of individuals from the National Longitudinal Study of Adolescent to Adult Health (N = 14,344), Barnert et al (2017) evidence that experiencing incarceration for a duration between 1 month and 1 year, at any time between 7th and 12th grade, was related to subsequent adult (ages 24 to 34 years) general health ($P < .01$), depressive symptoms ($P < .001$), and suicidal thoughts ($P < .05$). Therefore, it is important that direct causation is not inferred from the results of my study. Future research seeking to infer a causal pathway should examine the moderating effects of continuous exposure to circumstances between age 19 and 21 found to affect the odds of employment at age 21.

Second, the NYTDOS is limited to outcomes observed between within 45 days after having turned 19 and 45 days after having turned 21- but does not include measures for intermediary determinants experienced during this period. It is possible that youths' material circumstances between the age of 19 and 21 may impact their postsecondary or vocational credential attainment. For example, in a study using NYTD FY2011 data, Rosenberg & Kim (2018) found that youth who'd experienced homelessness between age 19 and 21, had

significantly decreased odds of being employed and significantly decreased odds of completing a postsecondary or vocational program by age 21 (Rosenberg & Kim, 2018). Therefore, future research should test for the mediating effects of intermediary determinants experienced between the age of 19 and 21.

Third, the data used for the present study did not account for health conditions found to disproportionately impact youth of color. For example, Courtney et al. (2018) found that Black American former foster youth were more likely than White youth to have been told that they had high blood pressure or hypertension, and hypertension has been evidenced to worsen neurocognitive functioning (Lande & Kupferman, 2019). Future research could be improved by including measures that account for the presence of these health conditions, as they pertain to economic well-being outcomes.

Fourth, due to limitations of the NDCAN data, this study did not include other important axes of intersectional identity, such as sexual orientation. There is evidence that youth who identify along the lesbian, gay, bisexual transexual, questioning, or two-spirit (LGBTQ2S) spectrum represent a significant proportion of those in foster care (Dworsky, 2013). For example, 11 percent of youth in the Midwest Study identified as lesbian, gay, or bisexual (Dworsky, 2013). These youth tend to report substantively different experiences while in care (Salazar et. al., 2018), and more likely to be incarcerated than their heterosexual peers (Wilson et. al., 2017). Future surveys should include these, and other, axes of intersectional identity in their data collection.

Fifth, this study was limited to youth who participated in all three waves of the FY2014 NYTD cohort study (i.e., were consistently in foster care between the age of 18 and 21). However, it is not uncommon for youth to voluntarily leave foster care during this time (Florida

Department of Children and Families, 2018) after feeling as if their specific, individual, needs are not being met by interventions provided while aging out (Courtney & Dworsky, 2000). Therefore, inferences drawn from quantitative analysis that excludes youth who may have left care after age 18 but returned prior to age 21, or those who may have stayed in care beyond age 18 but permanently left prior to age 21, should be interpreted with caution. Future research should adopt a fixed, sequential, mixed methods approach to better capture the complexity of youths' employment and educational attainment trajectories while aging out. In this way, qualitative observations can be used to help better understand the mechanisms underlying any quantitative findings.

Sixth, it is important to point out that the cultural values of youth who are categorized as "Black", "Hispanic", "White", or any other positivist race/ethnic categorization, vary greatly and in very important ways. Although categorizations such as these are useful for statistical hypothesis testing, the overgeneralization of related findings can perpetuate notions of biological inferiority, as historically exemplified by the eugenics movement (Zuberi, 2001). Moreover, socioeconomic differences may produce starkly different behavioral patterns among individuals from the same race/ethnic group (Cohen, 2009). Future research should be sure not to imply causation based on intersectional identity (Holland, 2008) and, instead, continue to identify circumstances that can influenced by policy change.

VII. CONCLUSIONS

Despite the limitations of this study, this study extends the literature though providing an updated account of circumstances (i.e., material, psychosocial, and behavioral) most prevalent in the lives of aging out youth, which could be manipulated by changes to social work practice and policy. Findings indicate that experiencing homelessness, multiple placement episodes, and

having a substance abuse referral on file, were each associated with each of the outcomes analyzed. As compared to previous studies that examine receipt of ILS cross-sectionally, this study provided a novel addition to the literature by investigating the longitudinal effects of ILS (i.e., cumulative rate of ILS received through age19). Findings indicate that material circumstances (e.g., residential stability, rental assistance, food benefits, and transportation vouchers) are crucial to the employment and educational prospects of all youth who age out. This study also answers the National Association of Social Workers' (NASW) call for quantitative research that investigates health disparities through an intersectional perspective (NASW, 2001). Findings indicate that intersectional identity is related to employment and postsecondary education outcomes.

Although disparity and disproportionality are not new to social work, this study adds to the growing pool of studies evidencing the interrelation between intersectional identity, social context, and health inequalities (Murphy et. al., 2009). Circumstances known to be associated with employment and educational attainment status among youth who age out were measured simultaneously, for testing mediation in three separate statistical models. Findings indicate that intersectional identities position youth to have higher or lower odds of being employed or attaining an educational credential by age 21, through material circumstances, and psychosocial circumstances, but not behavioral circumstances. Still, material support services are protective factors for being employed or attaining a postsecondary credential. Intersectional identities were related to odds of experiences while aging out, which were, themselves, related to odds of employment and educational attainment at age 21. These associations were significant in bivariate analysis in Aim I, regression analysis of Aim II, and mediation analysis of Aim III. Furthermore, this study evidences the fact that females, youth of color, and female youth of color

are not marginalized by their material and psychosocial circumstances while aging out and experience more favorable economic well-being outcomes as a result. Compared to non-Hispanic White males, several intersectional groups had greater odds of experiencing circumstances that impact their economic well-being prospects. At the same time, indirect effects were mostly observed among female-containing intersectional identities, due to lower odds of experiencing deleterious circumstances while aging out. Taken together, these findings highlight the importance of changing the mechanisms that contribute to disparities in economic well-being among youth who age out. In addition, collectively, these findings emphasize the importance of leaning away from one-size-fits-all social work and policy practice.

Implications for Social Work Practice

Social workers can use the findings of this study to help enhance their understanding of the multiple and diverse realities of youth who age out of foster care. As evidenced, youth begin the process of aging out with significantly disparate employment and educational prospects based on their embodied social location (i.e., intersectional identity). Moreover, youth tend to have significantly different odds of experiencing circumstances that are associated with the aforementioned milestones, while still in foster care. As social workers engage with the increasingly diverse population of youth in foster care, it is important that the social realities of those they serve are accounted for in their decision making. Compliance with organizational procedures may, at times, and to some degree, require social workers to surrender their assertions of what is best for those they serve (Lohmann, 2001). However, social worker can take the findings of this study to advocate for a more intersectional stance in their field of practice. The understanding of-, and sensitivity to-, the multidimensional nature of youths' personhood, are core components of the National Association of Social Workers' (2017) code of ethics.

Second, social work practitioners can also take what was found in this study to promote collaborative efforts which simultaneously target the multiple social systems that youth who age out tend to be involved with. This, multisystemic, approach to micro social work practice requires that social work practitioners intervene at all levels of youths' foster care system involvement. As evidenced, economic well-being outcomes are significantly altered by material circumstances, such as incarceration. And involvement with the criminal justice system is not uncommon among those who age out. Fortunately, States have increasingly embraced wrap-around service provisioning, wherein multiple related services are provided through a single contract. The rationale behind this practice model is that, in many cases, assistance with reaching developmental goals (e.g., help with educational degree completion) requires help in other areas, such as therapy to address the effects of trauma and housing assistance. For example, in partnership with Florida's Division of Children and Family Services, Citrus Health of Miami-Dade County provides individualized clinical treatment and housing to victims of sexual exploitation through their Citrus Helping Adolescents Negatively impacted by Commercial Exploitation (CHANCE) program (Citrus Health, 2021). Adopting a similar approach to helping youth who have experienced incarceration, may reduce recidivism (Huang et. al., 2012), and help youth avoid being jailed for misdemeanors (Conger & Ross, 2006). One example of how this can be accomplished is through a Crossover Youth Practice Model (CYPM) (Haight et. al., 2016). Rather than assuming that changing individual-level factors will improve the outcomes of youth in foster care, the CYPM posits that interagency collaboration and behavioral changes at the service-provider level are needed to best serve youth who are dually involved in the criminal justice system and foster care system.

Third, social work practitioners can take what was learned through this study to help inform their best practices, when developing transition plans with older foster youth (age > 16). The Fostering Connections to Success and Increasing Adoptions Act of 2008 (Fostering Connections), mandates that social workers develop a personalized transition plan (PTP) in partnership with the aging out youth, no later than 90 days prior to his or her 18th birthday (CWLA, 2016). According to the Child Welfare League of America, each PTP should address the contexts such as housing, health insurance, educational attainment, attaining employment, engaging with workforce supports and opportunities for mentorship, as well as supportive services (CWLA, 2005). The key thing to note here is that social workers are supposed to make concerted efforts to elicit feedback from the youth they service, prior to signing off on said youth's PTP. However, it is plausible that, in some cases, it is difficult to elicit feedback from youth who may, for example, regularly fail to show up at scheduled meetings. The information derived from this study can help guide social workers as they navigate the PTP development process, in the absence of youth input. For example, academic and material support services were significant mediators for secondary and postsecondary educational attainment, respectively. Therefore, social workers should ensure that these services are included in the PTP of youth who seek to achieve these milestones by the time they age out.

Fourth, social workers can take what was learned here and develop more empirically informed best practice models. For example, since residential instability adversely impacts the employment and secondary education outcomes of youth who age out, social workers should strive to help them establish permanence as they transition from care. Unlike residential instability, permanence can provide youth with a sense of belonging, through access to lasting connections and enduring relationships, which improves their overall well-being (i.e., physical,

emotional, social, cognitive and spiritual) (Annie E. Casey Foundation, 2007; Frey & Greenblatt, 2005). Moreover, as evidenced in M1.1 and M3.1, it is essential that social workers strive to connect job-, and postsecondary education-seeking youth with as many materials supports as possible and help connect youth without a secondary education credential to as many academic support services as possible.

Implications for Social Work Policy

Policy practitioners can take what was learned in this study to promote more rigorous evaluation and oversight of programs which provide employment related ILS, and group home or institutional housing. Since the 1996 Personal Responsibility and Work Opportunity Act amended the Social Security Act, the utilization of private-actors to conduct public-services has significantly increased. However, legal scholars have long criticized the corporate structure, and lack of accountability, among private non-profit and for-profit providers (Coupet, 2007; Caputo, 2014). Although material support-, and academic support-related ILS were evidenced to have positive effects on outcomes in one capacity or another, employment-related services were not. This suggests that employment-related services are, overall, ineffective at accomplishing that which they are paid to accomplish- a sentiment that has echoed throughout the literature for nearly two decades (Edelstein & Lowenstein, 2014; Henig, 2009). Similarly, in each of the fifty-one models analyzed for this study having resided in a congregate care (i.e., group home or institutional) placement was significantly and negatively related to the outcome being analyzed. It is imperative that federal regulations are set in place to hold ILS service- and congregate care providers accountable in meaningful ways. This study provides policy practitioners with a framework for utilizing administrative data to identify who is benefiting from what, and within

which contexts. Further development in this area is critical to making significant advances, as a lack of progress may lend to further inequalities and disparities.

Policy practitioners can also take what was learned to advocate for legislature that requires States provide benefits to youth through age 21, with fewer restrictions. All States offer some form of support to youth beyond age 18 (i.e., extended foster care; EFC) or educational training vouchers (ETV) to help youth attain postsecondary educational credential [FIGURE]. But the majority of States also have a myriad of eligibility restrictions in place [FIGURE], which may prevent youth from receiving that mediate more favorable economic well-being outcomes. For example, recent research has indicated that many aged out foster youths drop out of college because of the need to work and afford everyday living expenses associated with adulthood such as electricity, groceries, and rent (Courtney, et al., 2011; Narccarato et al., 2010; Pecora et al., 2006; Wade & Dixon, 2006). However, in some states, disenrolling from college can result in disqualification for ETV, EFC, and/or CFCIP services [Figure 2]. In response to the conflict between requirements for supportive services and the need to survive, some young people make the decision to opt out of staying in care altogether (Courtney et. al., 2007). If a young person is ineligible for extended foster care, or voluntarily chooses not to remain in foster care beyond age 18 they are at risk of being cut off from receiving information from social workers who possess the most up-to-date information about available supports and effective strategies for navigating eligibility requirements. Moreover, unforeseen circumstances, such as the COVID-19 pandemic, may prohibit youth from meeting eligibility requirements- leaving them in an even more precarious position. It is crucial that policy is set in place to ensure young people transitioning from care are guaranteed assistance with their material circumstances through age 21.

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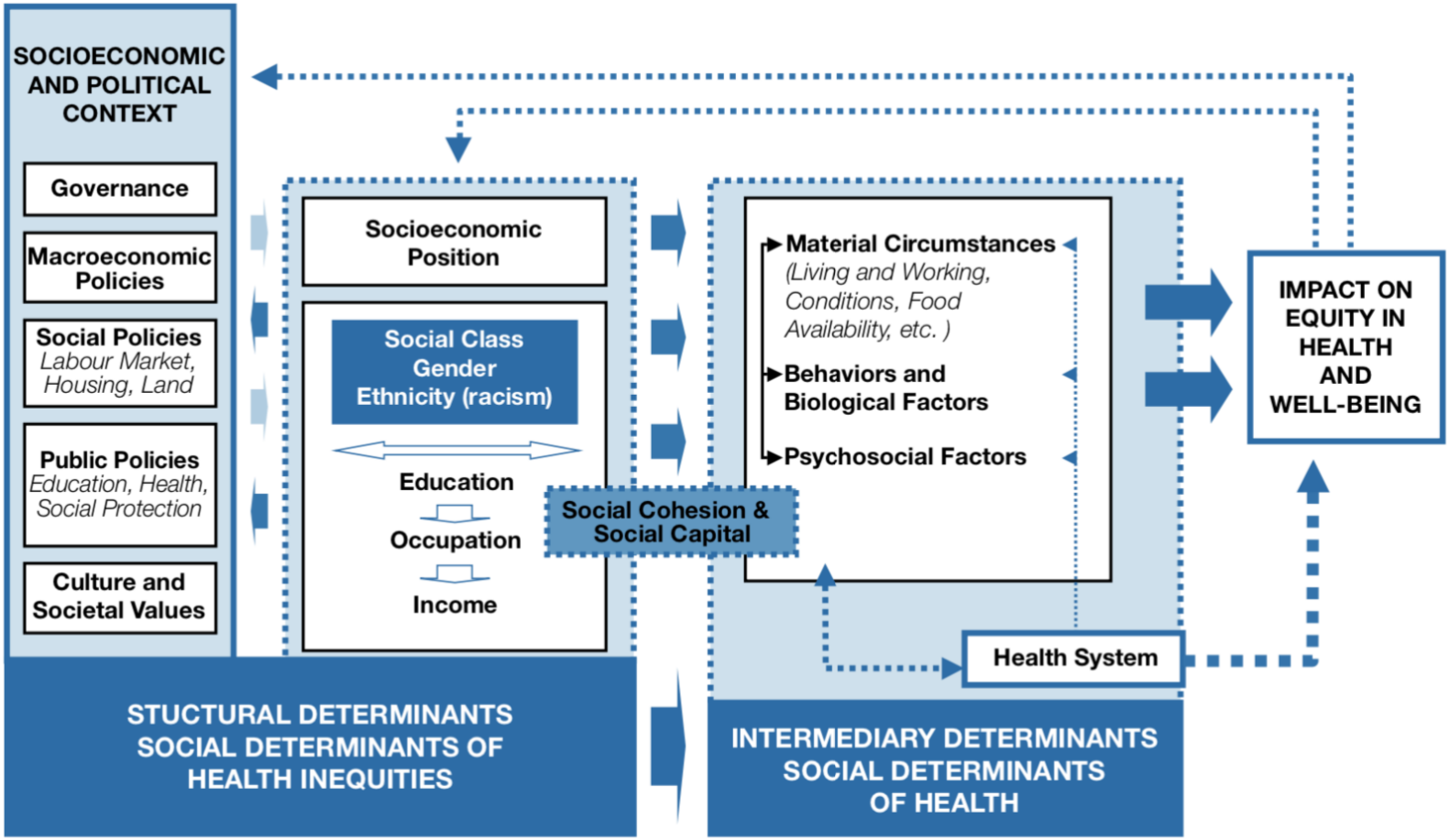

Figure 1. The Commission on Social Determinants of Health Theoretical Framework
Adapted from Solar O., Irwin A., (2010). A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion Paper 2 (Policy and Practice). Geneva; World Health Organization. Copyright World Health Organization

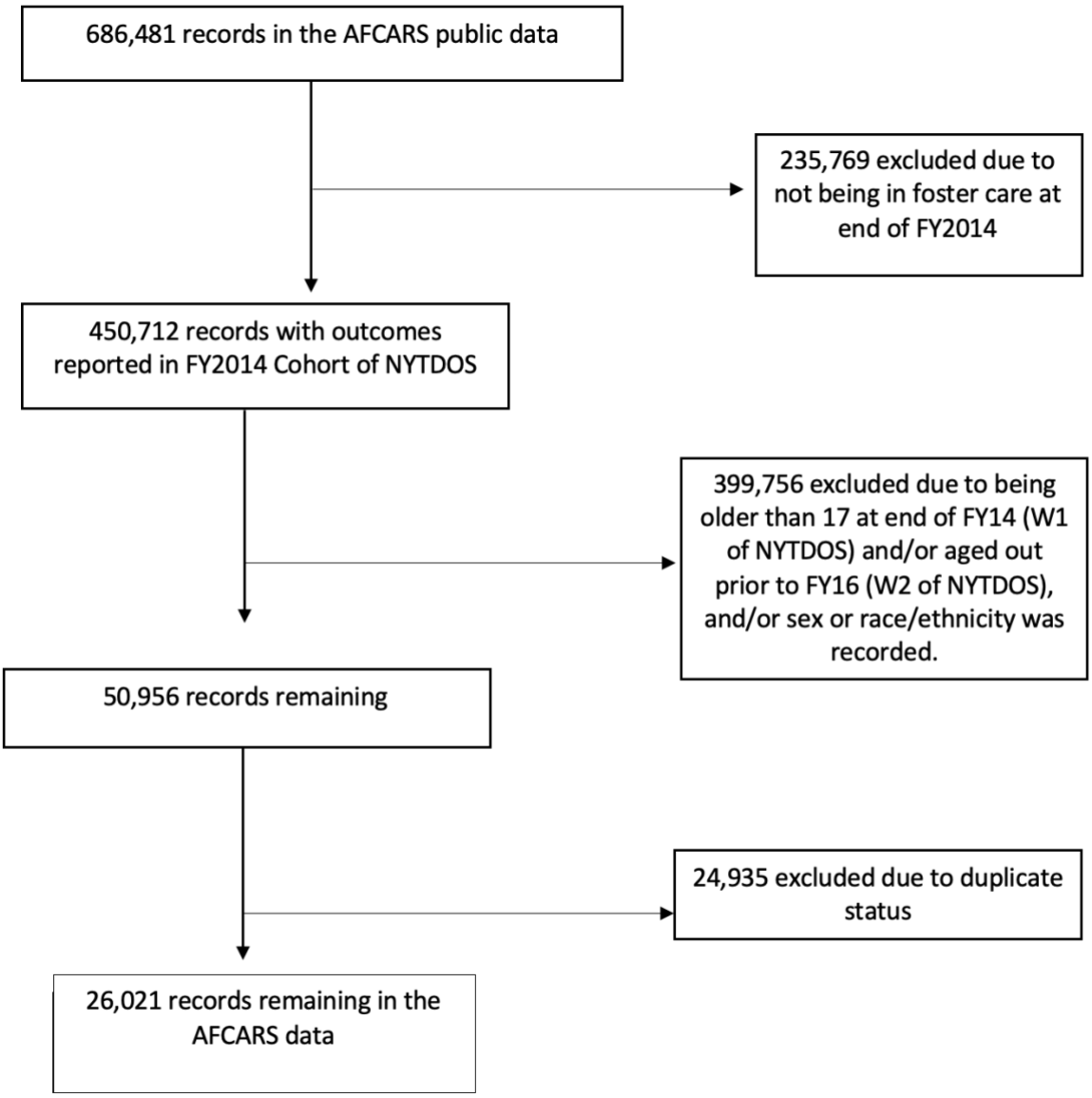

Figure 2. Flow Chart of Case Selection from AFCARS Datafile (FC2014v7)

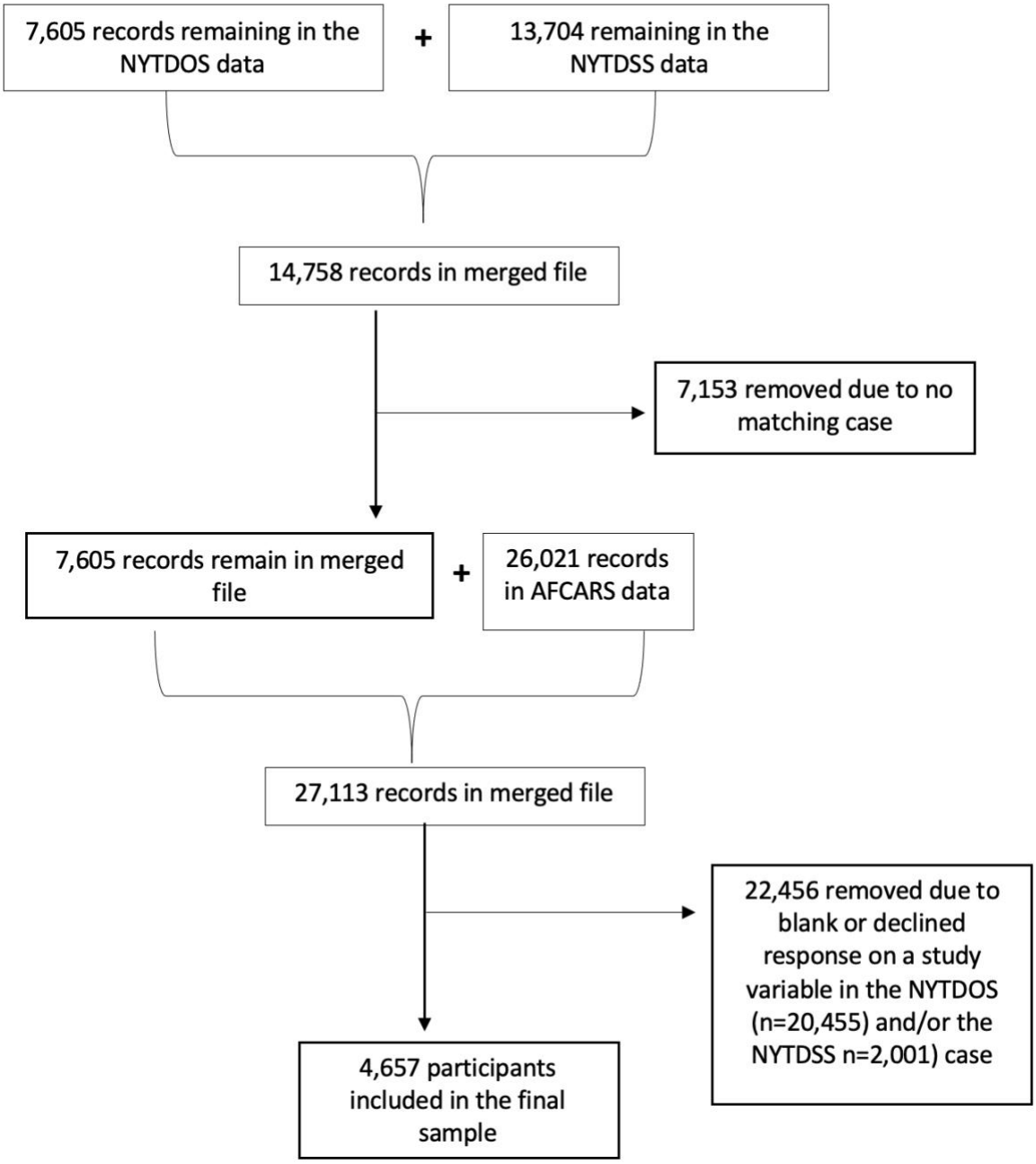

Figure 3. Flow Chart Case Selection from AFCARS, NYTDSS, and NYTDSS Datafiles (Outcomes_C11W3v2, NYTD Services 2018, and FC2014v7)

Table 1. Demographics, reason for referral and placement experiences in AFCARS

	Sample from merged AFCARS and NYTD files (N=4,657)	
Demographics	N	%
Intersectional Identity [a]		
Non-Hispanic White Male	784	16.8
Non-Hispanic White Female	1061	22.8
Non-Hispanic Black Male	562	12.1
Hispanic any race Male	442	9.5
Hispanic any race Female	643	13.8
Other Male [b]	168	3.6
Other Female [b]	261	5.6
Diagnosed clinical disability	178	3.8
Referred to foster care due to abuse [c], abandonment, or neglect	3144	67.5
Placement experiences at age 17		
Residing in a group home or institution [c d]	1460	31.4
	Mean	S.D.
Number of placements while in care	5.76	6.06

Notes. a = Non-Hispanic ethnicity, unless otherwise noted; b = Non-Hispanic American Indian or Alaska Native, Non-Hispanic Hawaiian/Pacific Islander, Non-Hispanic Asian, Non-Hispanic more than one race, and Race/Ethnicity Unknown; c = Reflects the number and percentage of participants answering "yes"; d = Institution defined as a facility operated by a public or private agency and providing 24-hour care and/or treatment for youth who require separation from their own homes and group living experience.

Table 2. Outcomes, covariates, and services in NYTD data

	Sample from merged AFCARS and NYTD files (N=4,657)	
Dependent Variables	N	%
Outcomes at Wave 3		
Employed full- or part-time	2765	59.4
Highest credential was secondary educational	3520	75.6
Highest credential was postsecondary educational	349	7.5
Independent Variables (Mediators)		
Foster care experiences through Wave 2 [a]		
Incarceration	1360	29.2
Homelessness	1397	30
Substance abuse service referral	1239	26.6
Connection to supportive adult	4602	98.8
	Mean [b]	S.D.
NYTD Services up to FY2016		
Material support related services	48.9%	.34
Academic support related services	35%	.28
Employment support related services	26%	.26

Notes. a= number and percentage of participants answering "yes" to this question at W1 or W2; b = the product of dividing the sum of records indicating "yes" for receipt of a service within each category by the total number of service records in the NYTDSS.

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Office of Research Integrity
Research Compliance, MARC 414

MEMORANDUM

To:	Dr. Hui Huang
CC:	John Campbell
From:	Elizabeth Juhasz, Ph.D., IRB Coordinator EJ
Date:	February 3, 2020
Protocol Title:	**"The Mediating Effects of Foster Care Experiences on Employment and Education Outcomes in Aged Out Former Foster Youth"**

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the **Exempt Review** process.

IRB Protocol Exemption #:	IRB-20-0046	**IRB Exemption Date:**	01/22/20
TOPAZ Reference #:	108661		

As a requirement of IRB Exemption you are required to:

1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
3) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb.

EJ

Figure 4. IRB Exemption

Figure 5. Boxplot Visualization of Univariate Outlier Assessment

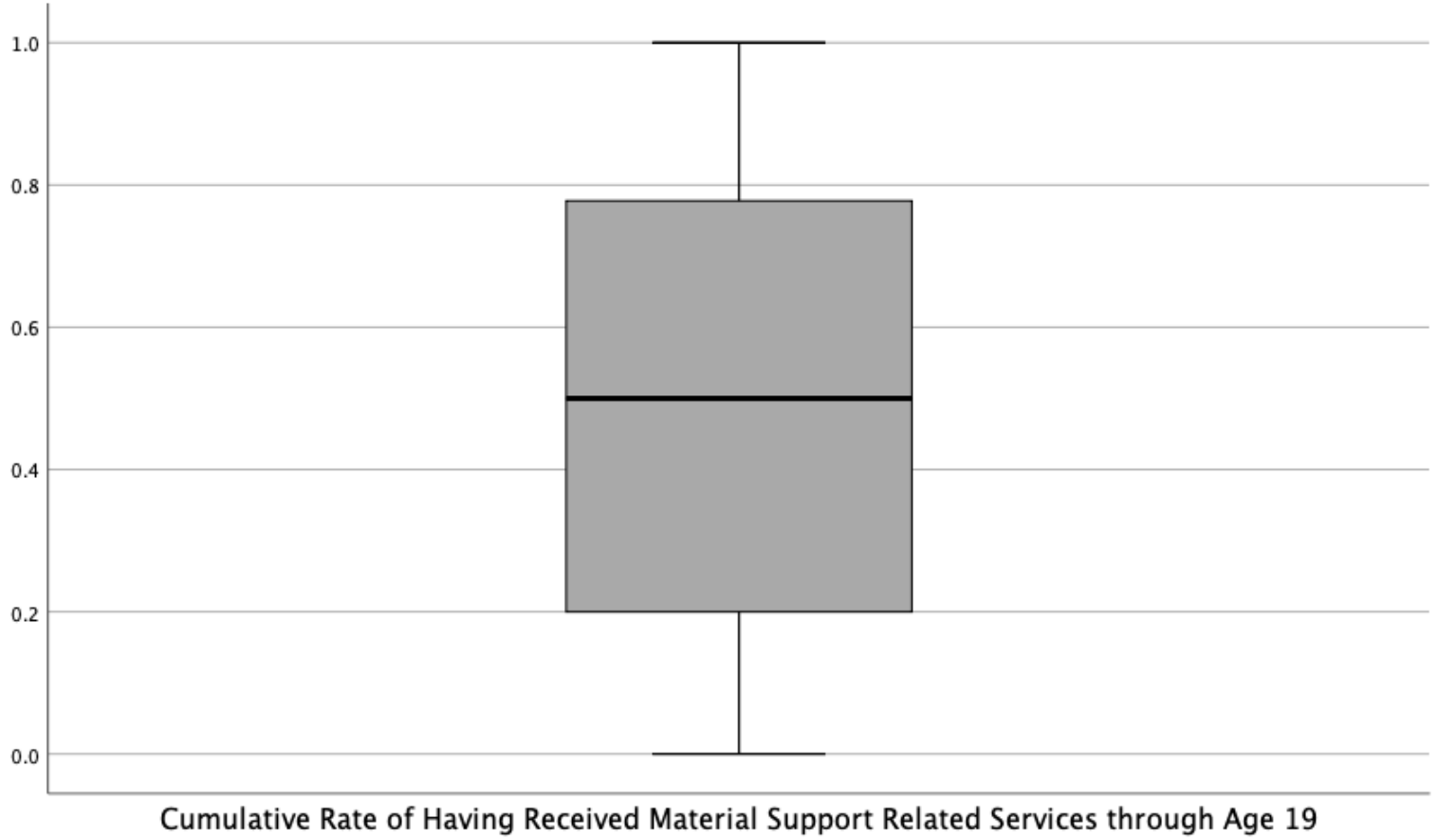

Figure 6. Boxplot Visualization of Univariate Outlier Assessment

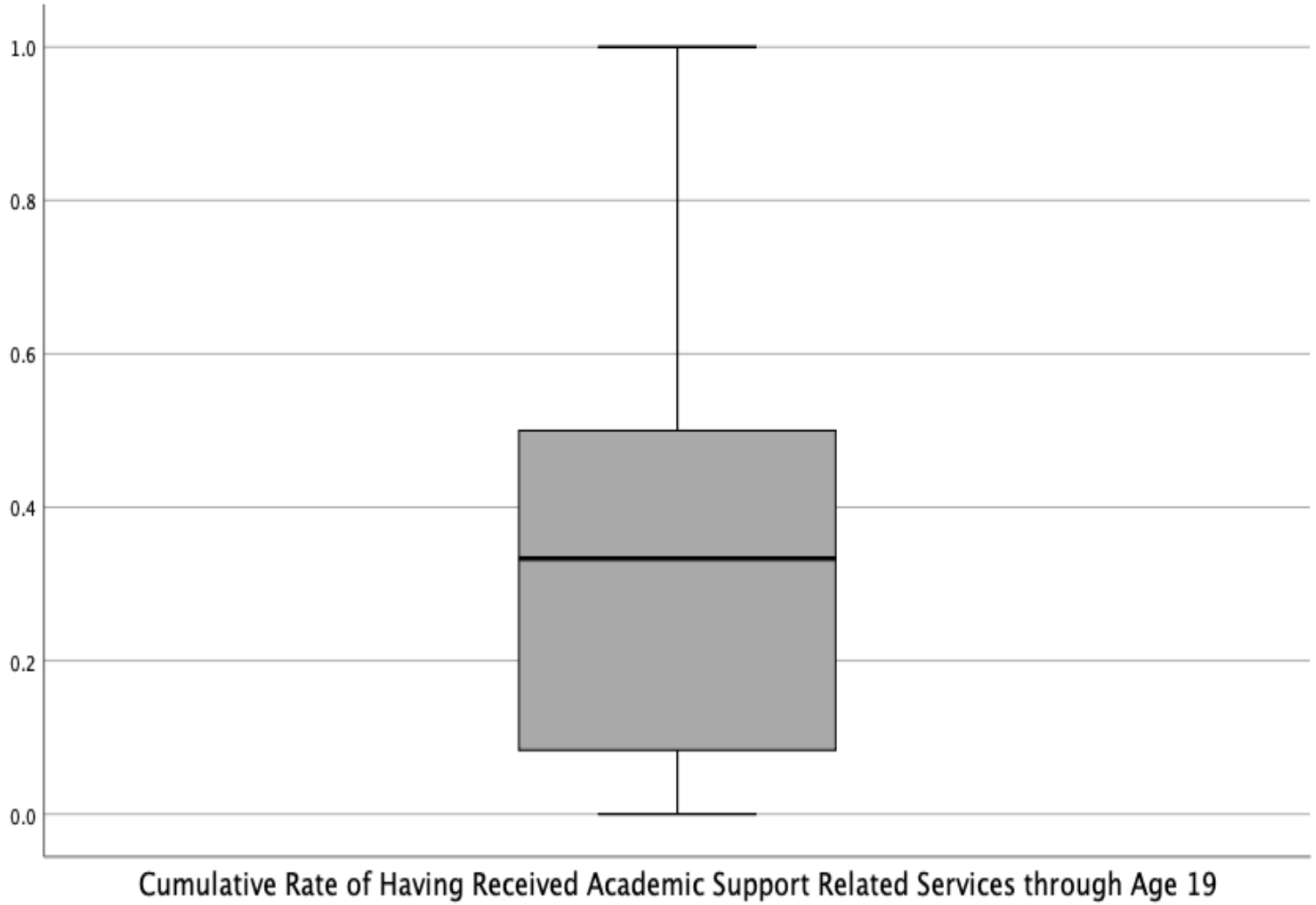

Figure 7. Boxplot Visualization of Univariate Outlier Assessment

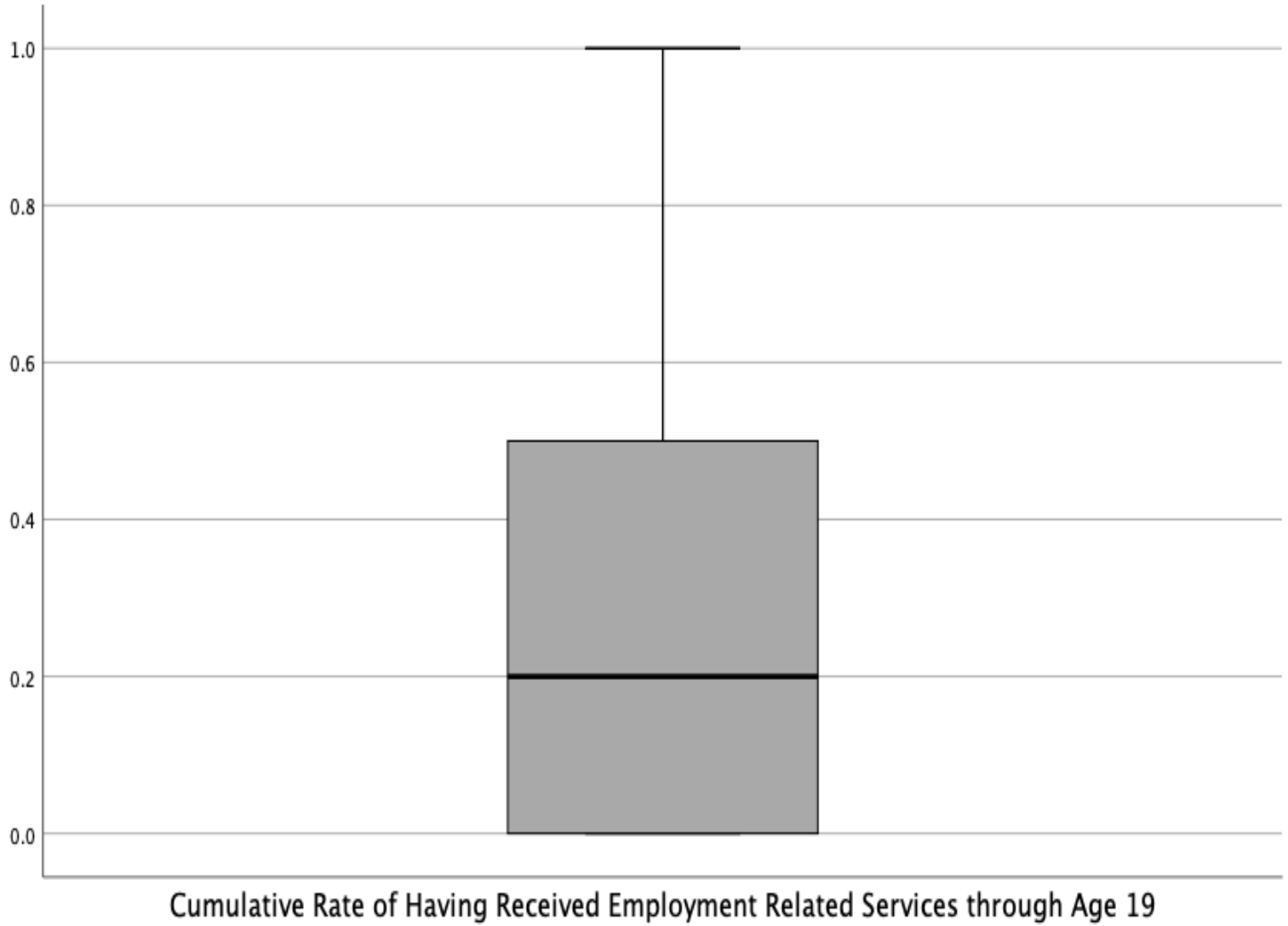

Figure 8. Histogram Visualization of Test for Normality

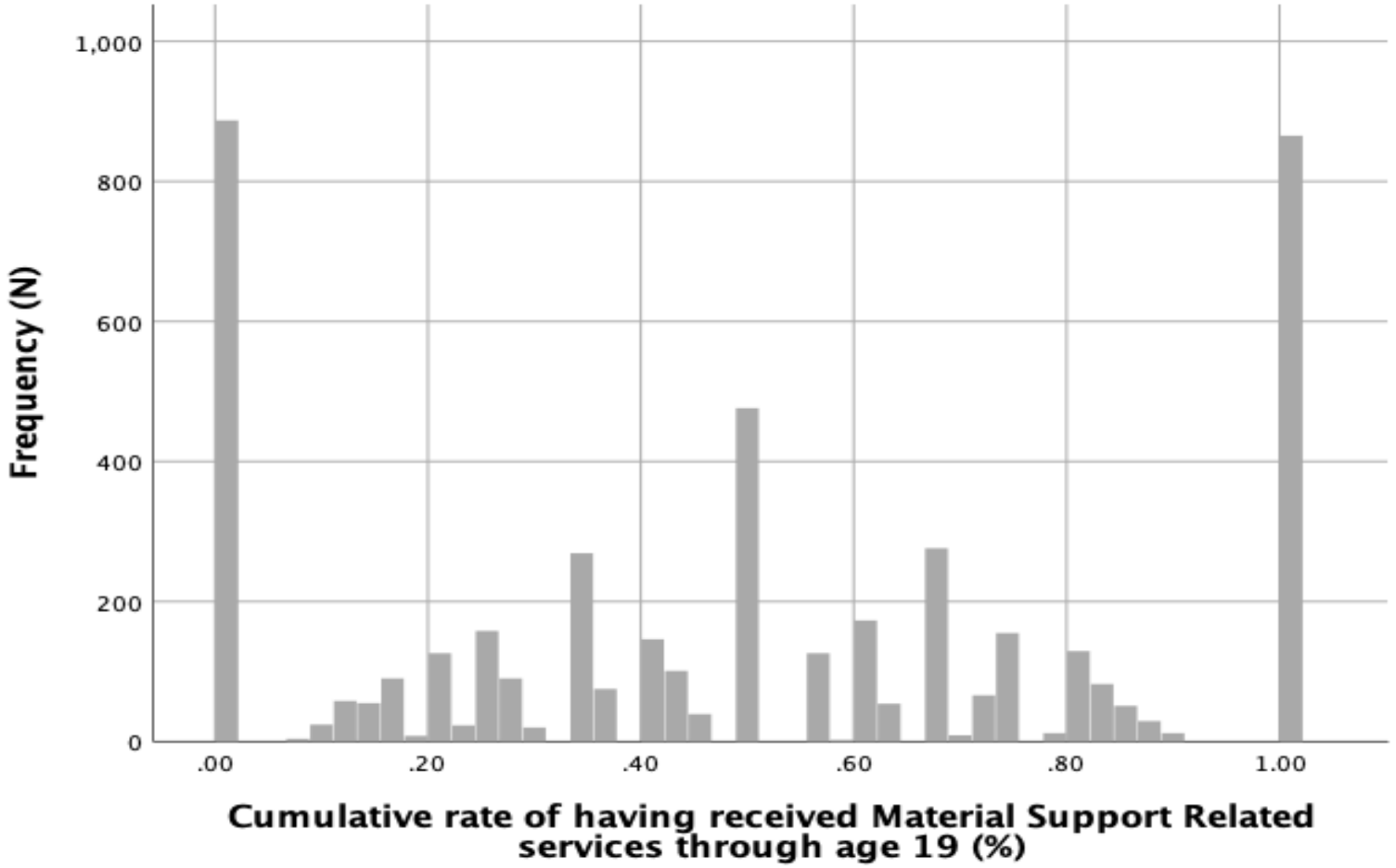

Figure 9. Histogram Visualization of Test for Normality

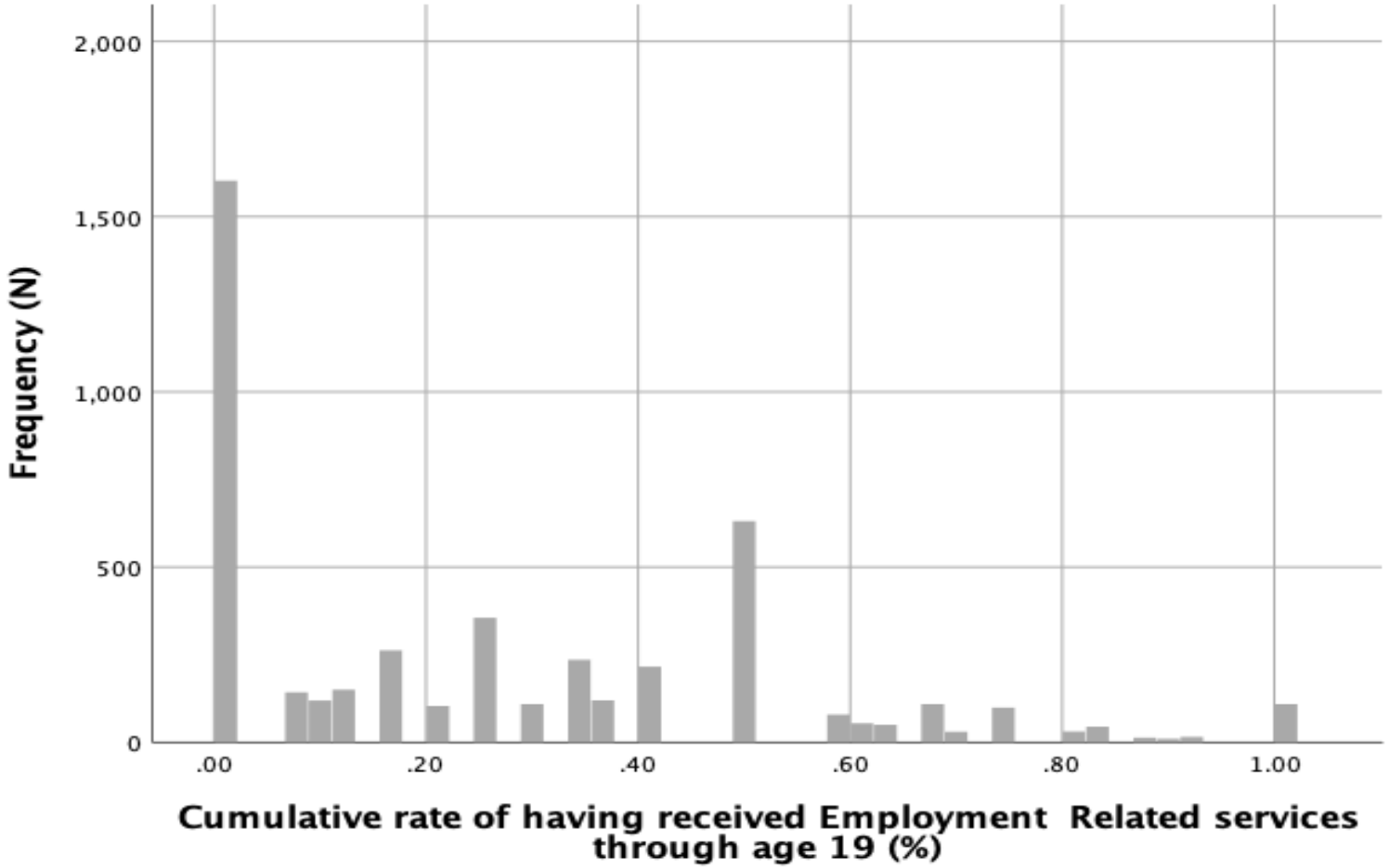

Figure 10. Histogram Visualization of Test for Normality

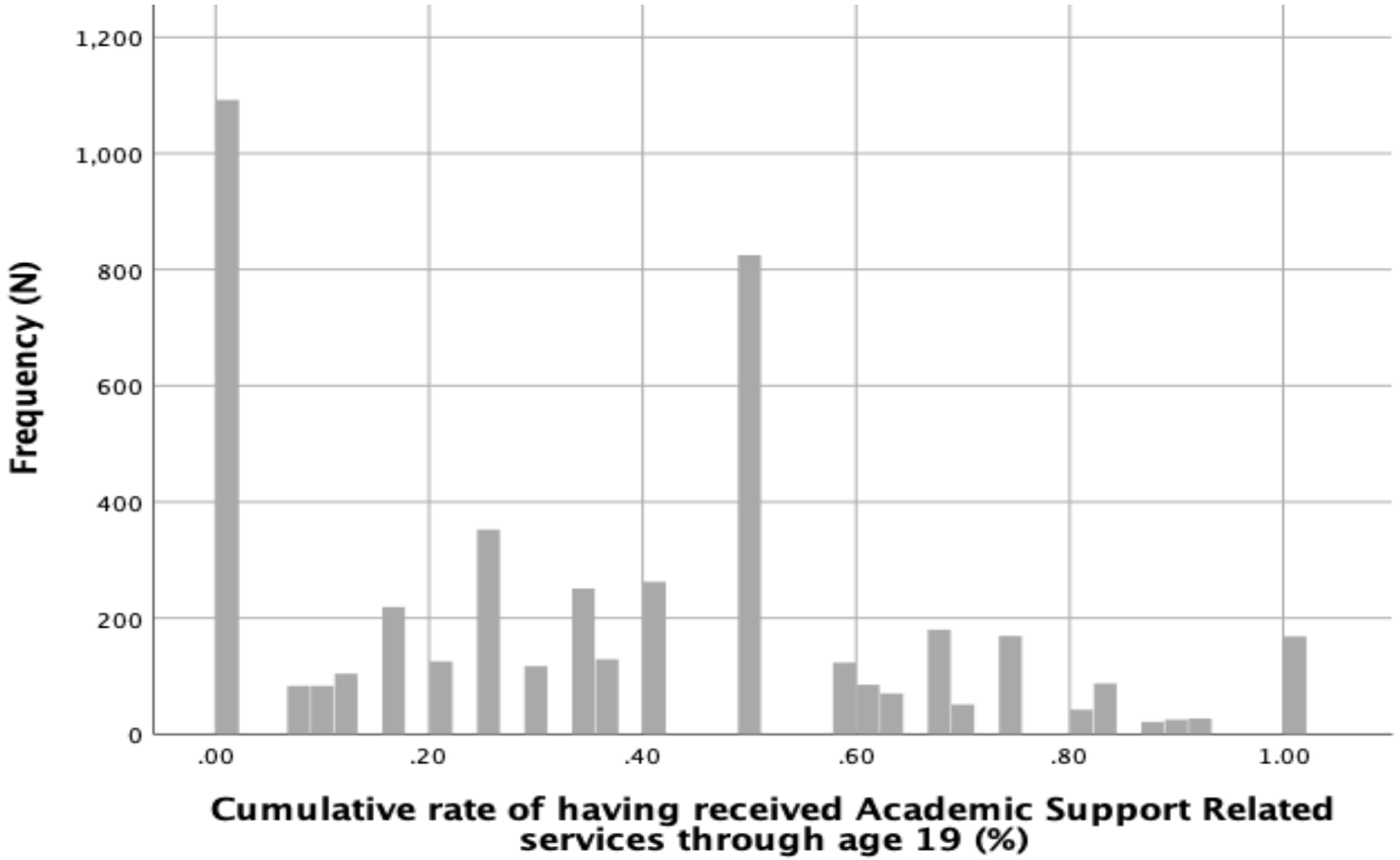

Table 3. Assessment of Univariate Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Material Support Related Services	.113	4657	.000	.913	4657	.000
Academic Support Related Support Services	.127	4657	.000	.928	4657	.000
Employment Related Services	.181	4657	.000	.873	4657	.000

Note: MSRS = Rate of having received material support related services through age 19; ASRS = Rate of having received academic support related services through age 19; ERS = Rate of having received employment related services through age 19

Table 4. Assessment of Multivariate Normality

Variable	Min	Max	Skew	Standard error	Critical value	Kurtosis	Standard error	Critical value
Rate of Having Received Material Support Related Services Through Age 19	0	1	.048	.036	1.33	-1.22	.071	17.29
Rate of Having Received Academic Support Related Services Through Age 19	0	1	.398	.036	11.05*	-.693	.071	9.76
Rate of Having Received Employment Related Services Through Age 19	0	1	.808	.036	22.44*	.036	.071	2.11

Note. Bold values indicate significance at $p \leq .001$

Table 5. Assessment of Multivariate Outliers: Mahalanobis Distances

Variable	Minimum	Maximum	Mean
Material Support Related Services	.005	21.598	2.99
Academic Support Related Services	.005	21.598	2.99
Employment Related Services	.005	21.598	2.99

Note. Results shown were significant at $p \leq .001$.

Table 6 Assessment of Multicollinearity

	Collinearity Statistics	
Variable	Tolerance	VIF
Cumulative rate of having received material support related services by age 19	.969	1.032
Cumulative rate of having received academic support related services by age 19	.671	1.489
Cumulative rate of having received employment related services by age 19	.667	1.499
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect	.947	1.056
Connection to supportive adult by age 19	.991	1.009
Incarcerated at least once by age 19	.805	1.242
Homeless at least once by ag 19	.914	1.094
Referred to a substance abuse program at least once by age 19	.877	1.140
More than 5 different placements by age 19	.929	1.076
Resided in a pre-adoptive home at age 17	.399	2.505
Resided in a relative foster home at age 17	.045	2.454

Resided in non-relative foster home at age 17	.021	7.471
Resided in a group home at age 17	.037	26.699
Resided in an institutional placement home at age 17	.040	24.748
Resided in a supervised independent living home at age 17	.155	6.434
Runaway from home or foster care at age 17	.213	4.692
Resided in a trial visit foster home at age 17	.278	3.599
Diagnosed with a clinical disability by age 17	.967	1.034
Intersectional identity	.971	1.029

Note. Bold values indicate significance at $p \leq .001$.

Table 7. Assessment of Autocorrelation (Independence of Errors)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1_a	.062[d]	.004	.003	.429	1.970
2_b	.068[d]	.005	.004	.263	1.987
3_c	.083[d]	.007	.006	.490	1.956

Notes. a = Dependent Variable: Youth's highest education credential attained was high school diploma or G.E.D. at age 21; b = Dependent Variable: Youth's highest education credential attained was postsecondary education degree or vocational certificate or certification at age 21; c = Dependent Variable: Youth was employed part time or full time at age 21; d = Dependent Variables: Cumulative rate of having received material support related services through age 19, Cumulative rate of having received academic support related services through age 19, Cumulative rate of having received employment related services through age 19.

Table 8. Study Variable Bivariate Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. MSRS	--											
2. ASRS	.007	--										
3. ERS	.023	.564	--									
4. RFR	.017	-.038	-.054	--								
5. CTA	.042	.041	.028	.006	--							
6. JAIL	-.079	-.022	.004	-.160	-.045	--						
7. HMLS	.011	-.013	.026	.004	-.056	.208	--					
8. SAR	-.025	-.005	-.013	-.083	-.016	.298	.194	--				
9. PLCT	-.040	-.032	-.007	.044	-.008	.145	.085	.074	--			
10. GHIN	-.091	-.002	.055	-.134	-.039	.252	.063	.154	.130	--		
11. CLN	.015	-.041	.035	-.005	-.031	.025	-.016	-.024	.014	-.085	--	
12. INT	.068	-.013	-.037	.059	-.016	-.063	-.009	.024	-.003	-.064	-.051	--

Notes. Bold values represent significant ($p < .05$) associations; MSRS = Cumulative rate of having received material support related services through age 19; ASRS = Cumulative rate of having received academic support related services through age 19; ERS = Cumulative rate of having received employment related services through age 19; RFR = Reason for referral was physical abuse, sexual abuse, neglect, or abandonment; CTA= Youth reported having had a connection to a supportive adult by age 19 (W1 or W2); JAIL = Youth reported incarceration by age 19 (W1 or W2); HMLS = Youth reported homelessness by age 19 (W1 or W2); SAR = Youth reported substance abuse referral by age 19 (W1 or W2); PLCT = Youth had more than 5 placements by age 19; GHIN = Referred to care due to sexual abuse, physical abuse, neglect, or abandonment; CLN = Youth had a clinical disability at age 19.

Table 9. Chi-Square Test of Association Summary of Employment Status by Intersectional Identity

Intersectional Identity	Employment Status	
	Full- or Part-Time N (%)	Not Employed N (%)
Non-Hispanic White Male	455 (58)	329 (42)
Non-Hispanic White Female	641 (60.4)	420 (39.6)
Non-Hispanic Black Male	303 (53.9)	259 (46.1)
Non-Hispanic Black Female	425 (57.7)	311 (42.3)
Hispanic Any Race Male	305 (69)	137 (31)
Hispanic Any Race Female	383 (59.6)	260 (40.4)
Other[a] Male	89 (53)	70 (47)
Other[a] Female	164 (52.9)	97 (47.1)
Total	2765 (59.4)	2765 (40.6)

Notes. χ^2 (7, 4657) = 29.965, $p < .001$; V = .080; - a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian.

Table 10. Chi-Square Test of Association Summary of Secondary Educational Attainment by Intersectional Identity

	Attainment Status	
Intersectional Identity	High School Diploma or GED N (%)	Not High School Diploma or GED N (%)
Non-Hispanic White Male	584 (74.5)	200 (25.5)
Non-Hispanic White Female	803 (75.7)	258 (24.3)
Non-Hispanic Black Male	426 (75.8)	136 (24.2)
Non-Hispanic Black Female	537 (73)	199 (27.3)
Hispanic Any Race Male	341 (77.1)	101 (22.9)
Hispanic Any Race Female	511 (79.5)	132 (20.5)
Other[a] Male	117 (77)	51 (23)
Other[a] Female	201 (77)	60 (23)
Total	3520 (75.6)	1137 (24.4)

Notes. χ^2 (7,4657) = 12.624, p = .082; V = .052; a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian.

Table 11. Chi-Square Test of Association Summary of Postsecondary Educational Attainment by Intersectional Identity

	Attainment Status	
Intersectional Identity	Postsecondary or Vocational Credential N (%*)	Not Postsecondary or Vocational Credential N (%*)
Non-Hispanic White Male	60 (7.7)	724 (92.3)
Non-Hispanic White Female	97 (9.1)	964 (90.9)
Non-Hispanic Black Male	33 (5.9)	529 (94.1)
Non-Hispanic Black Female	69 (9.4)	667 (90.6)
Hispanic Any Race Male	17 (3.8)	425 (96.2)
Hispanic Any Race Female	41 (6.4)	602 (93.6)
Other[a] Male	8 (4.8)	160 (95.2)
Other[a] Female	24 (9.2)	236 (90.8)
Total	349 (7.5)	4308 (92.5)

Notes. χ^2 (15, 4657) = 35.636, p = .002; V = .070. a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian.

Table 12. Binary Logistic Regression Summary for Individual Intersectional Identity Predicting Odds of Full-Time or Part-Time Employment by Age 21

							95% C.I.for EXP(B)	
Variable	B	Std. Error	Wald Statistic	df	Sig.	Odds Ratio Exp(B)	Lower	Upper
Non-Hispanic White Female	-.201	.147	1.865	1	.172	.818	.613	1.091
Non-Hispanic Black Male	-.102	.143	.515	1	.473	.903	.683	1.194
Non-Hispanic Black Female	-.368	.154	5.754	1	.016	.692	.512	.935
Hispanic Any Race Male	-.213	.148	2.062	1	.151	.808	.604	1.081
Hispanic Any Race Female	.275	.164	2.806	1	.094	1.317	.954	1.817
Other[a] Male	-.138	.151	.831	1	.362	.871	.648	1.172
Other[a] Female	-.406	.201	4.089	1	.043	.666	.450	.988
(Constant)	.525	.128	16.809	1	.000	3.350		

Notes. $\chi^2(7, 4657) = 30.41$, $p < .001$); a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian. Bold values represent significant ($p < .05$) associations.

Table 13. Binary Logistic Regression Summary for Individual Intersectional Identity Predicting Odds of Highest Education Credential of High School Diploma or G.E.D. by Age 21

							95% C.I.for EXP(B)	
Variable	B	Std. Error	Wald Statistic	df	Sig	Odds Ratio Exp(B)	Lower	Upper
Non-Hispanic White Male			12.561	7		.084		
Non-Hispanic White Female	-.137	.168	.666	1	.415	.872	.627	1.212
Non-Hispanic Black Male	-.074	.164	.202	1	.653	.929	.674	1.280
Non-Hispanic Black Female	-.067	.177	.144	1	.704	.935	.661	1.323
Hispanic Any Race Male	-.216	.169	1.639	1	.200	.806	.579	1.122
Hispanic Any Race Female	.008	.186	.002	1	.966	1.008	.700	1.450
Other[a] Male	.145	.177	.671	1	.413	1.156	.818	1.633
Other[a] Female	-.379	.223	2.879	1	.090	.685	.442	1.061
(Constant)	1.209	.147	67.535	1	.000	3.350		

Notes. $\chi^2(7, 4657) = 12.623$, $p = .082$); a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian. Bold values represent significant ($p < .05$) associations.

Table 14. Binary Logistic Regression Summary for Individual Intersectional Identity Predicting Odds of Highest Education Credential of Post-Secondary Degree or Vocational Certificate or Degree by Age 21

							95% C.I. for EXP(B)	
Variable	B	Std. Error	Wald Statistic	df	Sig	Odds Ratio Exp(B)	Lower	Upper
Non-Hispanic White Male			21.840	7				
Non-Hispanic White Female	-.200	.253	.628	1	.428	.818	.499	1.343
Non-Hispanic Black Male	-.006	.239	.001	1	.979	.994	.622	1.588
Non-Hispanic Black Female	-.484	.279	3.006	1	.083	.616	.356	1.065
Hispanic Any Race Male	.021	.249	.007	1	.932	1.022	.627	1.663
Hispanic Any Race Female	-.929	.327	8.059	1	.005	.395	.208	.750
Other[a] Male	-.397	.268	2.187	1	.139	.673	.398	1.138
Other[a] Female	-.706	.421	2.812	1	.094	.494	.216	1.127
(Constant)	-2.290	.214	114.286	1	.000	.101		

Notes. $\chi^2(7, 4657) = 24.218$, $p = .001$); a = includes Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic two or more races, and Non-Hispanic Asian. Bold values represent significant ($p < .05$) associations; Bold values represent significant ($p < .05$) associations.

Table 15. Crosstabulation of Employment Status at Age 21 and Intermediary Determinants

	Employment Status					
Intermediary Determinant	Full- or Part-Time Employed N (%*)	Not Employed N (%*)	χ^2	df	p-value	V
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect			.615	1	.433	.011
Yes	1879 (59.8)	1265 (40.2)				
No	886 (58.6)	627 (41.4)				
Connection to Supportive Adult [a]			1.281	1	.258	.017
Yes	2737 (59.5)	1866 (40.5)				
No	28 (51.9)	26 (48.1)				
Incarceration [a]			48.811	1	.000	.102
Yes	701 (37.4)	659 (48.5)				
No	2064 (62.6)	1233 (37.4)				
Homelessness [a]			15.486	1	.000	.058
Yes	769 (55)	628 (45)				
No	1996 (61.2)	1264 (38.8)				
Substance Abuse Referral [a]			13.606	1	.000	.054
Yes	681 (55)	558 (45)				
No	2084 (61)	1334 (39)				

Above Average Number f placement settings [b]				51.908	1	.000	.106
	Yes	863 (52.4)	785 (47.6)				
	No	1902 (63.2)	1107 (36.8)				
Group home or institutional placement [c]				45.468	1	.000	.099
	Yes	762 (52.2)	698 (47.8)				
	No	2003 (62.7)	1194 (37.3)				
Clinical Disability [c]				13.583	1	.000	.054
	Yes	82 (46.1)	96 (53.9)				
	No	2683 (59.9)	1796 (40.1)				

Notes. Bold values represent significant ($p < .05$) association; * = within group proportion; a = includes sexual abuse, physical abuse, abandonment, and neglect; b = at least once through age 19; c = youth had 5 or more placements by age 17; d = at age 17

Table 16. Crosstabulation of Highest Education Credential being High School Diploma or GED at Age 21 and Intermediary Determinants

	Attainment Status					
Intermediary Determinant	High School Diploma or GED N (%*)	Not High School Diploma or GED N (%*)	χ^2	df	p-value	V
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect			2.904	1	.088	.025
Yes	2353 (74.8)	791 (25.2)				
No	1167 (77.1)	346 (22.9)				
Connection to Supportive Adult [a]			2.355	1	.125	.022
Yes	3484 (75.7)	1119 (24.3)				
No	36 (66.7)	18 (33.3)				
Incarceration [a]			57.364	1	.000	.111
Yes	927 (21.4)	433 (31.8)				
No	2593 (78.6)	704 (21.5)				
Homelessness [a]			68.180	1	.000	.121
Yes	945 (67.6)	452 (32.4)				
No	2575 (79)	685 (21)				

Substance Abuse Referral [a]			18.355	1	.000	.063
	Yes	881 (71.1)	358 (28.9)			
	No	2639 (77.2)	779 (22.8)			
Placement History [b]			40.895	1	.000	.094
	Yes	645 (21.4)	492 (29.9)			
	No	2364 (78.6)	1156 (70.1)			
Group Home or Institutional Placement [c]			19.817	1	.000	.065
	Yes	1043 (71.4)	417 (28.6)			
	No	2477 (77.5)	720 (22.5)			
Clinical Disability [c]			.653	1	.419	.012
	Yes	130 (73)	48 (27)			
	No	3390 (75.7)	1089 (24.3)			

Notes. Bold values represent significant ($p < .05$) association; * = within group proportion; a = at least once through age 19; b = youth had 5 or more placements by age 17; c = at age 17

Table 17. Crosstabulation of Highest Education Credential being Postsecondary Degree or Vocational Certificate or Degree at Age 21 and Intermediary Determinants

	Attainment Status					
Intermediary Determinant	Postsecondary or Vocational Degree/Certification N (%*)	Not Postsecondary or Vocational Degree/Certification N (%*)	χ^2	df	p-value	V
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect			2.923	1	.087	.025
Yes	250 (8)	2894 (92)				
No	99 (6.5)	1414 (93.5)				
Connection to Supportive Adult [a]			2.509	1	.113	.023
Yes	348 (7.6)	4255 (92.4)				
No	1 (1.9)	53 (98.1)				
Incarceration [a]			8.572	1	.003	.043
Yes	78 (5.7)	1282 (94.3)				
No	271 (8.2)	3036 (91.8)				
Homelessness [a]			3.184	1	.074	.026
Yes	90 (6.4)	1307 (93.6)				
No	259 (7.9)	3001 (92.1)				
Substance Abuse Referral [a]			4.505	1	.034	.031
Yes	76 (6.1)	1163 (93.9)				
No	273 (8)	3145 (92)				
Placement History [b]			.003	1	.953	.001
Yes	123 (7.5)	1525 (92.5)				
No	226 (7.5)	2783 (92.5)				

Group Home or Institutional Placement [c]			15.121	1	.000	.057
Yes	77 (5.3)	1383 (94.7)				
No	272 (8.5)	2925 (91.5)				
Clinical Disability [c]			.940	1	.320	.015
Yes	10 (5.6)	168 (94.4)				
No	339 (7.6)	4140 (92.4)				

Notes. Bold values represent significant ($p < .05$) association; * = within group proportion; a = at least once through age 19; b = youth had 5 or more placements by age 17; c = at age 17

Table 18. Binary Logistic Regression Summary for Intermediary Determinants Predicting Odds of Full- or Part-Time Employment at age 21

							95% C.I. for EXP(B)	
Variable	B	Std. Error	Wald Statistic	df	Sig.	Odds Ratio Exp(B)	Lower	Upper
Material Support Related Services [a]	.360	.088	16.648	1	.000	1.433	1.206	1.703
Academic Support Related Services [a]	.213	.131	2.622	1	.105	1.237	.956	1.600
Employment Related Services [a]	.088	.140	.400	1	.527	1.092	.831	1.437
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect [d]	-.013	.066	.037	1	.847	.987	.867	1.124

Connection to Supportive Adult [b]	.065	.281	.054	1	.816	1.067	.615	1.853
Incarceration [b]	-.260	.072	12.923	1	.000	.771	.669	.888
Homelessness [b]	-.151	.068	4.889	1	.027	.860	.753	.983
Substance Abuse Referral [b]	-.068	.072	.893	1	.345	.934	.810	1.076
Placement History [c]	-.350	.064	30.045	1	.000	.705	.622	.799
Group Home or Institutional Placement [d]	-.269	.068	15.669	1	.000	.764	.669	.873
Clinical Disability [d]	-.502	.157	10.216	1	.001	.606	.445	.824
Constant	.427	.291	2.151	1	.142	1.533		

Notes. $\chi^2(11, 4657) = 147.412$, $p < .001$); a = cumulative rate through age 19; b = at least once through age 19; c = through age 17; d = at age 17; Bold values represent significant ($p < .05$) association.

Table 19. Binary Logistic Regression Summary for Intermediary Determinants Predicting Odds of Highest Education Credential being High School or GED at age 21

						95% C.I.for EXP(B)		
	B	Std. Error	Wald Statistic	df	Sig.	Odds Ratio Exp(B)	Lower	Upper
Material Support Related Services [a]	.151	.101	2.250	1	.134	1.163	.955	1.417
Academic Support Related Services [a]	.352	.151	5.405	1	.020	1.422	1.057	1.914
Employment Related Services [a]	.126	.162	.607	1	.436	1.134	.826	1.557
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect [d]	-.187	.077	5.932	1	.015	.829	.713	.964

Connection to Supportive Adult [b]	.165	.298	.308	1	.579	1.180	.658	2.115
Incarceration [b]	-.351	.080	19.005	1	.000	.704	.601	.824
Homelessness [b]	-.466	.075	38.547	1	.000	.628	.542	.727
Substance Abuse Referral [b]	-.080	.081	.977	1	.323	.923	.788	1.082
Placement History [c]	-.318	.072	19.397	1	.000	.728	.632	.838
Group Home or Institutional Placement [d]	-.168	.077	4.770	1	.029	.846	.727	.983
Clinical Disability[d]	-.088	.177	.246	1	.620	.916	.647	1.296
Constant	1.337	.311	18.502	1	.000	3.807		

Notes. $\chi^2(11, 4657) = 152.193$, $p < .001$); a = cumulative rate through age 19; b = at least once through age 19; c = through age 17; d = at age 17; Bold values represent significant ($p < .05$) association.

Table 20. Binary Logistic Regression Summary for Intermediary Determinants Predicting Highest Educational Attainment being Postsecondary Degree or Vocational Certificate or Degree at age 21

							95% C.I.for EXP(B)	
	B	Std. Error	Wald Statistic	df	Sig.	Odds Ratio Exp(B)	Lower	Upper
Material Support Related Services [a]	.666	.165	16.392	1	.000	1.947	1.410	2.688
Academic Support Related Services [a]	.175	.243	.520	1	.471	1.192	.740	1.919
Employment Related Services [a]	-.178	.263	.461	1	.497	.837	.500	1.400
Referred to care due to sexual abuse, physical abuse, abandonment, or neglect [d]	.119	.126	.899	1	.343	1.127	.881	1.442
Connection to Supportive Adult [b]	1.225	1.013	1.461	1	.227	3.405	.467	24.814
Incarceration [b]	-.173	.145	1.417	1	.234	.841	.633	1.118
Homelessness [b]	-.151	.131	1.314	1	.252	.860	.665	1.113
Substance Abuse Referral [b]	-.136	.142	.918	1	.338	.873	.661	1.153

Placement History [c]	.104	.119	.757	1	.384	1.110	.878	1.402
Group Home or Institutional Placement [d]	-.380	.140	7.411	1	.006	.684	.520	.899
Clinical Disability[d]	-.236	.334	.501	1	.479	.790	.410	1.519
Constant	-3.987	1.024	15.160	1	.000	.019		

Notes. $\chi^2(11, 4657) = 44.397$, $p < .001$); a = cumulative rate through age 19; b = at least once through age 19; c = youth had 5 or more placements by age 17; d = at age 17; Bold values represent significant ($p < .05$) association.

Table 21. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Full Model (M1.1)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Intermediary Determinant							
Incarceration[a]	-.127 (.022) [-.180; -.093]	-.017 (.025) [-.070; .032]	-.125 (.022) [-.171; -.079]	.007 (.028) [-.047; .063]	-219. (.022) [-.265; -.176]	.029 (.041) [-.054; .103]	-.148 (.032) [-.208; -.088]
Group Home[b]	-.118 (.022) [-.173; -.086]	.016 (.027) [-.033; .065]	-.107 (.024) [-.156; -.059]	.009 (.029) [-.048; .070]	-.150 (.024) [-.196; -.105]	-.088 (.040) [-.162; -.006]	-.176 (.030) [-.235; -.119]
Clinical Disability[e]	-.040 (.010) [-.039;.001]	-.019 (.012) [-.042; .004]	-.033 (.011) [-.053; -.012]	-.026 (.012) [-.048; -.002]	-.035 (.011) [-.056; -.015]	-.012 (.018) [-.047; .026]	-.041 (.012) [-.065; -.017]
Material Services[c]	.059 (.017) [.012; .080]	.028 (.020) [-.009; .069]	.088 (.018) [.049; .124]	.049 (.019) [.008; .089]	.068 (.018) [.030; .102]	.021 (.030) [-.036; .080]	.137 (.024) [.089; .183]
Homelessness[a]	.055 (.022) [.017; .105]	-.018 (.024) [-.067; .031]	-.018 (.023) [-.064; .031]	-.007 (.027) [-.058; .051]	-.029 (.024) [-.073; .020]	.131 (.043) [.053; .214]	.103 (.035) [.038; .174]

Substance Abuse Referral[a]	.015 (.021) [-.023;.058]	-.009 (.024) [-.053; .037]	-.088 (.021) [-.130; -.047]	.087 (.028) [.036; .148]	.005 (.023) [-.041; .053]	.064 (.040) [-.013; .144]	.048 (.033) [-.015; .111]
Multiple Placement Episodes[d]	-.016 (.021) [-.059;.026]	.081 (.027) [.031; .134]	.080 (.025) [.033; .132]	-.044 (.028) [-.094; .009]	-.039 (.026) [-.087; .008]	.074 (.042) [-.007; .156]	.000 (.034) [-.064; .068]
Connection to Supportive[a] Adult	.018 (.004) [-.003;.013]	-.009 (.007) [-.023; .004]	-.002 (.005) [-.013; .009]	-.010 (.007) [-.025; .005]	.004 (.005) [-.005; .013]	-.002 (.009) [-.022; .014]	-.009 (.009) [-.029; .007]
Reason for Referral[e]	.072 (.022) [.036; .121]	.074 (.026) [.026; .124]	.133 (.024) [.087; .180]	.034 (.030) [-.022; .087]	.152 (.024) [.104; .199]	.078 (.039) [-.009; .156]	.090 (.033) [.022; .155]
Academic Services[e]	.036 (.014) [-.003;.051]	-.014 (.016) [-.045; .014]	-.030 (.015) [-.059; -.003]	-.020 (.016) [-.051; .010]	-.007 (.015) [-.038; .022]	-.046 (.025) [-.091; .002]	.048 (.022) [.006; .087]
Employment Services	-.009 (.013) [-.033;.021]	-.047 (.015) [-.076; -.018]	-.060 (.014) [-.086; -.034]	-.013 (.016) [-.043; .015]	-.047 (.014) [-.076; -.021]	-.025 (.023) [-.068; .021]	-.007 (.019) [.028; -.007]

Relationship between Intermediary Mediators and Outcome	Employed β (SE) BC 95%CI
Incarceration[a]	-.061 (.019) [-.103; -.030]

Group Home[b]	-.063 (.017) [-.099; -.034]	
Clinical Disability[e]	-.120 (.036) [-.190; -.048]	
Material Services[c]	.059 (.020) [.044; .126]	
Homelessness[a]	-.032 (.016) [-.067; .003]	
Substance Abuse Referral[a]	-.019 (.017) [-.054; .013]	
Multiple Placement Episodes[d]	-.076 (.015) [-.107; -.049]	
Connection to Supportive Adult[a]	.005 (.068) [-.119; .151]	
Reason for Referral	-.001 (.016) [-.033; .029]	
Academic Services[e]	.030 (.031) [-.006; .115]	
Employment Services[e]	.007 (.032) [-.057;.074]	
Relative Indirect Effects		Intersectional Identity→ Intermediary Determinant→ Employed[d]

Intermediary Determinant	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Incarceration[a]	.008 (.003) [.004; .016]	.001 (.002) [-.002; -.005]	.006 (.002) [.004; .014]	.000 (.002) [-.004; .004]	.010 (.004) [.006; .022]	-.001 (.003) [-.008; .004]	.010 (.003) [.004; .016]
Group Home[b]	.007 (.003) [.004; .015]	-.001 (.002) [-.005; .002]	.005 (.002) [.003; .013]	.000 (.002) [-.004; .003]	.007 (.002) [.005; .017]	.002 (.003) [.000; .012]	.012 (.004) [.006; .019]
Clinical Disability[e]	.002 (.001) [.000; .006]	.002 (.002) [.000; .006]	.003(.002) [.001; .008]	.002 (.002) [.000; .007]	.003 (.002) [.001; .008]	.001 (.002) [-.003; .006]	.002 (.002) [.001; .010]
Material Services[c]	.003 (.002) [.001; .008]	.002 (.002) [-.001; .007]	.005(.019) [.003; .013]	.002 (.002) [.001;.008]	.004 (.002) [.002; .010]	.001 (.003) [-.004; .007]	.005 (.003) [.005; .019]
Homelessness[a]	-.002 (.001) [-.006; .000]	.000 (.001) [-.001; .003]	.000 (.024) [-.001; .003]	.000 (.001) [-.002; .002]	.001 (.001) [-.001;.003]	-.002 (.003) [-.011; .000]	-.002 (.002) [-.009; .000]
Substance Abuse Referral[a]	.000 (.001) [-.002; .001]	.000 (.001) [-.001; .002]	.001(.021) [-.001; .005]	-.001 (.002) [-.006; .001]	.000 (.001) [-.002;.001]	-.001 (.002) [-.005; .001]	.000 (.001) [-.004; .001]

Multiple Placement Episodes[d]	.001(.002) [-.002; .005]	.000 (.002) [-.001; .002]	-.005 (.025) [-.012; .002]	.002 (.002) [-.001; .008]	.002 (.002) [-.001;.007]	-.002 (.003) [-.013; .000]	.000 (.003) [-.005; .006]
Connection to Supportive Adult[a]	.000 (.000) [-.001; .001]	-.004 (.001) [-.002;.001]	-.000 (.005) [-.001; .001]	.000 (.001) [-.002; .001]	.001 (.000) [-.001;.001]	.00 (.001) [-.002; .001]	.000 (.001) [-.002; .002]
Reason for Referral	.001 (.001) [.000; .004]	.000 (.001) [-.003;.002]	.000 (.024) [-.004; .004]	.000 (.001) [-.002; .002]	.001 (.002) [-.005;.005]	.000 (.001) [-.003;.003]	.000 (.002) [-.004 .003]
Academic Services[c]	.001(.001) [.000;.004]	.000 (.001) [-.003;.001]	-.001 (.014) [-.005; .000]	-.001 (.001) [-.004;.001]	.001 (.001) [-.003;.001]	.001 (.002) [.000; .007]	.001 (.002) [.000; .007]
Employment Services[c]	.000 (.001) [-.001;.001]	.000 (.002) [-.004;.003]	-.001(.002) [-.005; .003]	.000 (.001) [-.002; .001]	.001 (.002) [-.004;.003]	-000 (.001) [-.002; .001]	.000 (.001) [-.002; .001]

Notes. $\chi^2(55, 4657) = 3376.784$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p \leq .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 22. Results of Likelihood-Ratio Test for Nested Models of Aim III:H1- Intersectionality x Full- or Part-Time Employment at Age 21

Model	Max. Log-Likelihood	χ^2	DF	Pr (> Chi.Sq)
M1.1 (Full)	-88335		107	
M1.2 (Restricted)	-12764	12142	53	> .000

Notes. Bold value represents significant ($p < .05$) difference.

Table 23. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Restricted Model (M1.2)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male β (SE) [95%CI]	Other Female β (SE) [95%CI]
Intermediary Determinant							
Incarceration[a]	-.138 (.022) [-.182, -.092]	-.017 (.028) [-.072; .033]	-.125 (.024) [-.168, -.080]	.007 (.029) [-.049, .065]	-.219 (.023) [-.265, -.170]	.029 (.043) [-.053, .118]	-.148 (.032) [-.214, -.084]
Group Home[b]	-.131 (.022) [-.177, -.088]	.016 (.027) [-.037, .069]	-.107 (.024) [-.152, -.063]	.009 (.030) [-.048, .064]	-.150 (.024) [-.198, -.103]	-.088 (.040) [-.168, .007]	-.176 (.031) [-.236, -.112]
Clinical Disability[e]	-.018 (.011) [-.039, .002]	-.019 (.012) [-.043, .006]	-.033 (.010) [-.055, -.013]	-.026 (.012) [-.049, .003]	-.035 (.010) [-.056, -.015]	-.012 (.018) [-.047, .027]	-.041 (.012) [-.063, -.017]
Multiple Placement Episodes[d]	-.018(.022) [-.061; .025]	.081 (.026) [.027; .134]	.080 (.025) [.030;.130]	-.044 (.027) [-.100; .008]	.068 (.024) [.033; .099]	.074 (-.041) [-.012; .153]	.000 (.033) [-.066; .062]
Material Services[c]	.049 (.017) [.016, .082]	.028 (.019) [-.011, .066]	.088 (.019) [.051, .124]	.049 (.019) [.009, .087]	.068 (.017) [.033, .099]	.021 (.032) [-.041, .082]	.137 (.023) [.088, .183]
Relationship between Intermediary Mediators and Outcome	Employed						

	β (SE) [95%CI]
Incarceration[a]	-.089 (.017) [-.120; -.058]
Group Home[b]	-.076 (.017) [-.110; -.044]
Clinical Disability[e]	-.120 (.038) [-.195; -.044]
Multiple Placement Episodes[d]	-.081 (.015) [-.111; -.051]
Material Services[c]	.086 (.020) [.043; .126]

Relative Indirect Effects[*] Intersectional Identity→ Intermediary Determinant→ Employed

	NH White Female	NH Black Male	NH Black Female	Hispanic Male	Hispanic Female	Other Male[f]	Other Female[f]
Intermediary Determinant	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]
Incarceration[a]	.011 (.003) [.007, .018]	.001(.002) [-.003,.007]	.009 (.003) [.006, .018]	.000 (.003) [-.006, .004]	.023 (.004) [.013, .028]	-.002(.004) [-.011, .005]	.012 (.003) [.007, .021]
Group Home[b]	.010 (.003) [.005, .016]	-.001(.002) [-.006,.003]	.009 (.003) [.008, .014]	.000 (.002)	.016 (.003)	-.006 (.003)	.011 (.004) [.006, .022]

				[-.005, .004]	[.006, .018]	[.001, .015]	
Clinical Disability[e]	.002 (.002) [.000, .006]	.001 (.002) [-.001,.006]	.004 (.002) [.001, .008]	.002 (.002) [.000, .007]	.004 (.002) [.001, .008]	.001 (.002) [-.003, .006]	.005 (.002) [.001, .009]
Multiple Placement Episodes[d]	.002 (.002) [-.002; .005]	-.007 (.002) [-.012; -.002]	-.006 (.002) [-.012; -.002]	.004 (.002) [-.012; .008]	.003 (.002) [.000; .008]	-.006 (.004) [-.013; .001]	.000 (.003) [-.005; .006]
Material Services[c]	.004 (.002) [.001, .008]	.002 (.002) [-.001, .006]	.007 (.002) [.003, .013]	.004 (.002) [.001, .008]	.005 (.002) [.002, .010]	.001(.003) [-.003, .007]	.011 (.004) [.005, .019]

Notes. $\chi^2(10, 4657) = 484.552$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p \leq .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 24. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Full Model (M2.1)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Intermediary Determinant							
Incarceration[a]	-.138 (.022) [-.180; -.093]	-.017 (.026) [-.070; .032]	-.125 (.024) [-.171; -.079]	.007 (.029) [-.047; .063]	-.219 (.023) [-.263; -.176]	.012 (.041) [-.052; .106]	-.148 (.031) [-.208; -.088]
Group Home[b]	-.131 (.022) [-.173; -.086]	.016 (.026) [-.033; .065]	-.107 (.024) [-.156; -.059]	.009 (.029) [-.048; .070]	-.150 (.023) [-.196; -.105]	-.035 (.041) [-.163; .000]	-.176 (.030) [-.235; -.119]
Clinical Disability[e]	-.018 (.010) [-.039; .001]	-.019 (.012) [-.042; .004]	-.033 (.010) [-.053; -.012]	-.026 (.012) [-.048; -.002]	-.035 (.011) [-.056; -.015]	-.012 (.019) [-.047; .026]	-.049 (.012) [-.065; -.017]
Material Services[c]	.049 (.017) [.012; .080]	.028 (.020) [-.009; .069]	.088 (.019) [.049; .124]	.049 (.020) [.008; .089]	.068 (.018) [.030; .102]	.011 (.029) [-.036; .080]	.090 (.024) [.089; .183]
Homelessness[a]	.061 (.022) [.017; .105]	-.018 (.025) [-.067; .031]	-.018 (.024) [-.064; .031]	-.007 (.028) [-.058; .051]	-.029 (.023) [-.073; .020]	.131 (.042) [.053; .214]	.103 (.035) [.038; .174]

Substance Abuse Referral[a]	.015 (.021) [-.023; .058]	-.009 (.023) [-.053; .037]	-.088 (.021) [-.130; -.047]	.087 (.028) [.036; .140]	.005 (.024) [-.041; .053]	.027 (.040) [-.013; .144]	.025 (.033) [-.015; .111]
Multiple Placement Episodes[d]	-.018 (.021) [-.059; .026]	.081 (.027) [.031; .134]	.080 (.025) [.033; .132]	-.044 (-.026) [-.094; .009]	-.039 (.024) [-.087; .008]	.029 (.041) [-.007; .156]	.000 (.033) [-.064; .068]
Connection to Supportive Adult[a]	.005 (.004) [-.003; .013]	-.009 (.007) [-.023; .004]	-.002 (.005) [-.013; .009]	-.010 (.008) [-.025; .005]	.004 (.005) [-.005; .013]	-.003 (.009) [-.022; .014]	-.019 (.009) [-.029; .007]
Reason for Referral	.080 (.022) [.036; .121]	.074 (.026) [.026; .124]	.133 (.024) [.087; .180]	.034 (.028) [-.022; .087]	.112 (.024) [.104; .199]	.031 (.041) [-.009; .156]	.090 (.034) [.022; .155]
Academic Services[c]	.024 (.014) [-.003;.051]	-.014 (.015) [-.045; .014]	-.030 (.014) [-.059; -.003]	-.020 (.016) [-.051; .010]	-.009 (.015) [-.038; .022]	-.031 (.024) [-.091; .002]	.039 (.021) [.006; .087]
Employment Services[c]	-.006 (.013) [-.033; .021]	-.047 (.014) [-.076; -.018]	-.060 (.014) [-.086; -.034]	-.013 (.015) [-.043; .015]	-.061 (.014) [-.076; -.021]	-.017 (.023) [-.068; .021]	-.006 (.019) [.028; -.007]

Relationship between Intermediary Mediators and Outcome	High School Diploma or GED
	β (SE)

	BC 95%CI
Incarceration[a]	-.066 (.016) [-.099; -.035]
Group Home[b]	-.032 (.014) [-.060; -.005]
Clinical Disability[e]	-.015 (.034) [-.085; .049]
Material Services[c]	.027 (.019) [-.012; .064]
Homelessness[a]	-.088 (.015) [-.119; -.058]
Substance Abuse Referral[a]	-.018 (.015) [-046; .013]
Multiple Placement Episodes[d]	-.057 (.013) [-.086; -.013]
Connection to Supportive Adult[a]	.038 (.063) [-.084; .032]
Reason for Referral	-.034 (.014) [-.060; -.006]
Academic Services[c]	.060 (.028) [.005; .116]

Employment Services[c]	.021 (.029) [-.035;.078]

Relative Indirect Effects[*] Intersectional Identity→ Intermediary Determinant→ High School Diploma or GED

Intermediary Determinant	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Incarceration[a]	.009 (.003) [.004; .016]	.001 (.002) [-.002; .005]	.008 (.003) [.004; .014]	.000 (.002) [-.005; .004]	.014 (.004) [.007; .023]	-.002 (.003) [-.008; .004]	.010 (.003) [.004; .017]
Group Home[b]	.004 (.001) [.001; .008]	-.001 (.001) [-.003; .001]	.003 (.002) [.000; .007]	.000 (.001) [-.003; .002]	.005 (.002) [.001; .010]	.003 (.002) [.000; .007]	.006 (.003) [.001; .011]
Clinical Disability[d]	.000 (.001) [-.001; .002]	.000 (.001) [-.001; .002]	.000 (.001) [-.002; .003]	.000 (.001) [-.002; .003]	.001 (.001) [-.002; .003]	.000 (.001) [-.001; .002]	.001 (.001) [-.002; .004]
Material Services[c]	.001 (.002) [-.001; .004]	.001 (.001) [-.001; .003]	.002 (.002) [-.001; .006]	.001 (.001) [-.001; .004]	.002 (.001) [-.001; .005]	.001 (.001) [-.001; .003]	.004 (.003) [-.002; .009]
Homelessness[a]	-.005 (.001) [-.010; -.001]	.002 (.002) [-.003; .006]	.002 (.002) [-.003; .006]	.001 (.002) [-.004; .006]	.003 (.002) [-.002; .007]	-.012 (.004) [-.021; -.004]	.009 (.003) [.017; .003]

Substance Abuse Referral	.000 (.001) [-.002; .001]	.000 (.001) [-.001; .002]	.002 (.001) [-.001; .005]	-.002 (.001) [-.005; .001]	.000 (.001) [-.001; .001]	-.001 (.001) [-.005; .001]	-.001 (.001) [-.003; .001]
Multiple Placement Episodes[d]	.001 (.001) [-.002; .004]	-.005 (.002) [-.009; -.001]	-.005 (.002) [-.009; -.002]	.003 (.002) [-.001; .006]	.002 (.002) [-.001; .006]	-.004 (.003) [-.010; .000]	.000 (.002) [-.004; .004]
Connection to Supportive Adult[a]	.000 (.000) [-.001; .001]	.000 (.001) [-.002; -.001]	.000 (.000) [-.001; .001]	.000 (.001) [-.002; .001]	.000 (.000) [-.001; .001]	.000 (.001) [-.002; .001]	.000 (.001) [-.003; .001]
Reason for Referral	.003 (.001) [-.006; .000]	.000 (.001) [-.006; .000]	-.005 (.002) [-.009; -.001]	-.001 (.001) [-.002; -.001]	-.005 (.002) [-.010; .001]	-.003 (.001) [-.007; .000]	-.003 (.002) [-.007; .000]
Academic Services[c]	.001 (.001) [.000; .004]	.000 (.001) [-.003; .001]	-.002 (.001) [-.005; .000]	-.001 (.001) [-.004; .001]	.000 (.001) [-.003; .001]	-.003 (.002) [-.008; .000]	.000 (.001) [-.002; .001]
Employment Services[c]	.000 (.000) [-.001;.001]	.000 (.001) [-.004; .002]	-.001 (.002) [-.005; .002]	.000 (.001) [-.002; .001]	-.001 (.001) [-.004;.002]	-.001 (.001) [-.003;.001]	.000 (.001) [-.002;.001]

Notes. $\chi^2(55, 4657) = 3376.784$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p \leq .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 25. Results of Likelihood-Ratio Test for Nested Models of Aim III:H2- Intersectional Identity x Highest Education Credential Attained is High School Diploma or GED at age 21

Model	Max. Log-Likelihood	χ^2	DF	Pr (> Chi.Sq)
M2.1 (Full)	-18217		107	
M2.2 (Restricted)	-18277	119.76	62	> .000

Notes. Bold value represents significant ($p < .05$) difference

Table 26. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Restricted Model (M2.2)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female	NH Black Male	NH Black Female	Hispanic Male	Hispanic Female	Other Male[f]	Other Female[f]
	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]
Intermediary Determinant							
Incarceration[a]	-.138 (.021) [-.181, -.096]	-.012 (.026) [-.070, .032]	-.101 (.024) [-.170, -.079]	.004 (.029) [-.047, .064]	-.166 (.023) [-.263, -.175]	.012 (.041) [-.054, .107]	-.148 (.031) [-.209, -.086]
Group Home[b]	-.131 (.022) [-.175, -.088]	.012 (.026) [-.033, .064]	-.084 (.024) [-.155, -.060]	.006 (.029) [-.047, .068]	-.112 (.023) [-.197, -.105]	-.035 (.041) [-.163, -.001]	-.176 (.030) [-.235, -.118]
Homelessness[a]	.061 (.022) [.015, .084]	.055 (.027) [.027, .133]	.061 (.025) [.032, .126]	-.044 (.027) [-.095, .008]	-.039 (.025) [-.088, .010]	.074 (.043) [-.005, .156]	.000 (.034) [-.066, .071]
Multiple Placement Episodes[d]	-.018 (.022) [.016;.102]	-.013 (.024) [-.033, .064]	-.014 (.024) [-.066, .026]	-.007 (.026) [-.059, .045]	-.039 (.024) [-.078, .017]	.131 (.043) [.047, .216]	.103 (.035) [.036, .172]
Reason for Referral	.080 (.023) [.033; .133]	.052 (.026) [.022, .127]	.104 (.024) [.085, .180]	.034 (.029) [-.023, .093]	.152 (.024) [.103, .197]	.078 (.041) [-.005, .154]	.090 (.034) [.019, .157]
Academic Services[c]	.024 (.014) [-.005, .053]	-.016 (.015) [-.044, .015]	-.039 (.014) [-.060, -.003]	-.021 (.016) [-.052, .010]	-.009 (.015) [-.037, .022]	-.031 (.023) [-.092, -.002]	.039 (.021) [.005, .086]

Relationship between Intermediary Mediators and Outcome	High School or GED β (SE) [95%CI]
Incarceration[a]	-.072 (.015) [-.123; -.064]
Group Home[b]	-.037 (.014) [-.034; -.011]
Homelessness[a]	-.089 (.014) [-.172; -.062]
Multiple Placement Episodes	-.064 (.014) [-.086; -.031]
Reason for Referral	-.034 (.014) [-.062; -.006]
Academic Services[c]	.048 (.022) [.026; .119]

Relative Indirect Effects[*]	Intersectional Identity→ Intermediary Determinant→ High School or GED						
	NH White Female	NH Black Male	NH Black Female	Hispanic Male	Hispanic Female	Other Male	Other Female
Intermediary Determinant	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]
Incarceration[a]	.010 (.003)	.001(.002)	.008 (.003)	.000 (.003)	.012 (.004)	-.001(.004)	.011 (.003)

	[.003, .020]	[-.003,.007]	[.007, .018]	[-.006, .004]	[.013, .029]	[-.010, .004]	[.005, .018]
Group Home[b]	.004 (.002) [.001, .010]	.001 (.001) [-.003, .001]	.003 (.002) [.001, .008]	.000 (.001) [-.003, .002]	.005 (.002) [.002, .011]	.001 (.002) [.000, .008]	.006 (.003) [.001, .012]
Homelessness[a]	-.004 (.002) [-.010, -.001]	-.005 (.003) [-.013, -.002]	-.005 (.003) [-.013, -.003]	.003 (.003) [-.001, .009]	.003 (.002) [-.001, .008]	-.003 (.004) [-.015, .000]	.000 (.003) [-.006, .006]
Multiple Placement Episodes	.001 (.001) [.001, .010]	.001 (.001) [-.002, .004]	.001 (.001) [-.001, .004]	.001 (.002) [-.003, .004]	.001 (.001) [-.001, .005]	-.003 (.003) [-.014, -.002]	-.008 (.002) [-.012, -.002]
Reason for Referral	-.003 (.001) [-.006, .001]	-.002 (.001) [-.006, .000]	-.004 (.002) [-.009, -.001]	-.001 (.001) [-.004, .001]	-.005 (.002) [-.010, -.001]	-.001 (.002) [-.007, .000]	-.002 (.002) [-.007, -.001]
Academic Services[c]	.001 (.001) [.000, .005]	-.001 (.001) [-.006, .001]	-.003 (.001) [-.006, -.001]	-.001 (.001) [-.005, .001]	.000 (.001) [-.003, .002]	-.002 (.002) [-.008, .000]	.003 (.002) [.000, .008]

Notes. $\chi^2(15, 4657) = 826.463$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p \leq .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 27. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Full Model (M3.1)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Intermediary Determinant							
Incarceration[a]	-.138 (.022) [-.183; -.095]	-.017 (.027) [-.071; .033]	-.125 (.024) [-.174; -.078]	.007 (.029) [-.049; .063]	-.219 (.023) [-.263; -.171]	.029 (.041) [-.056; .105]	-.148 (.032) [-.212; -.088]
Group Home	-.131 (.022) [-.177; -.087]	.016 (.027) [-.039; .070]	-.107 (.024) [-.154; -.061]	.009 (.028) [-.045; .069]	-.150 (.025) [-.198; -.100]	-.088 (.040) [-.166; -.007]	-.176 (.031) [-.236; -.114]
Clinical Disability	-.018 (.010) [-.040; .001]	.019 (.012) [-.042; .005]	-.033 (.010) [-.053; -.014]	-.025 (.012) [-.047; -.003]	-.035 (.010) [-.055; -.015]	-.012 (.018) [-.045; .024]	-.041 (.012) [-.063; -.017]
Material Services	.049 (.017) [.018; .082]	.028 (.019) [-.008; .067]	.088 (.018) [.053; .124]	.049 (.020) [.010; .090]	.068 (.018) [.033; .102]	.021 (.031) [-.035; .083]	.137 (.024) [.089; .184]
Homelessness	.061 (.022) [.017;.102]	-.018 (.025) [-.070; .027]	-.018 (.023) [-.065; .026]	-.007 (.028) [-.062; .050]	-.029 (.023) [-.078; .018]	.131 (.043) [.042; .213]	.103 (.035) [.036; .172]
Substance Abuse Referral	.015 (.021) [-.025;.057]	-.009 (.025) [-.060; .044]	-.088 (.021)	.087 (.028) [.034; .142]	.005 (.024) [-.042; .052]	.064 (.041) [-.019; .148]	.048 (.033) [-.012; .113]

			[-.130; -.047]				
Multiple Placement Episodes	-.018 (.021) [-.060; .023]	.081 (.025) [.028; .136]	.080 (.025) [.029; .124]	-.044 (.028) [-.099; .013]	-.039 (.024) [-.085; .007]	.074 (.042) [-.008; .155]	.000 (.034) [-.068; .068]
Connection to Supportive Adult	.005 (.004) [-.004; .013]	-.009 (.007) [-.023; .003]	-.002 (.005) [-.013; .009]	-.010 (.008) [-.026; .004]	.004 (.005) [-.005; .013]	-.002 (.009) [-.021; .013]	-.009 (.009) [-.029; .008]
Reason for Referral	.080 (.022) [.040;.124]	.074 (.026) [.024; .128]	.133 (.024) [.086; .181]	.034 (.028) [-.019; .089]	.152 (.025) [.105; .202]	.078 (.040) [.005; .164]	.090 (.034) [.021; .160]
Academic Services	.024 (.014) [-.002; .053]	-.014 (.016) [-.046; .018]	-.030 (.014) [-.058; -.001]	-.020 (.016) [-.051; .012]	-.007 (.015) [-.037; .026]	-.046 (.023) [-.090; .001]	.048 (.020) [.009; .090]
Employment Services	-.006 (.013) [-.030;.020]	-.047 (.015) [-.074; -.018]	-.060 (.014) [-.086; -.029]	-.013 (.016) [-.044; .020]	-.047 (.014) [-.074; -.020]	-.025 (.023) [-.067; .021]	-.007 (.019) [-.043; .029]

Relationship between Intermediary Mediators and Outcome	Postsecondary or Vocational β (SE) BC 95%CI

Intermediary Determinant	
Incarceration[a]	-.009 (.008) [-.026; .008]
Group Home	-.022 (.008) [-.038; -.005]
Clinical Disability	-.016 (.018) [-.197; .062]
Material Services	.045 (.012) [.023; .069]
Homelessness	-.012 (.009) [-.144; .001]
Substance Abuse Referral	-.007 (.009) [-.142; .003]
Multiple Placement Episodes	.005 (.008) [-.021; .493]
Connection to Supportive Adult	.037 (.020) [-.113; .127]
Reason for Referral	.008 (.008) [-.153; .198]
Academic Services	.008 (.018) [-.245; .138]

Employment Services	-.012 (.017) [-.057;.074]

Relative Indirect Effects* Intersectional Identity→ Intermediary Determinant→ Postsecondary or Vocational

Intermediary Determinant	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male β (SE) [95%CI]	Other Female β (SE) [95%CI]
Incarceration[a]	.001 (.002) [.001; .004]	.000 (.000) [.000; .001]	.001 (.001) [-.001; .003]	.002 (.000) [-.001;.001]	.002 (.002) [-.002;.006]	.000 (.001) [-.002;.001]	.001 (.001) [-.001;.004]
Group Home	.003 (.001) [.001; .005]	.001 (.001) [-.002; .001]	.002 (.001) [.001; .005]	.003 (.001) [-.002;.001]	.003 (.001) [.001;.006]	.002 (.001) [.000;.004]	.004 (.002) [.001; .007]
Clinical Disability	.000 (.001) [.000; .001]	.000 (.000) [.000; .001]	.001 (.001) [-.001; .002]	.001 (.001) [-.001;.002]	.001 (.001) [-.001;.002]	.000 (.000) [-.001;.001]	.001 (.001) [-.001; .002]
Material Services	.001 (.000) [.001; .004]	.001 (.001) [.000; .003]	.004 (.001) [.002; .007]	-.003 (.001) [.000; .005]	.003 (.001) [.001;.015]	.001 (.001) [-.002;.004]	.006 (.002) [.003;.010]
Homelessness	.001 (.000) [-.002; .000]	.000 (.000) [.000; .001]	.000(.000) [.000; .001]	.000 (.000) [-.001;.001]	.000 (.000) [.000;.001]	-.002 (.001) [-.004;.001]	-.001 (.001) [-.004;.000]
Substance Abuse Referral	.000 (.000) [-.001; .000]	.000 (.000) [.000; .001]	.001 (.001) [-.001; .002]	.001 (.001) [-.002;.001]	.000 (.000) [-.001;.000]	.000 (.001) [-.002;.001]	.000(.001) [-.002;.001]

Multiple Placement Episodes	.000 (.000) [-.001; .000]	.000 (.001) [-.001; .002]	.000 (.001) [-.001; .002]	.001 (.000) [-.001;.001]	.000 (.000) [-.001;.001]	.000 (.001) [-.001;.002]	.000 (.000) [-.001;.001]
Connection to Supportive Adult	.000 (.000) [.001; .000]	.001 (.001) [-.001; .000]	.000 (.000) [-.001; .000]	.001 (.000) [-.001;.000]	.000 (.000) [.000;.001]	.000 (.000) [-.001;.001]	.000(.000) [-.001; .000]
Reason for Referral	.001 (.001) [-.001; .002]	.000 (.000) [-.001; .002]	.001 (.001) [-.001; .003]	.001 (.000) [.000; .001]	.001 (.001) [-.001;.004]	.001 (.001) [-.001;.003]	.001 (.001) [-.001;.003]
Academic Services	.001 (.000) [-.001; .001]	.000 (.001) [-.001; .001]	.000 (.001) [-.002; .001]	.000 (.000) [-.001; .001]	.000 (.000) [-.001;.001]	.000 (.001) [-.002;.001]	.000 (.001) [-.001;.003]
Employment Services	.000 (.001) [.000;.001]	.001 (.001) [-.001; .002]	.001 (.001) [-.001; .003]	.001 (.000) [.000; .001]	.000 (.001) [-.001;.003]	.000 (.001) [-.001;.002]	.000 (.000) [-.001;.001]

Notes. $\chi^2(55, 4657) = 3376.784$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p \leq .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 28. Results of Likelihood-Ratio Test for Nested Models of Aim III:H3- Intersectional Identity x Highest Education Credential Attained is Postsecondary Degree or Vocational Degree or Certificate at age 21

Model	Max. Log-Likelihood	χ^2	DF	Pr(> Chi.Sq)
M3.1 (Full)	-15989.5		107	
M3.2 (Restricted)	-4999.5	21980	26	> .000

Notes: Bold values indicate statistical significance at $p < .05$.

Table 29. Path Coefficients and Indirect Effects for Mediators and Outcome Variables for Restricted Model (M3.2)

	Intersectional Identity						
Relationship between Intersectional Identities and Mediators	NH White Female β (SE) [95%CI]	NH Black Male β (SE) [95%CI]	NH Black Female β (SE) [95%CI]	Hispanic Male β (SE) [95%CI]	Hispanic Female β (SE) [95%CI]	Other Male[f] β (SE) [95%CI]	Other Female[f] β (SE) [95%CI]
Intermediary Determinant							
Group Home	-.131 (.022) [-.177, -.089]	.016 (.028) [-.038, .068]	-.107 (.025) [-.156, -.058]	.009 (.030) [-.050, .067]	-.150 (.025) [-.202, -.102]	.088 (.040) [-.168, -.013]	-.176 (.031) [-.236, -.116]
Material Services	.049 (.017) [.015, .083]	.028 (.020) [-.008, .068]	.088 (.018) [.053, .125]	.049 (.020) [.011, .087]	.068 (.018) [.034, .105]	.021 (.030) [-.037, .079]	.137 (.025) [.091, .190]

Relationship between Intermediary Mediators and Outcome	Postsecondary or Vocational β (SE) BC 95%CI
Group Home	-.024 (.008) [-.039; -.008]
Material Services	.044 (.012) [.020; .068]

Relative Indirect Effects[*]	Intersectional Identity→ Intermediary Determinant→ Postsecondary or Vocational[d]						
	NH White Female	NH Black Male	NH Black Female	Hispanic Male	Hispanic Female	Other Male	Other Female

Intermediary Determinant	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]	β (SE) [95%CI]
Group Home	.003 (.001) [.001, .006]	.000 (.001) [-.002, .001]	.003 (.001) [.001, .005]	.000 (.001) [-.002, .001]	.004 (.001) [.002, .007]	.002 (.001) [.000, .005]	.005 (.002) [.002, .008]
Material Services	.002 (.001) [.001, .004]	.001 (.001) [.000, .003]	.004 (.001) [.002, .007]	.002 (.001) [.000, .005]	.003 (.001) [.001, .006]	.001 (.001) [-.002, .004]	.006 (.002) [.003, .011]

Notes. $\chi^2(1, 4657) = 31.194$, $p < .05$; Results displayed reflect standardized coefficients and bias-corrected 95% confidence intervals (1,000 bootstrapped samples); Bold values represent significant ($p < .05$) pathway coefficient; a = at least once through age 19; b = at age 17; c = cumulative rate through age 19; d = more than 5 by age 19; e = at least one diagnosis on file by age 19; f = American Indian or Alaska Native, Hawaiian or other Pacific Islander, or Two or more races; NH = Non-Hispanic; BM = Black male; BF = Black female; HM = Hispanic male of any race; HF = Hispanic female of any race.

Table 30. Relative Total and Direct Effect Results: Intersectional Identity x Full- or Part-Time Employment at age 21 (M1.2)

DV	IV	Path	β[a] (SE)	95%CI	DV	IV	Path	β[a] (SE)	95%CI
FT/PT Employment					FT/PT Employment				
	NH White Female	c_1	.007 (.023)	-.038., .053		NH White Female	c'_1	-.003 (.023)	-.049., .041
	NH Black Male	c_1	-.029 (.028)	-.099., .009		NH Black Male	c'_1	-.026 (.029)	-.094, .017
	NH Black Female	c_1	-.016 (.024)	-.068., .026		NH Black Female	c'_1	-.018 (.025)	-.071, .023
	Hispanic Male any race	c_1	.062 (.027)	.048., .157		Hispanic Male any race	c'_1	.060 (.028)	.044, .156
	Hispanic Female any race	c_1	-.004 (.026)	-.057., .043		Hispanic Female any race	c'_1	-.017 (.026)	-.079, .025
	Other Male	c_1	-.023 (.043)	-.145., .025		Other Male	c'_1	-.019 (.042)	-.135, .032
	Other Female	c_1	.010 (.034)	-.044., .088		Other Female	c'_1	.005 (.035)	-.058, .078

Notes. Bold values indicate statistical significance at $p < .05$; a= relative to Non-Hispanic White Males; b= includes American Indian, Alaskan Native, Asian American, and Hawaiian Native or other Pacific Islander, or Two or more races; NH = Non-Hispanic.

Table 31. Relative Total and Direct Effect Results: Intersectional Identity x Highest Education Credential is High School Diploma or GED at age 21 (M2.2)

DV	IV	Path	β[a] (SE)	95%CI	DV	IV	Path	β[a] (SE)	95%CI
High School or GED Credential					High School or GED Credential				
	NH White Female	c_2	.012 (.020)	-.028., .052		NH White Female	c'_2	.002 (.020)	-.038, .042
	NH Black Male	c_2	.015 (.024)	-.027, .066		NH Black Male	c'_2	.019 (.024)	-.029, .065
	NH Black Female	c_2	-.008 (.023)	-.054, .036		NH Black Female	c'_2	-.019 (.023)	-.064, .025
	Hispanic Male any race	c_2	.018 (.025)	-.024, .079		Hispanic Male any race	c'_2	.027 (.024)	-.024, .079
	Hispanic Female any race	c_2	.036 (.022)	-.001, .090		Hispanic Female any race	c'_2	.029 (.022)	-.015, .075
	Other Male[b]	c_2	-.013 (.038)	-.106, .046		Other Male[b]	c'_2	-.028 (.039)	-.104, .047
	Other Female[b]	c_2	.014 (.029)	-.035, .084		Other Female[b]	c'_2	.016 (.030)	-.044, .074

Notes. Bold values indicate statistical significance at $p < .05$; a= relative to Non-Hispanic White Males; b= includes American Indian, Alaskan Native, Asian American, and Hawaiian Native or other Pacific Islander, or Two or more races; NH = Non-Hispanic

Table 32. Relative Total and Direct Effect Results: Intersectional Identity x Highest Education Credential is Postsecondary Education Degree or Vocational Degree or Certificate at age 21 (M3.2)

DV	IV	Path	β[a] (SE)	95%CI	DV	IV	Path	β[a] (SE)	95%CI
Postsecondary Degree or Vocational Degree or Certificate					Postsecondary Degree or Vocational Degree or Certificate				
	NH White Female	c_3	.013 (.013)	-.012, .039		NH White Female	c'_3	.009 (.013)	-.015, .035
	NH Black Male	c_3	-.019 (.014)	-.046, .009		NH Black Male	c'_3	-.019 (.013)	-.045, .009
	NH Black Female	c_3	.013 (.014)	-.016, .041		NH Black Female	c'_3	.010 (.014)	-.019, .037
	Hispanic Male any race	c_3	-.040 (.013)	-.066, -.015		Hispanic Male any race	c'_3	-.040 (.013)	-.066, -.015
	Hispanic Female any race	c_3	-.016 (.013)	-.041, .009		Hispanic Female any race	c'_3	-.020 (.013)	-.046, .004
	Other Male	c_3	-.030 (.018)	-.064, .010		Other Male	c'_3	-.032 (.019)	-.066, .007

Other Female	c_3	.010 (.021)	-.031, .054	Other Female	c'_3	.005 (.021)	-.037, .050

Notes. Bold values indicate statistical significance at $p < .05$; a= relative to Non-Hispanic White Males; b= includes American Indian, Alaskan Native, Asian American, and Hawaiian Native or other Pacific Islander, or Two or more races; NH = Non-Hispanic.

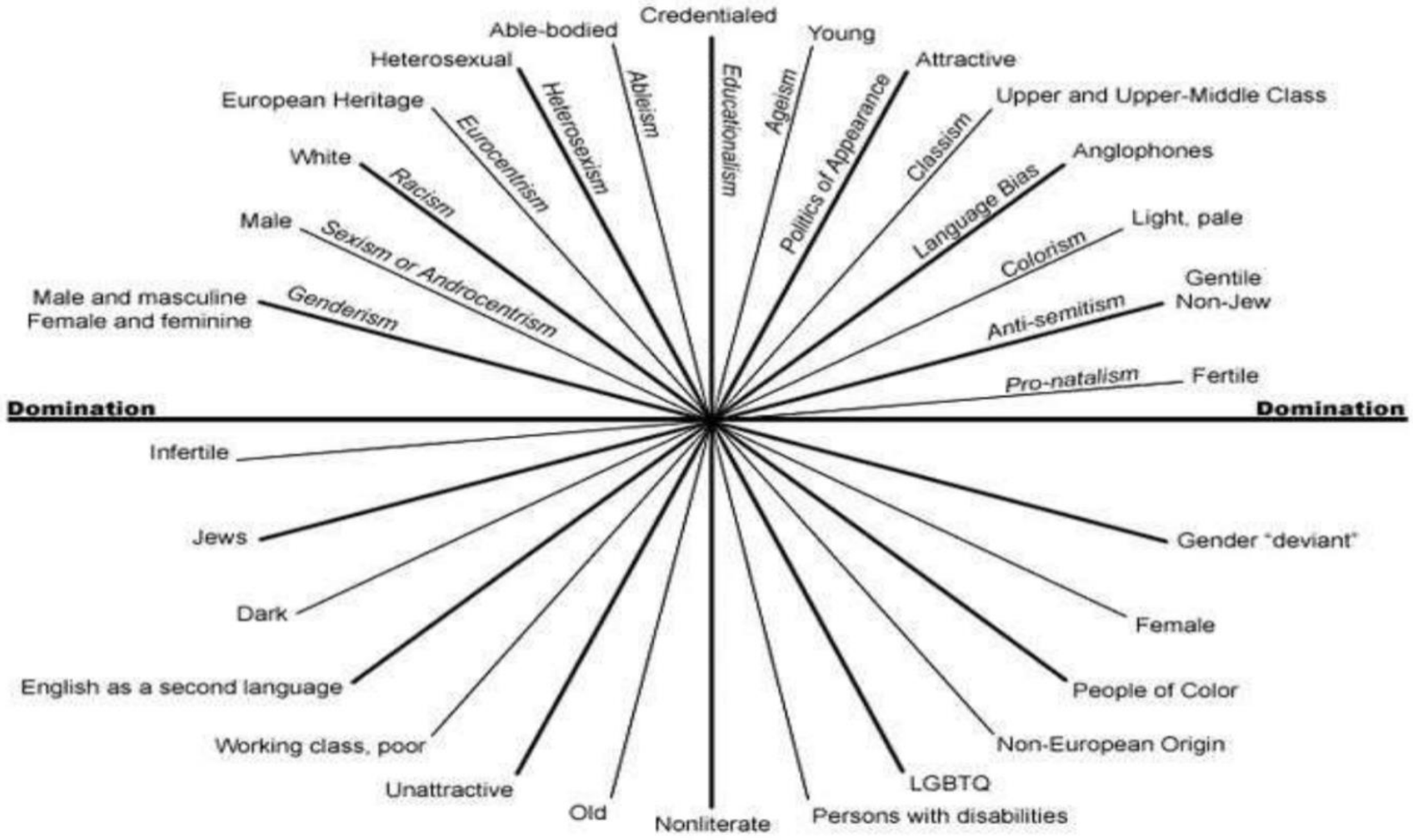

Figure 11. A model of the Matrix of Domination: Intersection axes of privilege, domination, and oppression. Adapted from Morgan, P. (1996): Describing the Emperor's New Clothes: Three Myths of Educational (In) Equality. The Gender Question in Education Theory, Pedagogy & Politics. Westview. Copyright Westview

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2007-2011	Rutgers University	M.A. Criminal Justice with Academic Distinction
2005-2007	Rowan University	B.A. Applied Sociology
2002-2005	Camden County College	A.S. Human Services

2017 Annual Conference Scholarship Recipient, National Alliance to End Homelessness

2005 President's List, Camden County College

2005 Camden County College, Scott Bonners Award -received for contribution to the Camden County College Child Care Center in conjunction with academic merit

2006 Rowan University with Delta Sigma Theta, Mr. Black Rowan 2006 Designee-recognition received for leadership within the community at large, and academic merit.

2007 Undergraduate Teaching Assistant, Rowan University, Applied Community Development

2010 Project Management Certification: Rutgers University School of Business

2011 Camden County Board of Social Services, Award of Excellence-presented for contribution to development of the Tyler Clementi, Suicide Prevention Event

2011 Rutgers University Graduate School, Completion with Distinction, presented in acknowledgement of outstanding Comprehensive Examination performance in Criminal Justice Research Methods, Social Policy Analysis, and Quantitative Data Analysis

2013 Rowan University Office of Senate, Courage in Adversity Medallion -commendation received for outstanding academic performance, individual character, and community service despite significantly adverse circumstances. Faculty Recommendation.

2016 Teaching Assistant, Florida International University, Medical Anthropology

2017 Graduate Teaching Assistant, Florida International University, Medical Sociology

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PUBLICATIONS AND PRESENTATIONS

Campbell, J. M. (in press). Economic Well Being of Youth who Transition from Foster Care Status: An Intersectional Perspective on Policy Planning, Adaptation, and Evaluation. Child Welfare League of America.

Huang, H., Li, Y., & Campbell, J. M. (2021). Protecting Aging out Foster Youth from Adverse Outcomes: Impacts of Cumulative Independent Living Service Experiences. Child Maltreatment.

McKinley-Campbell, J., (2017). The 1987 Independent Living Initiative: A National-Level Policy Action Discussion. Presented at Florida International University, School of Social Work

McKinley-Campbell, J., (2017). Safety, Permanency and Well-Being: A modern look at Social Work practice and Social Science research concerning older youth under the auspices of child welfare in the United States. Presented at Florida International University, School of Social Work

McKinley-Campbell, J., (2011). The Denial of Federal Benefits for First Time Non-Violent Offenders: An Ex-Post Policy Analysis. Presented at Rutgers University, Policy Analysis Presentation Seminar

McKinley-Campbell, J., (2007). Boys without Men: Self Concept Development of Adolescent Male Victims of Substance Abuse, Incarcerated Fathers. Presented at Rowan University, in partnership with Delta Sigma Theta Sorority & Rowan University Department of Sociology and Anthropology

McKinley-Campbell, J., (2010). Making Our Own Families: Examining LGBTQ Children and Youth's Channels of Resilience and Empowerment Focusing on the Concept of the "Gay Family". Presented at Rutgers University, Department of Childhood Studies

Assistant Project Manager Hurricane Katrina Relief Project, Rowan University with Xavier University, 2007

Panelist, "Disrupted Childhoods: Children of Women in Prison", Criminal Justice and Childhood Studies Interdepartmental Community Forum Series, 2011