CROSSOVER YOUTH PREVENTION: PREDICTORS OF YOUTH CROSSOVER FROM CHILD WELFARE TO JUVENILE JUSTICE

by

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Statement of Support

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April 24, 2018

Dedication

This dissertation research is dedication to my sons so that no child in foster care will endure what you have. I am proud of you.

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Chapter One:

Identifying Crossover Youth and Establishing a Theoretical Foundation

By some estimates, as many as 60% of youth in the juvenile justice system have previous experience in the child welfare system, with delinquency rates among youth in foster care about 50% higher than among youth not involved in foster care (Ryan & Testa, 2005; Sickmund & Puzzanchera, 2014). Identifying factors that impact crossing over from the child protective system into the juvenile justice system is essential to developing interventions targeting youth success and derailing the criminal pathway of many United States adolescents. Decades of research have shown that youth who enter foster care are at an increased risk for future involvement in the juvenile justice system (Barth, 1990; Dannerbeck-Janku & Jahui, 2010; English et al., 2002; Lee & Villagrana, 2015; Ryan, 2012). Despite this, most research has focused on what to do with foster youth once they are in the juvenile justice system, rather than how to identify them before they become involved in the juvenile justice system (Herz & Ryan, 2008). Furthermore, most studies occur at the local or state level as reflected in the literature review below. This dissertation, however, will combine two national data sets to help identify youth most at risk to cross from the foster care system to the juvenile justice system.

Persistent criminogenic behaviors spanning the life-course typically first manifest in adolescence (Moffitt, 1993). While not all juvenile offenders will become adult offenders, many adult offenders were also in the juvenile justice system at one point (Sickmund & Puzzanchera, 2014). Over-incarceration in adult facilities has become a growing concern, costing the United States nearly $40 billion a year, representing the fastest growing state budget item after Medicaid (Henrichson & Delaney, 2012). Decreasing the number of juvenile offenders may therefore also decrease the number of adult offenders and be one piece of a solution to the concern of over-incarceration and smart decarceration.

Crossover Youth

Youth in foster care have elevated risk levels for juvenile justice experience; yet, little is known about the factors that contribute to which youth may cross over and which youth may not (Herz & Ryan, 2008). One obstacle in research about this population is that the language used to describe them is not consistent. Many terms are used to describe youth who have experience in both foster care and juvenile justice: crossover youth, dually-adjudicated youth, dual-system youth, and cross-system youth (Ryan, Williams, & Courtney, 2013).

Many other terms have been used to describe youth who have experience in foster care and juvenile justice. Dually-involved youth are receiving simultaneous services from the child welfare and juvenile justice systems (Herz et al., 2012; Huang, Ryan, & Herz, 2012). The term dually-adjudicated refers to youth who have been formally processed by both systems and are under the supervision or care of one or both of the child welfare and juvenile justice systems (Herz et al., 2012). Cross-system and dual-system youth refer to youth who have involvement with more than one system of care, not necessarily child welfare and juvenile justice (Graves & Shelton, 2007).

Crossover Youth (CY) is often considered the broadest term, encompassing youth who have experience in foster care and experience in juvenile justice, even if those experiences do not coincide and regardless of which occurs first (Herz et al., 2012; Griffin, 2014). While their experience does not have to be simultaneous or even ordered (Lee & Villagrana, 2015), according to Huang, Ryan, and Herz (2012), most youth identified as CY begin in the foster care system and subsequently have juvenile justice experience. Because of the differing ways in which CY are categorized, no centralized reporting system exists for the collection of data regarding CY. Therefore, a precise number of affected youth is not known.

For the purposes of this research, the term Crossover Youth will be used throughout. Because the datasets for this research do not indicate the simultaneous involvement of youth in child welfare and juvenile justice, the broader umbrella term CY is most fitting. Further, in examining the literature on youth with involvement in foster care and juvenile justice, Crawford (forthcoming) found that the term Crossover Youth has become the term most commonly used in research when discussing youth who have involvement in both systems even when another term may be more precise.

Review of the Relevant Literature

Over 400,000 children and adolescents are in foster care in the United States (HHS, 2015). Approximately 1.7 million youth have delinquency cases processed through courts in the United States each year (Sickmund, Sladky, & Kang, 2013). To know which youth are more likely to cross over from foster care to juvenile justice, an assessment of risk factors is necessary. Factors that influence the relationship between child maltreatment and delinquency still remain unclear (Bender, 2010; Herz et al., 2010; Ryan et al., 2013; Ryan & Testa, 2005). Herz et al. (2012) cited this paucity of research to define risk factors for CY as a primary factor preventing child welfare agencies from implementing comprehensive screenings for risk of foster youth crossing over. To determine if an at-risk youth can be prevented from crossing over, child welfare systems need to screen youth to identify those most at risk in a consistent and systematic way, which has not yet begun in a comprehensive manner (Herz et al., 2012).

Risk factors

Certain risk factors are known to researchers already. Behavioral health concerns, such as mental health diagnosis or substance use history, have been noted to predict delinquent behavior among youth, with some researchers suggesting that behavioral health concerns may

stem from the experience of childhood maltreatment and delinquency, therefore serving as a potential bridge that links children who have been maltreated to delinquent behavior (Bender, 2010). This link has begun to be studied among CY. Herz and Ryan (2008) found that 90% of the CY in their sample from Los Angeles county had at least one behavioral health concern with 40% having a comorbid diagnosis. Herz & Fontaine (2013) found nearly two out of three CY had a mental health diagnosis, and an additional quarter of youth in their sample had substance use histories. Mental health concerns and substance use have been found at elevated levels among CY in multiple other studies (e.g.: Abbott & Barnett, 2015; Bender, 2010; Dannerbeck-Janku & Jahui, 2010; Dannerbeck-Janku, Peters, & Perkins, 2014; Herz, Ryan, & Bilchik, 2010; Mallett et al., 2011; Ryan, Williams, & Courtney, 2013).

A history of maltreatment is also a known risk factor for CY. Bilchik and Nash (2012) linked childhood maltreatment to adolescent delinquency. In examining maltreatment as a trauma, Ford, Grasso, Hawke, and Chapman (2013) found youth in juvenile justice with poly-victimization had higher levels of trauma and also more significant involvement in the juvenile justice system. Research appears to indicate the violence itself is a possible risk factor. Youth who experience childhood violence were found to have increased contact with juvenile justice systems compared to their peers (Adams, 2010). English et al. (2002) found that children who had been abused were as much as 11 times more likely to have later juvenile justice experience than non-abused children. Multiple other researchers have demonstrated similar findings (e.g.: Dannerbeck-Janku, Peters, & Perkins, 2014; Lansford et al., 2002; Lee & Villagrana, 2015; Huang et al., 2012; Postlethwait, Barth, & Guo, 2010; Ryan et al., 2013). Adding to this concern, research indicates that the effects of maltreatment are cumulative, with more abuse correlating to a greater risk for future violent behaviors (Crooks, Scott, Wolfe, Chiodo, & Killip, 2007). One

study appears to be an outlier, but warrants inclusion. Jonson-Reid, Barth, Caroline, and Hill (2000) found that neglect referrals resulted in higher rates of crossover than did abuse referrals (Jonson-Reid, Barth, Carolina, & Hill, 2000).

Jonson-Reid and colleagues' (2000) study also had additional findings that appear to be outliers. Although they reported that white youth in foster care had a greater risk of crossing over than minority youth, no other research found in this review corroborated their findings. One study found that rates of disproportionality among CY mirrored rates in foster care and juvenile justice (Lee & Villagrana, 2015). Others have found worse rates. Huang et al., (2012) found that the disproportional representation of minority youth in foster care and juvenile justice is exacerbated among CY. Herz and Ryan (2008) found that minority youth were twice as likely to crossover as non-minority youth. Krinsky (2010) reported that African American males were more than six times more likely to crossover than white males.

Foster care risks

Factors related specifically to youth in foster care have also been examined for CY. Length of time in out of home placement, placement instability, and placement type are each considered risk factors. When looking at youth who crossed over, Herz and Ryan (2008) found that most of the youth had long stays in out-of-home placement prior to crossing over but did not examine the impacts of those lengthy stays. As is common for youth who have been in long term foster care, a history of multiple placements among CY is also typical (Herz & Ryan, 2008). Other researchers have corroborated these findings, reporting that delinquency among CY was significantly associated with placement stability (Baskin & Sommers, 2011; Ryan, 2012).

Research on the risks of placement type has primarily focused on the differences between foster home placement and congregate care placements. Baskins and Sommers (2011) also

examined the effects of kinship placements, finding youth placed with kin had more placement stability and were less likely to crossover. When comparing congregate care to foster homes, multiple researchers have found youth in congregate care settings to have considerably greater risk for crossing over than youth in foster homes (Baskins & Sommers, 2011; Herz & Ryan, 2008; Lee & Villagrana, 2015; Ryan, 2012; Ryan & Testa, 2005). Ryan, Marshall, Herz, and Hernandez (2008) found that youth with a history of congregate care are 2.5 times more likely to cross over than youth without that placement history. Ryan (2012) theorized that congregate care may be associated with higher rates for CY because of the factors that lead to congregate care such as increased placement instability, increased behavioral problems, and increased aggressive or violent behaviors.

Finally, a few other factors have been studied in detail. Age at time of referral has mixed reports. Baskins and Sommers (2011) reported that the older the youth is at time of referral the greater the chance of crossing over. They also reported that youth who are referred to foster care for behavior concerns are more likely to crossover (Baskins & Sommers, 2011). Other researchers have reported the opposite. Youth who were referred to foster care at a younger age were more likely to have future involvement with the juvenile justice system (Dannerbeck-Janku et al., 2014; Lee & Villagrana, 2015). It is possible that both of these studies are correct and have examined different populations of foster youth, namely those who are referred at an older age due to pre-delinquent behaviors and youth who have spent many years in foster care because of maltreatment at a young age.

Recidivism

Recidivism is often an outcome measured with involvement in the juvenile justice or criminal justice systems. Recidivism is a return to criminal behavior; however, recidivism is

typically measured through re-arrest, re-conviction, or return to prison, even if no new crime is committed (Durose, Cooper, & Snyder, 2014). For CY, recidivism is one of the primary outcomes that is frequently measured and reported separately from other youth. Consequently, we may know more about recidivism for CY than any other topic, even if this outcome is not part of this dissertation.

Recidivism rates are higher among CY than they are among other juvenile offenders (Chang, Chen, & Brownson, 2003; Ryan, 2006). Huang et al. (2012) reported the recidivism rate of CY was nearly double the rate for non-CY. A report from juvenile justice in Arizona found that over 40% of the youth on probation had previous foster care experience and nearly 70% of them had committed more than one offense (Halemba et al., 2004). Two other reports also found recidivism rates of 70% among CY (e.g.: Huang et al., 2012; Ryan et al., 2013)

Risk assessment tools

Most risk assessment for CY is done after the youth has already had contact with the juvenile justice system. Multiple validated and tested assessment tools are available for juvenile justice professionals to use in assessing the level of risk for offense once a youth is referred to them, including the Youth Level of Service/Case Management Inventory [YLS/CMI] (Hoge & Andrews, 2002), the Structured Assessment of Violence Risk in Youth [SAVRY] (Bartel, Borum, & Froth, 2006), and the Hare Psychopathy Checklist: Youth Version [PCL:YV] (Forth, Kosson, & Hare, 2003) (Hilterman, Nicholls, & van Nieuwenhuizen, 2014; Onifade et al., 2014). Several researchers have reported on the assessment process for CY once they reach the juvenile justice side (Dannerbeck-Janku et al., 2014; Herz et al., 2010; Randall, 2015; Ryan, 2006). Onifade et al. (2014) examined the use of the YLS/CMI among CY and found it to have poor

predictive validity for recidivism. No other tool has been tested specifically for validity with use on CY.

Crossover Youth models

Two models have been developed recently for use with CY. Both are relatively new and focus on the youth once he or she is identified as a CY. Systems Integration Initiative (SII) was developed as a part of the Models for Change juvenile justice reform initiative from the MacArthur Foundation (Siegel, 2009). Bilchik and Nash (2012) reported how differences within systems stymied efforts at collaboration in working with CY. The program is being piloted in five counties in Washington state (Siegel, 2009). By examining the collaborative efforts of agencies who serve CY, SII seeks to assist in developing inter-agency policies that ensure that the needs of the youth are met (Herz et al., 2012).

The Crossover Youth Practice Model (CYPM) is a practice-focused model, working with CY to meet their needs through system collaboration (Abbott & Barnett, 2015). The goals of CYPM are to reduce out of home placements, decrease the use of congregate care, alleviate disproportional representation of minority youth in systems of care, and reduce the number of CY becoming dually-adjudicated (Herz et al., 2012; Lutz, Stewart, Hertz, & Legters, 2012). The CYPM is currently in use in about two dozen jurisdictions (Abbott & Barnett, 2015). Haight, Bidwell, Choi, and Cho (2016) reported on initial progress with the CYPM finding positive results for reducing recidivism using the model.

Lack of research

Limited research hinders understanding of the extent of the problem of CY (Herz et al., 2010). Despite knowing that foster youth are at increased risk for juvenile justice involvement, coordinated practices across systems have not been fully developed and implemented, which

leaves many youth vulnerable to gaps in the systems (Herz et al., 2012). What is known has largely focused on youth who have already entered the juvenile justice system and has not assisted in reducing recidivism or in preventing youth from crossing over. A model showing the link between variables of risk and crossing over does not exist, despite the research into the areas of risk (Bender, 2010; Herz & Ryan, 2008).

The importance of understanding the factors related to youth crossing over cannot be overstated: "From a public safety perspective, addressing the needs of young people at-risk for crossover as soon as problem behaviors present themselves is vital" (Bilchik & Nash, 2012, p. 3). This research seeks to fill the gaps in the current research base by developing a list of risk factors that will contribute to development of a model of youth most at risk for crossing over from foster care to juvenile justice to assist in the development of a risk assessment instrument.

Theoretical Foundation

A multidisciplinary dissertation such as this requires that theoretical considerations be given in both fields. Criminological theory has a long history in its quest to examine the root causes of crime and understanding why individuals, juveniles included, commit crime. Social work theory is newer yet continues to borrow from long theoretical traditions in sociology and psychology. While theories such as Ecological Systems Theory from Bronfenbrenner (1979) are often cited in studies with foster care (e.g.: Havlicek, 2011; Li, Godinet, & Arnsberger, 2011; O'Neill, Risley-Curtiss, Ayón, & Williams, 2012; Reddy & Pfeiffer, 1997), when seeking to uncover predictors of crime, criminological theory may provide the clearest lens. For this reason, I have utilized criminological theory in seeking to understand why some youth in foster care commit delinquent acts.

Theories such as Social Disorganization offer macro-level views of crime but are not supported by the data available in this research. Differential Association is also commonly associated with juvenile delinquency. Again, however, its use is inhibited by limitations of the data. General Strain Theory (Agnew, 1992) is commonly applied at a micro level to delinquency and offers many promising avenues of exploration in examining why youth crossover.

The importance of theory cannot be understated because it provides a foundation for a model upon which assessment of the phenomenon may be based (Hoffman, 2011). Criminology and criminological theory began to develop in the 19th century in response to urbanization and growing crime in cities; however, it was not fully recognized as an academic discipline until the 1950s (Tierney, 2006). Before expounding on criminological theory, a distinction should be made between criminology and criminal justice. Criminology refers to the study of why crime occurs, whereas criminal justice refers to the response to crime once it has occurred (Duffee & Allen, 2007). Criminology has sought to assess why crime occurs with the aim of preventing it (Duffee & Allen, 2007). The focus of this dissertation is on criminology, largely because the development of criminal justice theory has lagged behind criminological theory, at least partially in response to Martinson (1974) determining that "nothing works" as a criminal justice response to crime prevention and reducing recidivism.

Criminological Theory

Adolescents have been committing crimes for longer than society has recognized adolescence as a developmental period. Often, all juvenile crime is referred to in the broader term of delinquency (Hoffman, 2011). Delinquency, though, is a category that may include both criminal offenses and status offenses, which are actions that would be legal if the actor were an

adult (Pilnik, 2013). The problem of juvenile delinquency is a large one, with over 1 million cases referred to courts in 2013 (Furdella & Puzzanchera, 2015).

Since the turn of the century, a greater focus has begun to emerge on youth who are involved in both the foster care and juvenile justice systems. Recently, more research has begun to examine CY and the risks associated with multi-system involvement. Much is known about risk factors for juvenile justice involvement (e.g.: Herz, Ryan, & Bilchik, 2010; Moffitt, 1993; Moffitt, 2006; Thompson & Morris, 2013); however, many of these studies do not identify a theoretical base. The lack of theoretical approaches to assessing the problem of CY inhibits researchers, policymakers, and practitioners.

Sociological-based criminology theory

Sociological theories of crime trace their history to the writing of Durkheim (Cullen & Agnew, 2006). To Durkheim (2006/1897), criminality was a socio-cultural construct. Durkheim (2006/1897) also found that crime was necessary and inevitable because even in a society with no crime, individuals would violate social norms, with those violations then becoming known as crime. Sociological theories became the dominant theories in the mid-20th century and remain the dominant theories today in explaining juvenile crime (Cullen & Agnew, 2006).

Sociological explanations for crime differ from classical approaches in that they posit that choices individuals make are influenced by the socialization they have received (Burkehead, 2006) whereas classical criminology would not recognize socialization as part of the choice an individual makes in acting criminally (Gottfredson & Hirschi, 2003; Panzarella & Vona, 2006). By stating that criminals are not born but created though social processes and abnormal environments, sociological theories differentiate themselves from positivist theories in biology and psychology (Burkehead, 2006). Socialization occurs through different groups, with

Durkheim (2006/1897) considering the family, the nation, and humanity the most important groups for attachment. Modern sociologists have explained crime through social forces and environments such as families, schools, neighborhoods, communities, and societies (Cullen & Agnew, 2006).

Sociological approaches have spawned numerous theoretical approaches to crime (Hoffman, 2011; Shoemaker, 2010). Sociological approaches began with Shaw (1929) and later Shaw and McKay's (1969) Chicago studies where they focused on groups in neighborhoods and social precursors to delinquency. This became known as social disorganization theory (Panzarella & Vona, 2006). Differential association theory built on the Shaw and McKay study (Sutherland, Cressy, & Luckenbill, 1992). Merton (1959) expanded on the concept of anomie from Durkheim (2006/1897) in developing what would become the General Strain Theory (Agnew, 1992).

General Strain Theory. Merton (1959) developed the theory of anomie for criminology from the concepts conceptualized by Durkheim (2006/1897). Durkheim (2006/1893) described an organic solidarity among societies that bound them together through systems of interdependence. While some disagreement exists vis a vis Merton and Hirschi regarding who has been more faithful to the concepts of Durkheim, Bernard (1984) stated that Merton's conceptualization of anomie fully encompassed "the very heart of Durkehim's vision" (p. 89) of anomie.

According to Merton (1959), the most disadvantaged are coerced by society to act in one way and aspire to one set of goals while the society denies that group the opportunities or abilities to meet those expectations. Building on this idea, strain theory rests on five basic concepts: conformity, innovation, ritualism, retreatism, and rebellion (Merton, 1959).

Individuals who accept and achieve the goals established by society conform (Merton, 1959). This group of individuals is not delinquent. Hirschi (2002) characterized youth who conform as those who demonstrate attachment to their parents, schools, and peers. Additionally, youth who have commitments to conventional activities and actions conform (Hirschi, 2002). Shoemaker (2010) noted that it is important to remember that individuals may conform even when they recognize that conformity comes at a disadvantage to them.

Innovation refers to those individuals who accept the goals but resort to deviant behaviors in order to achieve them (Merton, 1959). Innovators may commit misdemeanor crime (Shoemaker, 2010). For example, a youth may accept social norms that he wear certain shoes or have certain jeans. Because he may not have the money to purchase them (the accepted means for meeting this norm), he may steal them.

Merton (1959) wrote that people who give up achieving the goals but still go through society's motions perform ritualism while those who withdraw from both the goals and means are retreating. Shoemaker (2010) identified that a retreatist may use illegal substances to withdraw while the ritualist may do the same but in a less noticeable manner. A youth who is Oppositional Defiant may also be considered retreatist.

Finally, according to Merton (1959), rebellion occurs when the person rejects both the goals and the means to achieving them and replaces them with something else entirely. Shoemaker (2010) wrote that this individual may destroy property or engage in other criminal acts against society or individuals. Another example of rebellion, however, could be Amish communities.

Strain theory states that the pressure to engage in criminality comes from society and its expectations, combined with the lack of resources to meet those expectations (Tierney, 2006).

People are judged through a middle-class lens whether or not the individual is in the middle class further creating stress (Tierney 2006). Relative deprivation refers to comparisons that individuals make between themselves and others who may be in similar positions, which can mitigate or worsen a person's anomie (Merton, 1959).

Merton's conceptualization has been criticized for several reasons. First, Merton could not explain why some people experience strain and commit crime while others may experience similar strain but not commit crime (Agnew, 1989; Farnsworth & Leiber, 1989). The primary focus of strain being the pursuit of middle class goals further limited the applicability of the theory because it failed to explain why middle-class crime exists (Elliott, Huizinga, & Ageton, 1985). Merton's view of strain recognized goals only related to social class and monetary success (Kornhauser, 1978). Finally, limited empirical research supported the conceptualization of strain as presented by Merton (Bernard, 1984; Elliott, et al., 1985; Kornhauser, 1978). To expand on the concept of strain, Agnew (1985) theorized that strain included a serious loss for the individual or the inability to escape a situation perceived as negative. Building on this, Agnew later expanded Merton's strain to include a broader array of events that may be conceptualized as strain:

1. Failure to achieve positive goals (including a difference between the individual's expected outcome and actual outcome)
2. Removal or loss (or threatened removal or loss) of positive stimuli in the individual's life (even if the stimuli is only perceived as positive by the individual)
3. Presentation of negative stimuli (such as abuse) (Agnew, 1992, 1999, 2001, 2005, 2006).

Instances of strain that are close in duration, longer lasting in effect, and greater in magnitude have more pronounced impacts than other instances of strain (Agnew, 1992, 2005). Strain increases over time because the effects are cumulative (Agnew, 2001, 2006). GST is focused on the cumulative impacts of strain (Agnew, 1992). Agnew (2006) argued that negative relationships drive strain more than the lack of means to meet middle class expectations; however, strain also comes from failure to meet goals such as popularity, athletics, and grades (Agnew, 1992). This conceptualization of strain and its moderators provides the foundation for General Strain Theory (GST).

Public strain is more pronounced than strain experienced in private (Agnew, 1999), with foster care being an example of public strain (Agnew, 1999). Many aspects of foster care are often associated with concepts related to strain. Agnew (1999, 2001, 2005) wrote that strain may be evidenced by poor parenting, physical abuse and neglect, purposeful infliction of strain, family disruption, school discord, and poverty. While experiencing a traumatic event is an example of strain so, too, is witnessing traumatic events even if the person is not a party to the trauma (Agnew, 1999). Disproportionality in foster care and disparity in outcomes contributes to strain, with Agnew (1999) writing that the effects of racial discrimination also contributing to strain and its accumulation.

Agnew (2001) developed six criteria for assessing strain:

1. Strain is undeserved (as perceived by the individual),
2. Strain is not caused by a higher cause (gang) or authority (God),
3. Net result of the strain will result in harm to them (as perceived by the individual),
4. Strain was inflicted in an unjust way (as perceived by the individual),

5. Strain is disrespectful, inconsiderate, or aggressive in nature (as perceived by the individual), and
6. Strain violates the social norms (as perceived by the individual).

Strain can be moderated by many factors. Collective efficacy at a macro level may mitigate strain (Agnew, 1999). This would be demonstrated through community members getting along with each other and reporting high levels of trust among neighbors. Social supports, coping skills, and self-conception are primary moderating factors for strain (Agnew, 1992, 2001); however, moderators of strain may also be negative skills such as delinquency, substance use, or avoidance (Agnew, 1992, 2005). The presence of criminal others can also increase strain and increase the impacts of strain (Agnew, 1999).

Research supporting GST is diverse because the theory allows for a diverse interpretation of its application. Agnew (1992) focused on adolescents who became delinquent after reporting poor relationships with their parents. Agnew (1992) argued that the adolescents created negative stimuli as a counterbalance to the negative relationship they experienced with their parent. Agnew (2001) also studied general strain in groups, finding that groups that experience negative situations later report more negative relationships within the group. Hoffman (2009) reported a strong correlation between stressful life events and delinquency among adolescents. Violence in the home has also been linked to later delinquency (Bender, 2010). According to Dunkake (2006), GST is closely linked to the concept of social capital or the idea of building positive networks of relationships. By doing this, individuals are able to overcome what GST conceptualizes as anomie (Dunkake, 2006). Agnew (1999) and Hoffman and Ireland (2004) also linked aspects of anomie, GST, and lack of access to opportunity structures to future delinquency.

Application of General Strain Theory and Its Implications

Research

Robbins, Chatterjee, and Canda (2012) wrote that theory should be included in every aspect of research from conceptualization and design through implementation and data collection continuing to analysis and implications. It may be that studies into CY have not yet included theory because so little is known about the population and the area of study has only recently begun to amass much empirical evidence. Several criminological theories discussed in this paper, however, may assist in future studies of CY. The conceptualization of GST presented in this paper offers a lens through which crossover may be examined.

Nearly all of the studies found about CY considered sociological factors in the research. Common factors included in studies on CY included variables that consider out of home placement in the foster care system: placement type (Baskin & Sommers, 2011; Huang, Ryan, & Herz, 2012; Ryan & Testa, 2005; Young, Bowley, Bilanin, & Ho,2015), placement length (Huang, Ryan, Sappleton, & Chiu, 2015; Lee & Villagrana, 2015; Ryan, Testa, & Zhai, 2008), placement reason (Abrams, Shannon, & Sangalang, 2008; Ryan, 2012), and placement stability (Huang, Ryan, Sappleton, & Chiu, 2015; Ryan, Marshall, Herz, & Hernandez, 2008). Of the studies that examined placement effects, only one did so within the constructs of a sociological theory.

Studies examining CY also often include information regarding the reason for removal from the home. Findings vary across studies regarding the power of the association, but most agree that physical abuse creates a greater increased risk for future delinquency than does neglect (Baskin & Sommers, 2011; Lee & Villagrana, 2015; Ryan, 2006; Ryan & Testa, 2005; Williams et al., 2001, Young et al., 2015) and that multiple reports of abuse or neglect also increase the

risk of delinquency in the future (Bender, 2010; Huang & Ryan, 2014; Huang, Ryan, & Herz, 2012). Abrams, Shannon, and Sangalang (2008) were unable to establish this correlation, indicating that referral reason may not be a predictor of CY.

Other sociological factors have been studied with regard to CY. Substance use is correlated with increased risk for foster youth to commit delinquent acts (Huang & Ryan, 2014; Snyder & Smith, 2015; Williams et al., 2001). Multiple staffing changes in congregate care facilities were also associated with increased risk (Ryan & Testa, 2005). How disposition of the case before the court is handled is associated with the level of risk for recidivism (Ryan, Herz, Hernandez, & Marshall, 2007). CY with dual-involvement (open cases in both foster care and juvenile justice) were found to have increased risk for future recidivism when compared to CY who did not have open cases with both departments (Ryan, Williams, & Courtney, 2013). Examining multiple sociological factors, Ford, Grasso, Hawke, and Chapman (2013) found that youth with higher reports of adverse events on the Adverse Childhood Events questionnaire were more likely to later become CY.

Sociological factors presented in this literature represent areas of strain the lives of adolescents, particularly those living in foster care. Most studies focus on micro-level interactions related to individual cases, which lend themselves to an application of GST.

Policy

While much of the research on CY discussed above did not have a theoretical base, the results from the studies can be applied using GST to assess and change policy. Many studies have made policy recommendations and some have begun to evaluate existing policy in order to assess its effectiveness. While these offer a guide to future policy work, they have not been completed with a theoretical framework to guide them.

GST may address policy concerns at a more macro level and in ways that expand beyond the concept of CY. In other instances, sociological theories may apply at the micro level. Because of this diversity, sociological theories offer several applications to policy that are pertinent.

At the macro level, Warf, Clark, Herz, and Rabinozitz (2009) found that among all variables considered, poverty was the most highly correlated with CY. Mallett, Fukushima, Stoddard-Dare, and Quinn (2012) examined extralegal factors related to the incarceration among juveniles and found that race and location were the strongest predictors. Family structure was closely associated with CY as well (Young et al., 2015).

Placement could be addressed through macro policies or could be addressed at the micro level for each individual child. Congregate care has been closely associated with higher delinquency risk levels for youth in the foster care system (Baskin & Sommers, 2011; Ryan et al., 2008; Ryan & Testa, 2005) and for recidivism among offenders (Huang et al., 2012; Huang et al., 2015; Ryan, Abrams, & Huang, 2014; Young et al., 2015). Despite numerous reports on the positive outcomes from placement of youth with kin (Chamberlain, Price, Reid, Landsverk, Fisher, & Stoolmiller, 2006; Cuddeback, 2004; Hong, Algood, Chiu, & Lee, 2011; Smith & Devore, 2004), reports examining kin placement found delinquency and recidivism higher for kinship-placed youth versus foster-home-placed youth (Ryan, Hong, Herz, & Hernandez, 2010; Ryan, Testa, & Zhai, 2008). A better understanding of the differences in placement types and outcomes may assist in policy formation that decreases delinquency.

Micro-level concerns related to CY policy include findings from several studies. Substance use is highly associated with delinquent behavior (Herz et al., 2010; Ryan, Williams, & Courtney, 2013; Snyder & Smith, 2015; Warf et al., 2009; Williams et al., 2001). Negative

peer relationships were also correlated with delinquency (Bender, 2010; Dannerbeck-Janku et al., 2014; Ryan, 2012). Finally, many studies examined age as a factor. Findings included that the younger the age of the first delinquent act, the greater the risk for becoming CY and the greater the risk for recidivism later (Dannerbeck-Janku et al., 2014; Lee & Villagrana, 2015; Young et al., 2015). Additionally, youth who entered the foster care system for the first time at an older age were more likely to become CY and to recidivate later (Baskin & Sommers, 2011; Huang et al., 2012). Not all studies found an association with age, however (Abrams et al., 2008; Huang et al., 2015). These apparent discrepancies in the literature may be a result of different samples from within the foster care system or different methods of analysis. Further exploration is needed.

Practice

Practice implications, of course, are often driven by changes in policy; however, a discussion of practice implications with relationship to the theoretical concepts of criminology is still warranted. Because of this, implications will focus on areas not covered in the policy section. In many respects, parts of the theoretical base may already be present in many practices related to CY.

Practice implications from GST may be summarized in two areas: home and placement. Glueck and Glueck (2006) reported that family disorganization was common among delinquent youth in their study. Family structure was also a significant factor predicting delinquency in other studies (Ryan, 2006; Ryan et al., 2014). Because maltreatment type, length, and severity have also been linked to CY risk, practitioners should be aware of the history of the youth with whom they work.

Placement decisions are typically made at the micro level, on a child-by-child basis. Sociological theory would indicate that placements with greater support and care for the needs of the youth would better meets the needs of individual youth. Policy likely already dictates that placement should occur in the least restrictive environment, which would also typically meet the theoretical conception for placement in sociological theory.

Data

For this dissertation research, I used two national datasets that provide information on youth in the foster care system in the United States.

Adoption and Foster Care Analysis and Reporting System

The Adoption and Foster Care Analysis and Reporting System (AFCARS) is updated annually from information provided by every state (NDACAN, 2016). The report is available beginning in 1995 with the latest report currently available being 2013. AFCARS is a federal reporting system for children in the foster care systems in the United States. All 50 states, the District of Columbia, and Puerto Rico are required to report data for children over whom they have placement authority or who have been adopted from a system where the state had placement authority. Additionally, AFCARS reports information on birth parents of children in the foster care system and on foster and adoptive parents who have had children placed in their homes. Standard demographic information such as age, race, and gender is provided. Foster care related data is also available. These data include length of time at current placement, number of past placements, number of removals from the home, reason for removal, Title IV-E eligibility, mental health diagnosis, Individualized Education Plan (IEP) at school, and termination of parental rights.

The AFCARS report is issued based on the federal fiscal year from October to September. Two files are created: one for foster care data and one for adoption data. The foster care file contains child demographic information and foster care related information such as number of times in out of home care, current placement information, case plan goal, reason for removal, and others. The adoption file contains information related to children who were adopted from the foster care system in the past year. This research will not utilize the AFCARS adoption file. The *N* size in AFCARS is over 600,000 for each year of the report.

National Youth in Transition Database

The National Youth in Transition Database (NYTD) report was commissioned as part of the John H. Chafee Foster Care Independence Program (CFCIP). The NYTD data are collected annually starting in 2011 from all 50 states, the District of Columbia, and Puerto Rico. Due to confidentiality concerns, data from Connecticut are currently unavailable to the research community. Youth are included in the report if they are under the supervision of the foster care system and are likely to remain under this supervision through their 18th birthday. The NYTD data set includes demographic information for the child as well as specific information about the child outcomes and services. The NYTD report is two separate data collection reports: the NYTD Outcomes file and the NYTD Services file. Data are reported every 6 months by the states and compiled into a yearly report for dissemination.

For the NYTD Outcomes file, youth surveyed include those who will turn 17 during the first fiscal year of the survey administration. The survey is completed by the youth for this report. For the 2011 report, this would include youth in the foster care system who were turning 17 from October 2010 to September 2011. The survey is conducted biennially from the baseline cohort with two additional waves reported. Follow up years re-survey the same youth during the

fiscal years in which they turn 19 (2013) and 21 (2015). Every third year following the initial baseline, a new cohort will be established. A new baseline year began in 2014 for youth who turned 17 between October 2013 and September 2014. Follow up years for this cohort include 2016 and 2018. This year represents the next new baseline year; however, these data are not yet available. This dissertation research will utilize a complete cohort of youth from the 2011, 2013, and 2015 reports, representing youth who have turned 17, 19, and 21 during their cohort years.

The NYTD Services file is completed every six months on a continuous basis. At the end of the year, the Service reports are combined into a single data file for that fiscal year. This file is a cross-sectional examination of the services provided to youth in foster care using funds administered by the CFCIP. The NYTD Services file has no age restriction so it includes youth who are much younger than 17 if they have received any service funded by the CFCIP. This dissertation research will utilize every available year of the Services file from 2011 through 2015 in order to capture the breadth of service usage over time.

Linking AFCARS and NYTD

The NYTD and AFCARS datasets are linkable using a unique AFCARS identifier, beginning with the 2011 sets for each of them. Using the AFCARS 2011 as a baseline file (because it contained the largest set of youth available), I combined each subsequent year of AFCARS (2012-2015) into the AFCASR 2011 file. Next, I combined every report for NYTD Services into the new file (2011-2015). Finally, I combined every year of NYTD Outcomes (2011 and 2013-2015) into the new file. This combined dataset contains information on every youth who has been under the placement authority of a state agency from 2011 to 2015. Please see the appendix for a breakdown of demographic information available at this time.

Purpose, Goals, Objectives

Purpose

The purpose of this research is to analyze national data on youth who enter foster care and may be later served by juvenile justice, either transitioning their cases fully to the juvenile justice system or having collaborative services with both foster care and juvenile justice. The analysis will examine demographic information, factors related to their entry into foster care, and placement history information. The purpose is to develop an understanding of which youth are more likely to crossover to juvenile justice based upon these factors.

Goals

The research has four primary goals:

1) To identify what is known about CY in the current literature through a scoping review;
2) To create a demographic profile of youth in foster care who are most at risk for crossing over to juvenile justice;
3) To examine the foster care related factors including reason for removal, number of removals, length of time in foster care, and number of placements that may be most associated with youth who crossover to juvenile justice; and
4) To identify services provided to youth in foster care that may predict outcomes for youth as they age out of care.

Objectives

The objectives for the research include the development of a profile for child welfare workers to identify youth in their care who are most at risk for crossing over from foster care to juvenile justice. Additionally, by examining service provision, this study seeks to identify a potential model of service delivery that mitigates risk for negative outcomes for youth who age out of care. Child welfare and juvenile justice professionals could implement interventions that

target CY to assist in prevention efforts. Finally, by expanding my examination to other outcomes for youth exiting care, we can begin to understand a whole picture of youth as they exit foster care and enter adulthood.

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Chapter Two

Identifying Crossover Youth in the literature: A scoping review

(Target: Journal of Public Child Welfare)

Abstract

Little is known about Crossover Youth (CY), adolescents who have involvement with both the foster care and juvenile justice systems. Only recently have researchers begun to examine this distinct population. Because of the paucity of research in the area, prevention efforts and risk assessment cannot be conducted. To better understand the current state of the literature, a scoping review was conducted. Findings indicate that research primarily has focused on outcomes for CY in juvenile justice with considerably less focus on youth in foster care before they enter juvenile justice. Implication and future directions are discussed.

Keywords: Crossover Youth, General Strain Theory, Foster Care, Juvenile Justice

In 2016, over 400,000 youth were involved in the foster care system in the United States (HHS, 2017). Juvenile delinquency cases numbered over one million in 2013 (Furdella & Puzzanchera, 2015). Youth who have exposure to both systems of care are known by many names including crossover youth, dually-adjudicated youth, dual-system youth, and cross-system youth depending on their exact status in either system and when they become known to each system (Ryan, Williams, & Courtney, 2013). Crossover Youth (CY) is generally used as the umbrella term meaning youth who have had exposure at some point in their lives to both the child welfare and juvenile justice systems (Herz & Fontaine, 2013). Although it is possible that CY begin in the juvenile justice system and then have exposure to child welfare, most CY begin in child welfare and then transition to juvenile justice (Huang, Ryan, & Herz, 2012). The number of CY is not known as no federal or state system collects data on this population. The data collected in aggregate for Crossover Youth is done at a local or jurisdictional level at this time.

In recent years, considerably more research has focused on CY; however, much is not yet known. Common risk factors for involvement in the juvenile justice system often include a history of abuse or neglect (Thompson & Morris, 2013). This, however, does not assist in identifying youth within the child welfare system who often all share a background of abuse or neglect. Furthermore, poor outcomes for education, mental health, and adult transition are known for youth in both the child welfare and juvenile justice systems (Bright & Johnson, 2015; Carnochan, Taylor, & Abramson, 2007; Rosenberg & Kim, 2017); however, the impact of having crossover status is less explored with regard to these outcomes.

When examining youth involved in the juvenile justice system, a theoretical lens is beneficial to assist in understanding the criminogenic needs. General Strain Theory (Agnew,

1992) is often associated with juvenile justice because of its focus on multiple domains where strife may be present. Poor parenting, abuse, sudden moves, and trauma have all been associated as strains in GST (Agnew, 1992, 1999, 2001, 2006).

To address the gaps in the literature regarding CY while also recognizing the literature is an emerging field, a scoping review of what is known must first be conducted. Multiple researchers have cited the efficacy of scoping reviews when examining a topic that is relatively new or where little is known about the topic (e.g.: Daudt, Van Mossel, & Scott, 2013; Dijkers, 2015; Whittemore, Chao, Jang, Minges, & Park, 2014). CY is an example of this. This review sought to answer two questions: 1) What factors are known about youth who between foster care and juvenile justice? 2) How do the outcomes for crossover youth differ from youth who are only involved in either the child welfare or juvenile justice system?

Methods

A scoping review is a relatively new research method first described by Arksey and O'Malley (2005) using the term "scoping study." While other terms have been used for this methodology, most researchers today have begun using scoping review or scoping study (Dijkers, 2015). Colquhoun and colleagues (2014) developed the following definition for the method: "Form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge" (p. 1292-4). The Arksey and O'Malley model, also called the York framework (Brien, Lorenzetti, Lewis, Kennedy, & Ghali, 2010), was expanded by work from Levac, Colquhoun, and O'Brien (2010) and Colquhoun et al. (2014). The following model is the revised Arksey and O'Malley model:

1. Define the research question while considering the purpose of the review.

2. Identify the relevant studies (published, grey literature, other works) using broad terms for inclusion. Terms may be revised if needed as the search expands.
3. Establish selection criteria. Process may be revised as an on-going search based upon the results of the initial inquiry but should be noted so the review remains replicable.
4. Chart the data, pulling from the studies the information relevant to answering the research question.
5. Synthesize the findings and apply meaning to make recommendations in policy, practice, and research. (Arksey & O'Malley, 2005; Colquhoun et al., 2014; Levac et al., 2010).

While guidelines have been established for conducting the search, disagreement continues over assessing the quality of works included in the review. Arksey and O'Malley's original model and the revised model do not include a process for the assessment of quality, arguing that the assessment would necessitate the narrowing of the research question. Multiple researchers, however, have written about the need for such inclusion in order to make valid recommendations for policy, practice, and research (e.g.: Brien et al., 2010; Grant & Booth, 2009; Whittemore, Chao, Jang, Minges, & Park, 2014). For the purposes of this review, an assessment of quality is included when possible to strengthen the findings while still allowing less rigorous studies to be included.

A systematic search for research was conducted to find the relevant articles to answer the research questions, seeking to extract from the literature base all of the studies involving crossover youth. The following databases were searched: Academic search complete, Criminal Justice abstracts, Legal Collection, LGBT Life, Race Relations abstracts, Family Studies abstracts, Social work Abstracts, and PsychInfo. The following search strings were queried in

each database: 1) Crossover AND foster care AND juvenile justice, 2) Crossover AND juvenile justice, 3) Crossover AND foster care, 4) dually involved AND juvenile justice, 5) dual system youth AND foster care, 6) dual system youth AND juvenile justice, 7) dual jurisdiction youth AND foster care, 8) dual jurisdiction youth AND juvenile justice, 9) multi system youth AND foster care, and 10) multi system youth AND juvenile justice. Additionally, in order to capture articles that may not have been in those databases, searches were conducted in Google Scholar and ProQuest using the following search terms: 1) Include the phrase "crossover youth" AND with at least one of these "foster care" OR "juvenile justice," 2) Include the phrase "youth who crossover" AND with at least one of these "foster care" OR "juvenile justices," 3) Include the phrase "dually-involved" AND with at least one of these "foster care" OR "juvenile justice," 4) Include the phrase "dual system youth" AND with at least one of these "foster care" OR "juvenile justice,' 5) Include the phrase "dual jurisdiction youth" AND with at least one of these "foster care" OR "juvenile justice," 6) Include the phrase "multi-system youth" AND with at least one of these "foster care" OR "juvenile justice," and 7) Include the phrase "crossover youth" AND with at least one of these "foster care" OR "juvenile justice." Finally, searches were conducted on Google to capture grey literature published online by agencies working with CY.

An initial review of the survey results in December 2015 found 214 articles that needed further examination. A second examination was conducted in October 2017 using the same search parameters, locating an additional 53 articles for consideration. Additionally, searches were conducted using Google in order to locate reports and other materials that are not part of academic reporting. Six reports were located.

Abstracts and methods were read to determine if each study warranted closer inspection for inclusion in the study. Reading of the abstract and methods section determined if the article

appeared to be about CY or if the articles contained a section dedicated to CY. To be included in the scoping review, an article needed to be written in English, needed to have results that specified CY specifically (rather than aggregating their results within the total results of the study), and needed to use statistical measurements to assess the results. Qualitative studies were not included because primarily they focused on interviews with professionals and not with CY. Studies needed to be either published in a peer-reviewed journal, be part of a thesis or dissertation, or be produced by a non-profit agency examining the impacts of CY programming. Only studies that focused on experiences in the United States were included. Only one study was excluded due to this criterion (e.g.: Li, Chu, Goh, Ng, & Zeng, 2015). Furthermore, only papers that examine the end results (outcomes) of crossover youth were selected for inclusion. Additionally, studies that only compare demographic variables among foster care youth, juvenile justice youth, and crossover youth without including some outcome data are also excluded.

The 273 articles were screened using the above criteria for inclusion in the study. In depth screening of abstracts and methods were conducted of the articles. For reports lacking these sections, examination consisted of determining if the report provided detailed information about the outcomes of CY or if reported on implementation of a program. For a breakdown of the review and elimination process, see Figure 1. A final selection of 28 articles was included in the study (see table 1).

Results

Three of the included articles were dissertations, unpublished elsewhere (Dirig, 2016; Kolivoski, 2012; Moore, 2016). One Foundation report was included as it provided an update on a model being used to address CY needs (Coulton, Crampton, Cho, & Park, 2016). Most articles used administrative data for their analysis, although two studies used the National Survey of

Child and Adolescent Well-Being (NSCAWB). Chuang and Wells (2010) used the NSCAWB Wave I data while Snyder and Smith (2015) used data from Wave II. Topitzes, Mersky and Reynolds (2011) used data from the Chicago Longitudinal Study, and Irvine and Canfield (2015) collected survey data. Eight of the articles have the same person as the primary author (Ryan, J.) and he is a co-author on an additional four. Dr. Ryan is recognized as an expert in this area and one of the first to begin studying the population. Seven of the articles also gathered data from Los Angeles county. The total sample size of the 28 articles is 178,385 which includes the smallest sample (n=57) and the largest sample (n=69,009). While it is not possible to know if the samples overlap each other, this possibility exists with so many articles coming from the Los Angeles county data source, including the largest sample. Furthermore, while the two studies using the NSCAWB data cover different waves, the study is a longitudinal one and some of the sample represent the same youth in both waves.

Outcomes are discussed through a variety of measures that include demographic information, placements, child welfare measures, recidivism, offense type, sentencing outcome, and females.

Demographics

Of the studies that examined differences in gender, all found that males were more likely to be CY (Huang & Ryan, 2014; Huang, Ryan, & Herz, 2012; Huang, Ryan, Sappleton, & Chiu, 2015; Kolivoski, 2012; Lee & Villagrana, 2015; Ryan, 2012; Ryan, Abrams, Huang, 2014; Ryan, Herz, Hernandez, & Marshall, 2007; Ryan, Marshall, Herz, & Hernandez, 2008; Snyder & Smith, 2015; Tropitzes et al., 2011; Vidal et al., 2017). Race was also examined with most studies finding that non-White youth were more likely to be CY than White youth (Coulton et al., 2016; Huang & Ryan, 2014; Huang, Ryan, & Herz, 2012; Huang, Ryan, Sappleton, & Chiu,

2015; Lee & Villagrana, 2015; Onifade, Barnes, Campbell, Anderson, Peterson, & Davidson, 2014; Ryan, 2006; Ryan & Testa, 2005; Ryan, Abrams, Huang, 2014; Ryan, Herz, Hernandez, & Marshall, 2007; Ryan, Marshall, Herz, & Hernandez, 2008; Vidal et al., 2017). Ryan and Testa (2005) found African American males had more than two times the risk for crossing over compared to Caucasian males. Two exceptions were noted on reports regarding race. Baskins and Sommers (2011) reported that White youth in foster care had a greater likelihood of arrest, while Ryan (2012) found that there was no difference on race for CY who had no previous exposure to the juvenile justice system.

Age was also discussed by many of the studies. Youth who enter foster care at an older age were significantly more likely to crossover according to multiple studies (Baskins & Sommers, 2011; Ryan & Testa, 2005; Snyder & Smith, 2015; Vidal et al., 2017); however, Baglivio et al. (2016) found youth referred at younger ages to be at greater risk. Baskins and Sommers (2011) wrote that for youth in congregate care settings who entered foster care between 7 and 12 years old, 36% became CY while just under 7% of youth who entered foster care between birth and 6 years old became CY.

Females

Females are an understudied population in criminal justice and juvenile justice research. Accordingly, they are also an understudied population among CY. Two of the included studies had a breakdown of findings regarding the females (Lee & Villagrana, 2015; Ryan & Testa, 2005) and two studies focused entirely on female CY (Dannerbeck-Janku, Peters, & Perkins, 2014). All findings from these studies related to female CY will be examined in this section.

Lee and Villagrana (2015) found female CY in their study were significantly represented in the sample compared to non-crossover female youth and that they had significantly higher

rates of recidivism than non-crossover females (63% vs. 52%). Maltreatment reports for females increased the risk of delinquency (Dannerbeck-Janku, Peters, & Perkins, 2014; Moore, 2016; Ryan & Testa, 2005). Ryan and Testa (2005) found that with three or more reports of maltreatment, female CY had nearly double the risk for recidivism than youth who experienced fewer maltreatment reports. Race was also found to be a significant contributing factor with African American females experiencing higher rates of crossing over (Lee & Villagrana, 2015; Ryan & Testa, 2005).

Female CY had more out of home placements and more arrests than their non-crossover counterparts (Danerbeck-Janku, Peters, & Perkins, 2014; Lee & Villagrana, 2015). Higher risk scores across all domains (delinquency, education, family, peers, substance use, and individual) were significantly associated with female CY when compared to non- CY; conversely, protective scores were lower for female crossover youth when compared to non-crossover females (Lee & Villagrana, 2015). Dannerbeck-Janku, Peters, and Perkins (2014) also found other contributing factors that predicted delinquency among CY. Factors included a history of child welfare involvement, age at first referral, placement history, parental mental health or substance use history, parental incarceration, and parenting style (Dannerbeck-Janku, Peters, & Perkins, 2014). Youth level factors such as substance use history, mental health diagnosis, behavior problems, and poor academic performance all were significant predictors of delinquent behavior as well (Dannerbeck-Janku, Peters, & Perkins, 2014). Moore (2016) found that a history of placement in congregate care increased the risk for delinquency for African American females but that placement moves not involving congregate care did not.

Placement

Placement outcomes were discussed in many of the studies included in the analysis. Lee and Villagrana (2015) found that male CY had higher rates of court ordered out-of-home placement than did their non-CY counterparts (χ^2=47.68, p < .001). These findings are concerning based on other findings in the studies. Ryan and Testa (2005) found that out of home placement and placement instability both increased the risk for future delinquency. Multiple other studies found placement instability correlated with delinquent behavior in CY (Huang & Ryan, 2014; Huang, Ryan, & Herz, 2012; Huang, Ryan, Sappleton, & Chiu, 2015; Ryan, 2006; Ryan, 2012; Ryan, Marshall, Herz, & Hernandez, 2008; Ryan, Testa, & Zhai, 2008). For instance, Huang and Ryan (2014) also found that placement instability correlated with delinquent behavior among CY with more than two-thirds of their sample (n=2360) having more than one placement. Huang, Ryan, Sappleton, and Chiu (2015) went further, finding that placement in a congregate care setting for CY increased the risk of recidivism when compared to CY without congregate care history. Nearly one-third of their sample (n=213) had 11 or more placements in their record (Huang et al., 2015).

For many youths with delinquent behaviors, frequent placement changes often lead to congregate care settings such as group homes (Baskins & Sommers, 2011). Ryan, Marshall, Herz, and Hernandez (2008) found that 20 percent of CY had experienced a congregate care setting while only 8 percent of non- CY had a similar placement history. Furthermore, they found that of youth who experienced an arrest, 79 percent had their first arrest while in an out of home placement and 40 percent of those were in a congregate setting (Ryan, Marshall, Herz, & Hernandez, 2008). Findings from Baskins and Sommers (2011) indicated that youth placed in these types of settings are two times more likely to be arrested than youth placed in other

settings. While this placement setting was significant in predicting arrest, it was not significant in predicting the type of offense (Baskins & Sommers, 2011). Congregate care placements for African American girls more than doubled the risk for crossover (Moore, 2016).

Huang, Ryan, and Herz (2012) reported that nearly half of their sample (n=1148) who had experienced congregate care at least once were arrested for a charge that included violence. CY were more likely to have a violent first-time offense than non-CY; however, this difference was reported descriptively (Coulton et al., 2016). Baskins and Sommers (2011) found no difference between violent and non-violent arrest offenses but indicated that youth who experience congregate care settings are at an increased risk for either type of arrest. Nearly 40% of the youth arrested this way were detained with an average stay of 33 days (Huang, Ryan, & Herz, 2012). Ryan, Marshall, Herz, and Hernandez (2008) found that just one placement in a congregate care setting increased the risk for juvenile delinquency by two and half times.

A few studies had outcomes regarding placement that no other studies examined. Ryan, Testa, and Zhai (2008) examined the bond between the placement provider and the youth, finding that as the reported attachment increases, the risk for delinquency decreases, while perceptions of instability and school problems are associated with increased risk for delinquency. Placement with kin was also associated with an increased risk for delinquency (Ryan, Testa, & Zhai, 2008). Huang and Ryan (2014) examined neighborhood characteristics using a disadvantage index. They found that as neighborhoods improved scores on the disadvantage index, rates of CY in those neighborhoods decreased. In their model, the variance explained for delinquency alone is 14 percent; combined with delinquency and neighborhood disadvantage, the model accounted for 68 percent of the variance (Huang & Ryan, 2014). Snyder and Smith (2015) were the exception, finding no effect on crossover status from out of home placement.

Child Welfare Measures

Several factors related to child welfare involvement were included in studies. Maltreatment types, referral reason, age at referral, and length of time in out of home care are all factors considered as child welfare measures. Huang and Ryan (2014) reported the average age of first maltreatment among their sample was 6.45 years old. Few studies reported the age at referral to the child welfare system. Those that did, typically found that most CY were reported for maltreatment in a middle age group (approximately 7-12 years old) (Huang, Ryan, Sappleton, & Chiu, 2015).

Placement referrals were divided into two categories (maltreatment and child behavior) by Ryan (2012), finding that girls were more likely to be placed out of home for behavior than boys. He further wrote than youth placed out of home for behavior concerns were typically older than youth placed for maltreatment reports (Ryan, 2012). Ryan and Testa (2005), however, found that youth referred to out of home care for physical abuse were at the greatest risk for delinquent behavior. They further reported that substantiation of maltreatment made a difference, with substantiated maltreated being correlated with a 47 percent increased risk of delinquency verses youth with unsubstantiated maltreatment (Ryan & Testa, 2005). Ryan (2012) also compared CY with maltreatment history, removal for child behavior, and delinquency only youth. He found that youth with a history of maltreatment only had the highest stability in placement, and youth who removed from the home due to child behaviors had the least stable placement (Ryan, 2012).

Other researchers examined the difference between physical abuse and neglect as the reason for removal. Topitzes et al., (2011) reported that physical abuse was a predictor of crossover for males but not for females; however, they found that a history of physical abuse was

positively associated with adult criminal justice involvement for both males and females. Vidal and colleagues (2017) reported that neglect increased the risk for delinquency while physical abuse or sexual abuse were not associated with future delinquency. Dirig (2016) found the neglect was the reason for removal most associated with crossover, specifically identifying that neglect increased the risk of violent crime for males (χ^2=58.51 [no p value was reported]). Dirig (2016) also reported that emotional abuse was a significant predictor of delinquency for females, but the study did not actually have any female participants with this reason for removal. Finally, Kolivoski (2012) reported that any out of home placement is predictive of juvenile delinquency but that congregate care predicts chronic juvenile justice involvement.

The risk for delinquency increases with each subsequent referral for maltreatment, more than tripling the risk for males with every additional report of maltreatment (Ryan & Testa, 2005; Vidal et al., 2017). The child's age when maltreatment occurs is also a significant predictor of later delinquency, with children who experience maltreatment at an older age being more at risk for delinquency (Ryan & Testa, 2005). Baglivio and colleagues (2016), however, found that youth who have a first referral to child welfare at an early age have the greatest risk for crossover.

Baskins and Sommers (2011) reported the longer a youth is in out of home placement, the greater the risk for delinquency. Ryan, Marshall, Herz, and Hernandez (2008) reported an average length of placement at 52 months among their sample. Ryan (2006) reported an average length of stay at just over 12 months. Vidal (2017) reported increased risk for delinquency increases rapidly after 40 months in out of home care.

While referrals to child welfare for sexual abuse are rarer than other types of referrals, youth who are removed from the home due to sexual abuse were the least likely to be CY;

however, of those who did commit delinquent acts, they had the highest likelihood of formal charges following their arrest (Baskins & Sommers, 2011).

Recidivism

Recidivism rates were generally high among studies that reported them. Huang, Ryan, Sappleton, and Chiu (2015) reported an overall recidivism rate of 49 percent. Onifade, Barnes, Campbell, Anderson, Peterson, and Davidson (2014) similarly reported a 49 percent recidivism rate among their sample. Similarly, Ryan, Abrams, and Huang (2014) reported a recidivism rate of 48 percent. Abrams, Shannon, and Sangalang (2008) reported a recidivism rate of 40 percent overall with a 48 percent among youth in the transition program and 27 percent among youth not in the program. Specifically, Abrams et al. (2008) reported CY in both groups had higher recidivism rates than the non- CY in their groups (55 percent for the transition group and 42 percent for the non-transition program group). Huang, Ryan, and Herz (2012) reported an overall recidivism rate of 56% among their sample. Lee and Villagrana (2015) reported incredibly high recidivism rates for both CY (72%) and non- CY (61%). Recidivism rates for males only in their sample were 75 percent for CY and 63 percent for non- CY (Lee & Villagrana, 2015). Ryan (2006) reported a recidivism rate of 46 percent for his sample. Ryan, Williams, and Courtney (2013) found that CY with histories of neglect had a 61 percent recidivism rate, compared to 51 percent for the overall crossover rate and 49 percent for the overall juvenile offender population; however, when controlling for substance use, family status, and school, peer, and youth items, delinquency only youth were more likely to recidivate than CY (Ryan, Williams, and Courtney, 2013). In reporting the outcomes of the CYPM, Haight, Bidwell, Choi, and Cho (2016) found youth in the CYPM had significantly lower recidivism rates than in a match control group (31% to 48%).

Arrest history was a significant factor in recidivism rates. Abrams, Shannon, and Sangalang (2008) reported that each subsequent arrest increased the risk of recidivism by over 14 percent in the first level of their model. The prior arrest variable remained significant throughout the models as other variables were added. In the final model, no variable other than prior arrest history, including maltreatment history or any demographic variable, was significant with each prior arrest, the odds of recidivism increased 20 times (Abrams, Shannon, & Sangalang, 2008). Herz, Ryan, and Bilchik (2010) also reported that arrest rates impact recidivism; however, they reported that a charge for a probation violation actually decreases the risk of recidivism by 56 percent when compared to a new property or drug offense. Despite this distinction, their findings also indicated an overall increased risk nearly triple for recidivism based on having multiple previous charges (Herz, Ryan, & Bilchik, 2010). If the previous charge led to incarceration, the recidivism risk increased to four times that of a first-time offender. Ryan (2006) also found that a history of more than one arrest was significantly correlated to future recidivism.

Comparisons of recidivism rates across placements types found that congregate care placements had higher rates of recidivism than youth placed in a home setting on probation at one year (35 to 28%) and at five years (47% to 39%) (Ryan, Abrams, and Huang, 2014). Placement in a probation camp had the highest recidivism rates (one-year 51%; five-year 65%); however, this placement setting was reserved the highest risk offenders and CY were mostly placed in congregate care settings in the study (Ryan et al., 2014). Congregate settings also increased the risk of recidivism regardless of maltreatment type (Ryan, 2006). Abrams, Shannon, and Sangalang (2008) found the maltreatment type and child welfare reason not to be a significant factor in recidivism in their model.

Age was also examined regarding recidivism. Abrams, Shannon, and Sangalang (2008) found that every year increase in age before the first arrest correlated to a 43 percent decreased chance of recidivism in the first and second levels of their model before it dropped from significance in the final two levels. Other studies concurred with the findings that the older a youth is before the first arrest, the less risk that youth has for recidivism (Herz, Ryan, & Bilchik, 2010; Ryan, 2006; Ryan & Testa, 2006).

Ryan (2006) reported both physical abuse and neglect increased the risk of recidivism for CY compared to juvenile offender youth, increasing risk by more than 1.5 times with both types of maltreatment. Ryan, Williams, and Courtney (2013) reported that CY with a history of neglect were more likely to recidivate when compared to other maltreatment referral types.

Risk assessment

Risk assessments were examined for validity as predictors of recidivism risk for CY in some studies with mixed results. Herz, Ryan, and Bilchik (2010) found that risk assessment scores were one of the most salient predicting factors for recidivism among their sample of crossover youth. Lee and Villagrana (2015) also found that CY had significantly higher risk scores than their non- CY counterparts across all six domains on the risk assessment (delinquency, education, family, peers, substance use, and individual). Onifade et al. (2014) found that delinquency only youth had lower risk assessment scores on the YLS/CMI than did crossover youth. Despite these differences, the risk assessment scale was not predictive for risk of recidivism among CY (Onifade et al., 2014). Lee and Villagrana (2015) did not report a risk assessment score but reported on risk factors and protective factors. They found that CY had significantly fewer protective factors and significantly more risk factors when compared to their non-crossover peers (Lee & Villagrana, 2015).

The impact of race on recidivism rates was tracked by a couple of studies. Ryan, Williams, and Courtney (2013) found that African American and Latino male CY were at increased risk for recidivism, even when controlling for factors such as age, maltreatment history, and family status. Ryan, Abrams, and Huang (2014) concurred with the findings that African American and Latino youth were at increased risk for recidivism. Additionally, Ryan, Herz, Hernandez, and Marshall (2007) found African American and Latino CY at an increased risk for recidivism. Furthermore, they found that 24 percent of all cases were dismissed, but African American and Latino youth were significantly less likely to have a case dismissal even when controlling for age and type of offense. Only two other factors contributed to case dismissal: violent charges or multiple charges; child welfare history was not significant predictor of dismissal (Ryan, Herz, Hernandez, & Marshall, 2007).

Other factors predicted recidivism that were reported in some studies. Herz, Ryan, and Bilchik (2010) reported that substance use and truancy doubled the risk of recidivism when compared to youth who did not use substances and were not truant. As an exception, CY with special representation were 56 percent less likely to face formal court processing following their arrest (Herz, Ryan, & Bilchik, 2010). Ryan (2006) reported that family status and length of time in care were significantly correlated with recidivism with single parent homes and longer times in care increasing risk.

Offense type

Overall findings indicate that crossover youth have significantly more arrests, and those arrests lead to significantly more formal charges than for their non-crossover peers (Lee & Villagrana, 2015). Baskins and Sommers (2011) reported that youth placed in congregate care

settings are at increased for arrests of all types, including violent or non-violent charges and felonies or non-felonies.

Offense type was seldom explored in the studies. Ryan (2006) reported the most frequent offenses for recidivism were possession of substances and weapons violations. Snyder and Smith (2015) found that marijuana use was the most common charge among CY while attacking someone with a weapon was the least common charge. One study listed all offense types. Ryan and Testa (2005) reported that 32 percent of the criminal offenses were property, 31 percent were violent crimes, 0.06 percent were homicide, 5 percent were weapons-related charges, 13 percent were drug-related charges, and 19 percent were some other type of charge.

Sentencing

Sentencing outcomes ranged across the studies. Sentencing youth to probation typically has three outcomes: probation (66%), suitable placement which is typically a congregate care type placement (16%), or a juvenile correctional placement (18%) (Ryan, Herz, Hernandez, & Marshall, 2007). CY status appears to have impacted these sentencing decisions with only 58 percent receiving probation, 21 percent going to a congregate care setting, and 21 percent being placed at a juvenile correctional facility; comparatively, non- CY receive probation (73%), suitable placement (11%), and juvenile corrections (16%) (Ryan, Herz, Hernandez, & Marshall, 2007).

In the study by Huang, Ryan, and Herz (2012), most youth were sentenced to probation (35%), while suitable placements and corrections accounted for 16 percent each, 12 percent had their cases deferred, and 17 percent had cases dismissed. Baskins and Sommers (2011) reported CY have a higher likelihood of being sentenced to juvenile correctional settings than their non-CY counterparts. Ryan, Herz, Hernandez, and Marshall (2007) reported that African American

and Latino males who were CY were more likely to sentenced to juvenile correctional facilities than their white male CY counterparts, even when controlling for factors such as age, maltreatment history, and charge. Youth charged with drug offenses were also more likely to be sentenced to a correctional facility when compared to youth charged with a property crime (Ryan, Herz, Hernandez, & Marshall, 2007).

Other findings

Only one study examined sexual orientation or gender identity. Irvine and Canfield (2015) found that youth who identify as LGBTQ who are removed from the home have increased likelihood of juvenile justice involvement. Further, they report that gender non-conforming youth are more likely to report a history of family rejection than other youth. Physical abuse rates were more than double for LGBTQ youth and four times greater for gender non-conforming youth (Irvine & Cranfield, 2015).

Tropitzes and colleagues (2011) found that graduation from high school was the only significant mediating variable against crossover for youth in their study. Only one study assessed the impacts of poverty directly, finding that youth in foster care who come from families living in poverty had greater risk for crossover (Vidal et al., 2017).

Discussion

Results from this scoping review cover a broad area for youth in foster care who cross into juvenile justice. Several things can be taken away from the current state of research. First, studies currently are utilizing data almost primarily from the juvenile justice systems and examining backward into child welfare. This approach provides a foundation for knowledge on CY; however, future research should examine youth prospectively from the child welfare system

to predict juvenile justice involvement. Most of the studies included in this review cover youth from large metropolitan areas. Few examine rural areas or youth at a national level.

Second, multiple researchers who have discussed programming for CY identify the need for strong cross-system collaboration (Olafson, Goldman, & Gonzales, 2016; Walsh & Jaggers, 2017; Wright, Spohn, Chenane, & Juliano, 2017). Structural changes and supports are necessary for cross-system collaboration to be effective (Haight, Bidwell, Marshall, & Khatiwoda, 2014). Challenges include getting systems to work together, creating a structured formal process, and engaging professionals to be committed to the process (Wright & Spohn, 2016). Youth involved in the juvenile justice system need trauma informed care, particularly those who come from a background with child welfare involvement (Cervantes, 2014; Ford, Kerig, Desai, & Feierman, 2016).

Finally, models for identification of youth in foster care who have not yet crossed into juvenile justice need to be developed. The CYPM in use in 90 jurisdictions in 20 states with the aim to reduce dual-adjudication, use of out of home placement, disproportionality across systems for youth of color, and the use of congregate care (Center for Juvenile Justice Reform, 2015). While systems like the CYPM have shown great progress in reducing recidivism among CY, less work has been accomplished in reducing crossover from occurring. While the CYPM is the only model addressed specifically in this review, other models have been used with CY (e.g.: Abbott & Barnett, 2015; Bala, Finlay, & Filippis, 2015; Cervantes, 2014; Ryan, 2010; Siegel, 2009; Tuell, Heldman, & Wiig, 2013). The reports cited here did not meet criteria for inclusion in this review.

Any scoping review of this kind is limited in some distinct ways. To keep the question broad and allow for the greatest inclusion of information, the quality of the papers was not a

criterion used to exclude. When possible, I have attempted to reference that the cited article did not use statistically robust techniques or failed to report necessary information to make that conclusion. Only one study attempted any quasi-experimental design (Haight et al., 2016) which is likely to be expected in any area of emerging research such as this one. Future research should focus on more rigorous designs. Locating unpublished work, technical reports, or studies with "negative" results is always difficult. I have attempted to be as broad and inclusive as possible but may have missed important work. With 90 jurisdictions running just one of the models available for CY, it is likely that technical reports about the progress in those localities are missing from this analysis. Finally, because the terminology is new for this population and because we have just begun to recognize CY as a population of interest, data from studies conducted that include CY may not have been included because they were not identified in way that allowed the search to locate the articles.

Conclusion

Through a scoping review of the literature, I have presented the evidence available to date on the population of youth known as Crossover Youth. Adolescents with involvement in the child welfare and juvenile justice systems have unique needs that are just beginning to be understood by researchers, policymakers, and practitioners. Future research should continue to examine the needs of CY.

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Table 1: Articles Included in the Review

Authors	Year	Purpose	Type	Sample size	Sample type	Location	Statistic	Primary finding
Abrams, L., Shannon, S., & Sangalang, C.	2008	Benefit and limitations of a 6 week transitional living program for incarcerated offenders. Recidivism outcomes, risk factors, compare crossover youth and non-crossover youth.	Peer reviewed article	N = 83	Administrative records	Large urban city in the upper Midwest of the United States	T test, chi square, log regression	Youth in the Transition Living Program had higher recidivism rates than other youth. TLP youth also committed more new felony offenses.
Baglivio, M., Wolff, K., Piquero, A., Bilchik, S., Jackowski, K., Greenwald, M., & Epps, N.	2016	To examine if the timing of child welfare experience has a differential effect on recidivism among deep-end Crossover Youth (youth adjudicated as delinquent and incarcerated).	Peer reviewed article	N = 12955	Administrative records from Juvenile Justice System	Florida (statewide data)	Structural Equation Modelling	Adverse childhood events were significant predictors for child welfare placement type for all youth, but only predicted recidivism for White and Hispanic youth. Early involvement in child welfare

								increased recidivism risk.
Baskin, D., & Sommers, I.	2011	Does form of maltreatment, placement type, or placement stability impact delinquency?	Peer reviewed article	N = 1235	Stratified, matched control, administrative records	Los Angeles county	T-test, regression, survival analysis	Congregate care placements significantly predict CY. Violent crime more associated with longer time in care while non-violent crime more associated with older age at referral.
Chuang, E., & Wells, R.	2010	Examined associations for 3 dimensions of collaboration between local child welfare and juvenile justice agencies—jurisdiction, shared information systems, and overall connectivity—and the youths' odds of receiving behavioral health services.	Peer reviewed article	N = 178	National Survey of Child and Adolescent Well-Being	81 counties in 30 states across the United States	Logistic regression	Youth connected to more than one system have greater odds of receiving needed mental health or substance use treatment. Comorbidity decreased rate of treatment though. Did not assess link between mental health or

								substance use and crossover.
Coulton, C., Crampton, D., Cho, Y., & Park., J.	2016	To identify the proportion of juvenile justice youth who had child welfare history; To identify which involvement occurred first and if demographic or other differences were predictors	Foundation report	N = 11,441	Administrative records, linked child welfare and juvenile justice county records	Cuyahoga County, OH	Descriptive	Found that 65% of youth in juvenile justice had a history of child welfare involvement. More youth with violent first offenses had a history of child welfare involvement than youth who had no involvement. Only descriptive.
Dannerbeck-Janku, A., Peters, C., & Perkins, J.	2014	Examines female offenders to identify models to predict subsequent violent behavior.	Peer reviewed article	N = 5737	Administrative records	Missouri state	chi square, regression	Maltreatment, Mental health diagnosis, substance use, academic performance predicted juvenile justice involvement. Mediators did not appear to have an influence

Dirig, M.	2016	To explore types of offenses as mediated by types of abuse and gender.	Dissertation	N = 89	Administrative data from a law firm for juvenile cases	San Diego, CA	Chi-square	Neglect was associated with violent and non-violent crimes for males. Over half of youth were in congregate care. No analysis of differences among groups
Haight, W., Bidwell, L., Choi, W., & Cho, M.	2016	Report outcomes from the Crossover Youth Practice Model with regard to recidivism	Peer reviewed article	N = 57 (for CY)	Administrative records, program records	Large city in the Midwest	Quasi-experimental comparison groups, logistic regression	CYPM had lower rates of recidivism compared to the control group and compared to the historical groups created with admin data
Herz, D., Ryan, J., & Bilichik, S.	2010	Identify what characteristics among crossover youth are more likely to result in receiving harsher dispositions and higher recidivism rates.	Peer reviewed article	N = 581	Administrative records	Los Angeles county	Logistic regression	First time offenders who are older more likely to recidivate. Substance use and truancy more than doubled risk.

Huang, H., & Ryan, J.	2014	Are specific neighborhood characteristics found in placements of child welfare that contribute to delinquency?	Peer review article	N = 2360	Admin records birth cohorts 1983-84	Chicago, Illinois	Path analysis	Instability in placement associated with greater risk for delinquency. Placement in neighborhoods with more disadvantage predicts delinquency.
Huang, H., Ryan, J. & Herz, D.	2012	Characteristics of crossover youth and the reported and predicted incidence of subsequent maltreatment and re-offending.	Peer review article	N = 1148	Admin records	Los Angeles County child welfare and juvenile justice	Logistic regression	More than one report of maltreatment history increases risk for recidivism by 56%. Congregate care placement increases risk for violent crime
Huang, H., Ryan, J., Sappleton, A., & Chiu, Y.	2015	Investigates the association between post-arrest placement decisions and recidivism.	Peer review article	N = 213	Administrative records	Los Angeles county	Regression, chi square, ANOVA	A single change in placement increased crossover risk by 10%.
Irvine, A., & Cranfield, C.	2015	To examine the prevalence of sexual and gender minorities	Peer reviewed article	Not listed	Survey of youth with child welfare history in 7	Not listed	Descriptive; not listed, possibly t-test	LGBTQ youth in foster care at greater risk for juvenile justice

		involved in the juvenile justice system			juvenile detention centers			involvement. LGBTQ had physical abuse rates that were double other youth. Gender non-conforming youth had physical abuse 4 times greater. Unclear how this was done.
Kolivoski, K.	2012	To examine factors that predict crossover among foster youth	Dissertation	N = 794	Administrative records	Allegheny County, PA	Logistic regression	All placement types, including family foster homes and kinship, were predictive of crossover; however, congregate care was predictive of chronic juvenile justice involvement
Lee, S., & Villagrana, M.	2015	Relationship of risk and protective factors to recidivism among juvenile offenders and crossover youth	Peer reviewed article	N = 2743	Administrative records	Large urban county in the U.S.	CPH regression; multivariate CPHR	Being male increases risk for crossover with African American males having the greatest risk. CY had

								higher risk across all life domains than non-CY.
Moore, S.	2016	To determine if placement type and stability can predict juvenile offense for African American female foster youth.	Dissertation	N = 330	Purposive sample of Administrative records	South Carolina	Zero-inflated Poisson regression	African American girls were more likely to crossover if they had congregate care placements or more placements. Neither could predict offense type.
Onifade, E., Barnes, A., Campbell, C., Anderson, V., Peterson, J., & Davidson. W.	2014	Examining the predictive validity of the YLS/CMI risk assessment tool for crossover youth.	Peer reviewed article	N = 1280	Administrative records	Midwest of the U.S.	ANCOVA chi square. Log regression	YLS could not accurately predict risk for CY but did predict risk for other juvenile offenders.
Ryan, J.	2006	Identify and determine the individual and group level factors associated with recidivism for youth in a	Peer reviewed article	N = 286	Administrative records	City in the Midwestern U.S.	Hierarchical non Linear Modeling	No differences for youth with substantiated versus non-substantiated cases. Placement in

		Positive Peer Culture program.						congregate care after arrest most likely predictor of recidivism.
Ryan, J.	2012	Investigate whether the reason for placement was associated with the subsequent risk for arrest.	Peer reviewed article	N = 5528	Administrative records	Washington state	Regression	No differences by race for crossover. African American youth with more than removal from the home did have higher risk. Child behavior as removal reason most predictive.
Ryan, J., Abrams, L., & Huang, H.	2014	Examines the risk of recidivism for 1st time violent juvenile offenders based on court outcome: in-home probation, congregate care, and probation camp.	Peer reviewed article	N = 2504	Administrative records	Los Angeles county	Multinomial regression	Risk for recidivism more than doubled for youth placed in non-family settings. Males, African Americans, and older youth less likely to have family-based placement settings.

Ryan, J., Herz, D., Hernandez, P., Marshall, J.	2007	Investigates that relationship between child welfare status and 2 judicial outcomes: case dismissal and probation.	Peer review article	N = 69,009	Administrative records	Los Angeles county	Logistic regression	Youth from child welfare receive harsher placement sentences from juvenile courts. Racial minorities less likely to have case dismissed and more likely to have court ordered placement. Child welfare involvement is not associated with dismissal.
Ryan, J., Marshall, J., Herz, D., Hernandez, P.	2008	Examining the effects of placement in congregate care for child welfare youth who become crossover youth.	Peer reviewed article	N = 8226	Administrative records	Los Angeles county	chi square survival analysis, regression	A single instance of placement in congregate care doubles risk for crossover. Risk for crossover more than 80% higher for males and for African Americans.
Ryan, J. & Testa, M.	2005	Attempting to identify if delinquent	Peer reviewed article	N = 18,676	Administrative records	Cook County, Illinois	Logistic regression; chi-square	Physical abuse most predictive of crossover.

		behavior precedes placement instability in child welfare youth.						Placement instability only associated with crossover for males.
Ryan, J., Testa, M., & Zhai, F.	2008	To improve the understanding of juvenile delinquency in the child welfare system, tests the aspects of social control theory within the context of foster care.	Peer reviewed article	N = 278	Administrative records	Illinois state	regression, survival analysis	Perception is important. Positive youth perception of their placement and school decrease risk. Reports of attachment to placement decreases risk.
Ryan, J., Williams, A., & Courtney, M.	2013	Determining whether neglect is associated with recidivism for mod and high risk juvenile offenders	Peer reviewed article	N = 19,833	Administrative records	Washington state	Crosstabs, chi-square, and t-test, Cox regression	Substance use predicted recidivism even when controlling for all other variables. Neglect and substance use combined had highest risk.
Snyder, S., & Smith, R.	2015	Assess if youth with unsubstantiated investigations have distinct subtypes of	Peer reviewed article	N = 432	National Survey of Child and Adolescent Well-Being II	81 counties, 30 states in the United States	LCA, regression	Unsubstantiated cases reduced risk for delinquency in males; however,

		delinquency compared to youth with substantiated claims.						substantiated cases increased the risk for males. Marijuana use was the most common delinquent behavior.
Topitzes, J., Merskey, J., & Reynolds, A.	2011	To assess the association between maltreatment and offending behavior among minority youth by gender	Peer reviewed article	N = 1539	Chicago Longitudinal Study	Chicago, IL	Structural Equation Modelling	The only mediator to risk was high school graduation. Maltreatment history predicted crossover for males but not females; however, it was associated with adult criminal justice involvement for both males and females.
Vidal, S., Prince, D., Connell, C., Caron, C., Kaufman, J., & Tebes, J.	2017	Examine and explore how patterns of risk (severity and chronicity of maltreatment, adverse family	Peer reviewed article	N = 10850	Administrative records linking state juvenile justice records with	Rhode Island	Chi-square, Cox regression	Having more than one maltreatment investigation increased risk for crossover. Neglect was

		environment) affect transition into juvenile justice			NCANDS data			predictive of crossover but physical abuse and sexual abuse were not. Minority youth had greater risk.

Chapter Three

Crossover Youth: A nationally representative study to identify predictors of crossover from foster care to juvenile justice

(Target: Children and Youth Services Review)

Abstract

Youth in foster care who cross in to the juvenile justice system are known as Crossover Youth (CY). Until recently, CY were seldom studied as a distinct population in either system of care. The present study examined national foster care data (AFCARS and NYTD) for predictors of crossover among adolescents in foster care. Logistic regression was used for three outcomes: adjudication as a delinquent, incarceration, and adjudication plus incarceration. Outcomes indicate that predictors of risk vary across outcomes but become more pronounced for youth with more involvement in the juvenile justice system.

Keywords: Crossover youth, foster care, juvenile justice, risk

1. Introduction

Delinquency rates among youth in foster care are about 50% higher than among youth not involved in the child welfare system (Sickmund & Puzzanchera, 2014). Ryan and Testa (2005) estimated that 60% of youth in the juvenile justice system have some previous experience with child welfare. Youth who have experience in both the child welfare system and the juvenile justice system are known as Crossover Youth [CY] (Griffin, 2014). Identifying factors that impact crossing over from the child protective system into the juvenile justice system is essential to developing interventions targeting youth success and derailing the criminal pathway of many United States adolescents. According to a scoping review of literature on CY, no national studies have been conducted to examine this population (Crawford, forthcoming). Using national data on youth in foster care, the present study identifies predictors of crossover among adolescents.

1.1 Crossover Youth Literature

In 2015, over 400,000 youth are in foster care in the United States (HHS, 2016). Approximately 1.7 million youth have delinquency cases processed through courts in the United States each year (Sickmund, Sladky, & Kang, 2013). Decades of research have shown that youth who enter foster care are at an increased risk for future involvement in the juvenile justice system (Dannerbeck-Janku & Jahui, 2010; English et al., 2002; Lee & Villagrana, 2015; Ryan, 2012). Most research on CY, however, has focused on their outcomes in the juvenile justice system (Herz & Ryan, 2008). In their systematic review, Gypen, Vanderfaeillie, De Maeyer, Belenger, and Van Holen, 2017 found that 20 to 60 percent of youth who aged out of care had involvement in the criminal justice system before the age of 25; youth who had previous involvement in the juvenile justice system were at the greatest risk for adult criminal justice activity.

For child welfare professionals to assess criminogenic risk for youth in their care, the factors that influence the relationship between child welfare involvement and juvenile justice must be better understood. Crawford (forthcoming) found that little research into these effects has been undertaken. Herz et al. (2012) cited a paucity of research to define risk factors for CY as a primary factor preventing child welfare agencies from implementing comprehensive screenings for risk of foster youth crossing over. To determine if an at-risk youth can be prevented from crossing over, child welfare systems need to screen youth and identify those most at risk in a consistent and systematic way, which has not yet begun in a comprehensive manner (Herz et al., 2012).

1.2 Risk Factors for Crossover

Research has begun to examine risks that may contribute to crossover. While no national studies have examined this phenomenon, studies using local data have been conducted. In some cases, the results of the studies contradict each other regarding risk. Ford, Grasso, Hawke, and Chapman (2013) found that youth with multiple experiences of childhood trauma had increased delinquency. A majority of research that has examined reason for removal has found that physical abuse is the biggest predictor of juvenile justice involvement (e.g.: Dannerbeck-Janku, Peters, & Perkins, 2014; Lansford et al., 2002; Lee & Villagrana, 2015; Huang, Ryan, & Herz, 2012; Postlethwait, Barth, & Guo, 2010; Ryan, Williams, & Courtney, 2013); however, Jonson-Reid and Barth (2000) found that youth removed from the home for neglect had the highest risk for crossover.

Length of time in care has also been determined to be a risk for crossover, with differing results depending upon the study. Herz and Ryan (2008) found that CY typically remained in foster care considerably longer than other youth. Baskins and Sommers (2011) found that youth

removed from the home at an older age (hence a shorter time in care) had greatest risk for crossover, while Dannerbeck-Janku et al., (2014) found it was youth who were removed at young ages (and hence longer stays in care) who had the greatest risk. All studies that have examined congregate care placements have found significantly increased risk for juvenile justice involvement for youth in these settings (e.g.: Baskins & Sommers, 2011; Herz & Ryan, 2008; Lee & Villagrana, 2015; Ryan, 2012; Ryan, Marshall, Herz, & Hernandez, 2008; Ryan & Testa, 2005); however, kinship care has had divergent results. Baskins and Sommers (2011) found kinship placement to be a protective factor against delinquency while Ryan, Hoang, Herz, and Hernandez (2010) found increased risk for delinquency among kinship-placed youth.

1.3 Theoretical foundation: General Strain Theory

General Strain Theory (GST) (Agnew, 1992, 2001, 2006) is often used as a theoretical lens to understand juvenile delinquency. Agnew (1999) wrote that strain includes things like poverty, family dysfunction and disruption, and witnessing trauma or violence. The effects are strain are cumulative in a person's life with more instances of strain representing increased risk (Agnew, 2001). Strain theory focuses on negative relationships with others. Resorting to delinquent behavior is a response to strain used to minimize the impacts of the strain on the individual (Agnew, 1992, 2001, 2006).

Considerable empirical support exists for GST and juvenile crime. Hoskin (2011) found that abrupt moves and frequent moves, things often associated with foster care, are areas of strain. Long stays in out of home care and multiple placements were examined as factors of strain that increased delinquency (Barn & Tan, 2012). Multiple studies have confirmed Agnew's assertion that the effects of strain are cumulative and increase risk for delinquency (e.g.: Eitle, 2010; Maschi, Bradley, & Morgen, 2008; McMahon & Fields, 2015; Snyder et al., 2016; Weller,

Bowen, & Bowen, 2013). Maschi, Morgen, Bradley, and Hatcher (2008) found that internalizing factors mediate the effects of strain in females but have no effect on males who are more prone to externalize behaviors related to strain in the form of delinquent behavior. Mazerolle and Piquero (1997) demonstrated that strain increased risk for delinquent behavior regardless of the type of strain being measured. Two recent latent class analyses of youth aging out of care have found housing instability, homelessness, unemployment, and gang involvement were representative of classes with the highest risk levels for delinquent behavior (e.g.: Miller, Paschall, & Azar, 2017; Rebbe, Nurius, Ahrens, & Courtney, 2017). Recently, multiple studies have begun to examine the effects of overt racism and racialized microaggressions as strain related to delinquency (e.g.: De Coster & Thompson, 2017; Hoskin, 2013; Kaufman, Rebellon, Thaxton, & Agnew, 2008; Mancino, Navarro, & Rivers, 2016; Martin et al., 2011; Peck, 2013).

1.4 Present Study

The present study examines national foster care data for predictors of crossover into juvenile justice among youth in foster care. The Adoption and Foster Care Analysis Reporting System (AFCARS) contains data on every youth in foster care in the United States (NDACAN, 2016). The National Youth in Transition Database (NYTD) contains data on youth in foster care who have received independent living services paid for by the Chafee Foster Care Independence Program [CFCIP] (NDACAN, 2014). Both AFCARS and NYTD are compiled annually from all 50 states, the District of Columbia, and Puerto Rico. The data files were linked using a unique identifier for each child. Using these national datasets to build on the knowledge of Crossover Youth, the present study seeks to answer the following research questions: 1) What foster care-related factors can predict involvement in the juvenile justice system? 2) Can service provision mediate the risk of crossover for youth in foster care?

2. Methods

2.1 Datasets

AFCARS is reported annually. Data from 2011 through 2015 were used for this analysis. NYTD is reported as two separate datasets. The NYTD Services file is reported annually from child welfare administrative data on services provided to youth in their care. Years 2011 through 2015 were used in this analysis. The NYTD Outcomes is a survey given to youth the year they turn 17 in foster care. Follow up surveys are conducted biennially when the youth is 19 and 21. The first complete cohort from the Outcomes report is 2011, 2013, and 2015. These years were used for this analysis. Data from AFCARS 2011 were used as the baseline for inclusion. Analysis was limited to youth who had either a yes or no response on the NYTD Services question: adjudicated as a delinquent (N=113,430).

2.2 Dependent Variables

Three dependent variables were considered for crossover. Adjudication as a delinquent is a variable in the NYTD Services file. This reports that a finding has been made by a judge that the youth is delinquent. The variable was coded dichotomously, with any report of adjudicated across the years as a yes. The adjudication may have been before or after entering foster care. The second dependent variable is Incarceration in the Outcomes NYTD file. Youth were asked in the baseline year if they ever experienced incarceration; in follow up years, they were asked if they had experienced incarceration since they last completed the survey. The variable was coded dichotomously, with any report of yes across the surveys as a yes. Incarceration includes even a single night of detention; therefore, youth may be incarcerated and never subsequently be adjudicated. Finally, a variable that combined Incarceration and Adjudication was created to compare youth who experienced both of the outcomes to those who had experienced only one.

For this variable, all youth included are Crossover Youth. The purpose of this examination was to determine if youth who had both outcomes showed different predictors than youth who had only one of the outcomes.

Table 1: Dependent variable distribution

	No		Yes	Total
Adjudication	91778		21652	113430
Incarceration	9764		6967	16731
	Adjudication only	Incarceration only	Both	Total
Combined	3196	476	1925	5597

2.3 Foster care variables

AFCARS contains multiple variables related to placement in foster care. The file included 15 potential reasons for removal; additionally, a variable was created that compared physical abuse, sexual abuse, neglect, and child behavior by collapsing options. Because of skewness, number of removals from home was changed to a dichotomous variable comparing one and more than one removal. Eight placement types were considered in the original file. New variables were also created to collapse placements to dichotomous comparisons: one for congregate care to all other types of placement and one for kinship care to family foster homes. Termination of parental rights and having ever been adopted were also variables related to experience in foster care. Time in care, time in current placement, and total time in care were each changed from days to months for analysis.

2.4 NYTD Service variables

Service variables are reported from the administrative data collected by the states for any service paid for by CFCIP funds. For analysis, a variable was created for each service that combined each year of the report. Any answer of yes was coded as the youth having received

that service. A no was coded if the youth has never received the service. Services are broken into two categories: psycho-educational/training services and monetary support services.

Psycho-educational and training services include the following: attending school, connection to an adult, special education services, independent living needs assessment, post-secondary education support, career support, employment training/support (job readiness programs), budget and finance education, housing education, health education, family support/marriage education, mentoring, and academic support.

Monetary support services included the following: Supervised independent living, room and board financial support (not foster care), education assistance (not student loans or grants), and other financial assistance (from the state or child welfare agency, not including welfare programs).

2.5 NYTD Outcome variables

Several outcomes are related to public support including the following: Public financial assistance, public food assistance, public housing assistance, and Medicaid. Additionally, more traditional outcomes are included such as the following: Full and part time employment, employment skills, social security (all types), educational aid (all types), other financial assistance, attending school, connection with an adult, homelessness, substance use, having children, and being married.

3. Results

3.1 Sample characteristics

Males (n=57,049) and females (n=56,735) were evenly divided. Caucasian (n=57,501, 50.7%) and African American/Black (n=37,136, 32.7%) comprised the majority of youth by race. Hispanic youth were nearly 20 percent of the sample (n=22,009). The average age of the

sample is 15.03 (SD = 2.44) with 17 years old being the median age. Poverty was measured using Title IV-E Eligibility as a proxy variable; about 40 percent of the sample came from homes of origin living in poverty (n=45,123). Disabilities included in the analysis were emotional, mental retardation, visual/hearing, physical, other disability, and multiple disabilities. Emotional disability was the most common (n=23,765) with multiple disabilities closely behind (n=17,046). Finally, the structure of the family of origin was considered by comparing single parents homes (n=61,840) to other family types (34,358).

Foster care variables are reported in AFCARS regarding information related to time in care. The average age of removal from the home was 12.69 (SD = 3.63) with a median age of 14. Time in care is measured by days. For analysis, these were converted to months. Measurement includes months in current placement, months in care since removal, months in care from previous removals, and total lifetime months in care. Reason for removal included multiple variables; however, for analysis this was collapsed to four categories: physical abuse, sexual abuse, neglect, and child behaviors. Neglect was the most common (51.5%) followed by child behavior (21.9%), and sexual abuse (6.3%) was the least common. Over 40 percent of youth were placed in family foster homes while placements were about evenly divided among kinship homes and institutional placements. A variable to examine congregate care (34.1%) was created by combining group homes and institutional placements. The number of removals was collapsed to one removal and more than one removal (34.1%).

3.2 NYTD Services and Outcomes

Services paid by CFCIP are targeted to preparing youth for emancipation and emerging adulthood (NDACAN, 2014). Reflecting this focus, academic support (60.2%) independent living services (57.1%), and career supports (50.5%) were the most commonly provided services.

Table 1: Sample Characteristics

Variables	% or Mean	SD
Demographic Variables		
Male	50.3	
Race		
African American/Black	32.7	
Asian	0.9	
Caucasian/White	50.7	
Hawaiian/Pacific Islander	0.3	
More than one race	5.1	
Native American	1.9	
Minority	40.9	
Hispanic	19.4	
Tribal membership	4.0	
Age	15.03	2.44
Poverty	39.8	
Diagnosed disability	44.8	
Emotional disability	42.0	
Mental Retardation	<.1	
Visual/Hearing	<.1	
Other disability	.1	
Multiple disabilities	12.4	
Single parent home	30.3	
AFCARS Foster care variables		
Removal reason (collapsed)		
Physical abuse	13.4	
Sexual abuse	6.3	
Neglect	51.5	
Child behavior	21.9	
Placement type		
Foster home	40.2	
Kinship	11.5	
Pre-adoptive home	1.6	
Group home	13.3	
Institution	18.0	
Supervised IL	4.0	
Runaway	5.0	
Trial home visit	5.8	
Congregate care	34.1	
More than 1 removal	34.1	
Termination of parental rights	16.8	
Age at removal	12.69	3.635

Services related to budgeting and financing (46.8%), health and risk education (48.2%), and family and marriage education (42.4%) were also common. Monetary support services were much less common. Just over a third of youth received "other" financial supports while slightly fewer than a third received educational financial support. Supervised independent living and room and board assistance were received by fewer than one in five youth.

Table 2: NYTD Services and Outcomes distribution

Service Variable	**%**	**Outcome variable**	**%**
Psycho-educational services		Full time employment	16.4
Special education services	29.2	Part time employment	29.6
Independent living needs assessment	57.1	Ever employed	39.0
Post-secondary education support	34.3	Employment skills	39.0
Career supports	50.5	Social security	19.5
Employment training	31.0	Education aid	19.5
Budget and finance	46.8	Public financial assistance	21.2
Health/Risk education	48.2	Public food assistance	21.2
Family/Marriage education	42.4	Public housing assistance	6.3
Mentoring	27.0	Other financial assistance	19.1
Academic support	60.2	Attending school	95.1
Monetary supports		Connection with adult	98.9
Supervised Independent living	17.2	Homeless	31.1
Room and board	18.4	Substance use	30.2
Education financial	27.3	Have children	19.1
Other financial	36.4	Married	1.4
Private Insurance		Medicaid	92.1
Other health insurance	23.3	Public welfare	13.7
Medical insurance	21.0	Public assistance	23.7
Mental health insurance	21.0		
Prescription insurance	19.4		

Few youth had full time employment but nearly 40 percent had been employed at some point. About one in five youth reported receiving some type of social security payment and a similar number reported receiving financial aid for education. Public assistance was uncommon with financial assistance (21.2%) and food assistance (21.2%) being the most common. Housing assistance (6.3%) was the least common. Nearly all youth reported attending school (95.1%) and even more reported having a positive adult connection (98.9%). Almost a third of youth had experienced homelessness (30.1%) and substance use (30.2%). While marriage was uncommon (1.4%), having children (19.1%) was considerably more common. See Table 2 for a full list of variables.

3.3 Analyses

Analyses consisted of binary logistic regression to test each independent variable on each of the three dependent variables to determine which variables to include in the regression models. For the final models, variables were treated equally in the analyses (Abu-Bader, 2011).

Model 1: Adjudication as a delinquent

Of the 69 variables tested, 52 were significant predictors of adjudication and included in model one (See Table 3). Results from the binary logistic regression demonstrate that seven factors are predictors of adjudication as a delinquent. These factors are sex (β=1.048, *Wald*=14.489, $p<.001$, OR=2.852), total months in care (β=-.017, *Wald*=9.439, $p=.002$, OR=.983), independent living needs assessment (β=1.226, *Wald*=11.771, $p=.001$, OR=3.409), employment training (β=-.932, *Wald*=8.312, $p=.004$, OR=.394), budgeting and financing (β=-.868, *Wald*=8.944, $p=.003$, OR=.420), room and board assistance (β=1.012, *Wald*=8.598, $p=.003$, OR=2.750), and education financial support (β=-.759, *Wald*=4.711, $p=.030$, OR=.468).

Males had nearly three times the odds of adjudication. Every month in care increased odds adjudication by two percent. The odds for adjudication increased for youth who never received employment training (61%), budgeting and financing (58%), and education support (54%). Having an independent living needs assessment done and having room and board financial support increased the odds of adjudication (3.4 times and 2.7 times respectively).

Table 3: Final model for Adjudication as Delinquent (N=472)

Variables	ADJ Delinquent					
Nagelkerke r^2 =.222	b	Wald	p-value	OR	95%CI lower	95%CI upper
Sex	1.048	14.489	.000	2.852	1.663	4.893
Months in care (total)	-.017	9.439	.000	.983	.972	.994
IL needs assessment	1.226	11.771	.001	3.409	1.692	6.868
Employment training	-.932	8.312	.004	.394	.209	.742
Budget and finances	-.868	8.944	.003	2.750	1.399	5.407
Room and board assist	1.012	8.598	.003	2.750	1.399	5.407
Education finances asst	-.759	4.711	.030	.468	.236	.929

The results show that the overall model significantly predicts adjudication as a delinquent ($\chi^2_{(df=7)}$=67.537, p<.001). This model has a very good fit (-2 loglikelihood=385.222, Hosmer and Lemeshow $\chi^2_{(df=8)}$=9.585, p=.295). The overall model accounted for 22.2 percent of the variance in adjudication.

Model 2: Incarceration

Of the 69 variables tested, 41 were significant predictors of incarceration and included in model two. Results from the binary logistic regression demonstrate that seven factors are predictors of incarceration (See Table 4). These factors are sex (β=1.109, *Wald*=24.803, p<.001, OR=3.031), age at removal (β=.310, *Wald*=37.091, p<.000, OR=1.364), special education services (β=-.505, *Wald*=4.958, p=.026, OR=.603), career supports (β=-.460, *Wald*=3.970,

p=.046, OR=.631), room and board support (β=.784, *Wald*=7.828, *p*<=005, OR=2.189), education financial support (β=-1.096, *Wald*=16.659, *p*<.001, OR=.334), and number of placements (β=.155, *Wald*=40.294, *p*<.001, OR=1.113).

Males were three times more likely to be incarcerated than females. Every year older a youth was when removed from the home increased the odds of incarceration by 64 percent. Every new placement for a youth increased the odds of incarceration by 11 percent. The odds of incarceration increased for youth who did not receive education financial support (67%) and special education services (40%). Receiving room and board support more than doubled the odds of incarceration.

The results show that the overall model significantly predicts incarceration ($\chi^2_{(df=7)}$=116.760, *p*<.001). This model has a very good fit (-2 loglikelihood=518.218, Hosmer and Lemeshow $\chi^2_{(df=8)}$=4.446, *p*=.815). Overall, the model accounted for 29 percent of the variance in incarceration.

Table 4: Final regression model Incarceration (n=501)

Variables	Incarceration					
Nagelkerke r^2 =.233	b	Wald	p-value	OR	95%CI lower	95%CI upper
Child sex	1.109	24.803	.000	3.031	1.959	4.689
Age at removal	.310	37.091	.000	1.364	1.234	1.507
SPED services	-.505	4.958	.026	.603	.387	3941
Career support	-.460	3.970	.046	.631	.401	.993
Room/Board assistance	.784	7.828	.005	2.189	1.264	3.790
Education financial asst	-1.096	16.659	.000	.334	.197	.566
# of placements	.155	40.294	.000	1.167	1.113	1.224

Model 3: Combined adjudication and incarceration

Of the 69 variables tested, 39 were significant predictors of the combined variable and included in model three. Results from the binary logistic regression demonstrate that that ten factors are predictors of the combined outcome. These factors are Hispanic (β=.715, *Wald*=16.721, *p*<.001, OR=2.045), sex (β=.715, *Wald*=16.721, *p*<.001, OR=2.045), months in care (β=-.039, *Wald*=27.345, *p*<.001, OR=.962), removal reason, congregate care (β=.317, *Wald*=5.551, *p*<.018, OR=1.373), case plan goal, ever employed (β=-.348, *Wald*=5.978, *p*=.014, OR=.706), post-secondary education support (β=-.473, *Wald*=10.236, *p*=.001, OR=.623), family and marriage education (β=.400, *Wald*=8.062, *p*<=005, OR=1.492), and other financial assistance (β=.346, *Wald*=5.794, *p*=.016, OR=1.414).

Hispanic youth had more than double the odds of other youth to be adjudicated and incarcerated while males had three times the odds. Every month in care increased the odds of the combined outcome by 4 percent. Removal for physical abuse was the most predictive of this combined variable. Other removal types decreased the odds (neglect by 34%, sexual abuse by 65%, and child behavior by 54%). Youth with a case plan goal of reintegration had the lowest odds of the combined outcome. A case plan goal of OPPLA (aging out of care) resulted in a 52 percent increase in the odds of the combined outcome. Youth placed in congregate care had 67 percent greater odds for the combined outcome. Receiving other financial assistance and family and marriage education increased the odds of the combined outcome (59% and 51% respectively). Odds also increased for youth who had never been employed (30%) and for youth who did not receive any post-secondary supports (48%).

Table 5: Final regression model ADJ Delinquent and Incarceration (n=2112)

Variables Nagelkerke r^2 =.255	ADJ Delinquent					
	b	Wald	p-value	OR	95%CI lower	95%CI upper
Hispanic origin	.715	16.271	.000	2.045	1.445	.2895
Sex	1.139	66.058	.000	3.122	2.373	4.109
Previous Months in care	-.039	27.345	.000	.962	.948	.976
Removal Physical abuse		69.770	.000			
Removal Sexual abuse	-1.504	41.155	.000	.222	.140	.352
Removal neglect	-1.024	11.062	.001	.359	.197	.657
Removal child behavior	-1.055	51.725	.000	.348	.261	.464
Congregate care	.317	5.551	.018	1.373	1.055	1.788
CP goal (REN)		24.367	.000			
CP goal Kinship	-.501	1.026	.311	.606	.230	1.597
CP goal ADO	-1.006	2.883	.090	.366	.114	1.168
CP goal Long term FC	-.945	3.025	.082	.389	.134	1.127
CP goal emancipation	-.631	1.582	.209	.532	.199	1.422
CP goal Guardianship	-1.234	5.957	.015	.291	.108	.784
CP goal unestablished	-.1554	5.668	.017	.211	.059	.760
Ever employed	-.348	5.978	.014	.706	.534	.933
Post-Secondary support	-.473	10.236	.001	.623	.466	.833
Family/Marriage educ	.400	8.062	.005	1.492	1.132	1.966
Other financial asst	.346	5.794	.016	1.414	1.066	1.874

The results show that the overall model significantly predicts the combined outcome of incarceration and adjudication ($\chi^2_{(df=17)}$=346.370, p<.001). This model has a very good fit (-2 loglikelihood=1550.349, Hosmer and Lemeshow $\chi^2_{(df=8)}$=11.207, p=.190). Overall, the model accounted for 26 percent of the variance in the combined outcome of adjudication and incarceration.

4. Discussion

This study examined longitudinal data from three national datasets for youth in foster care in the United States. Results indicate that, while predictors for adjudication and for incarceration differ, areas of overlap exist. Being male is the only variable, however, that is significant in all three models. This is not surprising given the depth of research that identifies

males as being at greater risk (e.g.: Huang & Ryan, 2014; Lee & Villagran, 2015; Vidal et al., 2017). The risk for crossover for youth with only adjudication as a delinquent was 2 percent for each month in care; however this risk doubled for youth in the combined outcome with both adjudication and incarceration. While this may appear a small risk, many older youths have been in foster care since childhood. The average length of time in care for the sample was 30 months with a standard deviation of 29 months, indicating that many youths spent considerably longer in care than average. It should be noted that the combined outcome variable doubled the risk or each month in care which corroborate the findings from Herz et al., (2010) that CY have deeper penetration into the juvenile justice system than other youth. Providing funding for educational financing decreased risk for incarceration and for adjudication but did not impact the combined variable. It may be that youth with both outcomes may be ineligible for this assistance (due to criminal history) or may have more immediate needs to meet.

In each model, some significant variables were not in the anticipated direction. Youth who received room and board financial assistance had greater risk for adjudication and for incarceration. Further, youth with independent living needs assessments completed had increased risk for adjudication. Receipt of "other" forms of financial assistance increased the risk for the combined outcome as did having marriage and family education provided. A couple of things may explain these results. The secondary nature of the data does not allow an analysis of when the events occurred in relationship to each other. Quite possibly, as part of an adjudication finding, a judge may order an independent living needs assessment, for instance. Involvement in the juvenile justice system may necessitate the state provide housing through room and board assistance or other forms of financial help as well. Further research that can control for these temporal mechanics is needed.

In several areas of disagreement within the literature, this study may provide some insight. Regarding reason for removal, physical abuse was most predictive of risk for the combined outcome, supporting some other findings (e.g.: Ryan & Testa, 2005; Tropitzes et al., 2011). Youth who were older when first removed from home had increased risk for incarceration, while the longer a youth stayed in care increased the risk for adjudication and for the combined outcome. This is consistent with the literature presented above and may indicate that older youth enter care for delinquent or pre-delinquent behaviors, but youth who stay in care throughout their childhood have the greatest risk. Despite considerable evidence of disproportionality in the child welfare and juvenile justice systems, and conflicting evidence regarding the continuation of this as a risk for crossover, the present study found no link between race and adjudication, incarceration, or the combined outcome. By studying the data at the national level, differences among racial disparity within the states may have been masked. Future research may need to examine these data on a state by state level. Hispanic youth, however, had significantly greater risk for the combined outcome which indicates the need for further research.

4.1 Implications for policy and practice

Important takeaways are present from this research. First, services appear to matter. Preparing youth for emerging adulthood is a responsibility of the state when it assumes the role of parent. Services aimed at improving employment opportunities from employment training to career support to budgeting and financing education were all significant in one of the models.

Perhaps more importantly, factors related to foster care involvement emerged as significant predictors for all three outcomes. Specifically, length of time in care, case plan goal, reason for removal, and placement type were all predictors of the combined outcome. This can begin to allow researchers to examine potential risk assessment when youth enter care. More

than this, though, youth with the combined outcome of adjudication and incarceration begin to see services as less of a predictor and foster care outcomes as greater predictors.

In doing secondary data analysis, limitations must be noted. While adjudication as a delinquent and incarceration are both aspects of being CY, these are not perfect measures of the term. Youth who are arrested, processed by juvenile detention, released, and not adjudicated are not counted in either variable, but they are also CY. Furthermore, the incarceration variable is a self-report measure which limits its accuracy and it may include some youth who were incarcerated in adult jails. Despite the limitations of the variables, they provide some of the only options for analyzing CY at a national level.

Additionally, as noted above, it is not possible to know the order of occurrence of the independent or dependent variables. The dependent variable outcomes may have potentially occurred even before the youth entered foster care. While AFCARS and NYTD Services are administrative data regarding all youth, the NYTD Outcomes survey does not use randomized sampling techniques at follow up, so it is not generalizable to the population as a whole. Barth (1990) argued that youth who cannot be reached for inclusion or follow up may actually have worse outcomes since those included in studies of emerging adults are likely the ones more service-connected. Policy is often established at the federal level (Chafee Foster Care Independence Program, Foster Connections to Success and Increasing Adoptions Act), considerable leeway is often given to the states in implementation. State-level policy analysis may provide greater insight into specific needs of youth in that state.

5. Conclusions

Until recently, Crossover Youth were not recognized as a distinct population of youth in the foster care or juvenile justice systems. Consequently, research into CY has only recently

begun. An examination of national data for predictors of crossover has never been completed. Involvement in the juvenile justice system is a known risk for poorer outcomes in emerging adulthood. For child welfare workers to assist in preventing crossover, an understanding of risk is necessary. This research begins the development of a profile of risk so that assessment and intervention can take place.

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Chapter Four

Do services predict outcomes for youth aging out of care: A nationally representative examination

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Abstract

Youth who age out of foster care face myriad obstacles to success in emerging adulthood. Few studies have examined outcomes across the domain of need. The present study examined national data from the National Youth in Transition Database (NYTD) to assess outcomes across a spectrum of need. Service provision while in foster care was used to predict outcomes for incarceration, homelessness, public assistance, and employment. Findings indicate that intensive service provision may provide greater success, but that blanket services without regard to need may not be the best approach. Implications for policy and practice are discussed.

Keywords: foster care; aging out; outcomes; support services

Over 437,000 children and adolescents were in foster care in the United States by the end of the 2016 federal fiscal year (USDHHS, 2017), which represents an increase of about 40,000 youth in five years and the highest number in a decade (USDHHS, 2012). Nearly 30,000 youth had case plan goals for long term foster care or emancipation in 2016; however, the percent of youth with these case plan goals has shrunk over the past five years from just over 11% to 7% (USDHHS 2012; 2017). Exiting care due to emancipation, commonly referred to as "aging out," decreased from 11% of all exits in 2011 to 9% of all exits in 2016 (USDHHS 2012; 2017).

The National Survey of Child and Adolescent Well-Being [NSCAW] (2013) reported that the odds of an exit from care to a goal other than emancipation begin to diminish rapidly after 18 months approaching nearly zero by three years. As such, efforts have also been made to reduce the length of time in care for youth. In 2011, over 39,000 youth (16%) had spent three or more years in out of home care, while in 2016 the number dropped to approximately 30,000 youth (13%) (USDHHS 2012; 2017).

Despite efforts to decrease the numbers of youth who age out of care, youth who do emancipate continue to face myriad challenges in emerging adulthood (Courtney, Dworsky, Lee, & Rapp, 2010). Funding provided by the Chafee Foster Care Independence Program (CFCIP) requires states to provide services to youth to prepare them for adulthood (NDACAN, 2014). Over the past decade, considerable research has examined outcomes for youth aging out of care and the impact of service provision on those outcomes.

Literature Review

Emerging adulthood is defined by ages 18 to 26 (Rosenberg & Kim, 2017) and is characterized by the exploration of identity related to work, relationships, spirituality and sexuality (Johnson, Crosnoe, & Elder, 2011; Meeus, van de Schoot, Keijsers, & Branje, 2012;

Salvatore & Taniguchi, 2012). Youth who age out of care experience this transition much differently than other youth (Grey, Berzenski, & Yates, 2015; Gypen, Vandefaeillie, De Maeyer, Belenger, & Van Holen, 2017; Lee & Morgan, 2017), with experiences characterized by a loss of central support systems in their lives (Berzin, Rhodes, & Curtis, 2011; Havlicek, 2011).

Outcomes for Youth Who Age Out

Youth who age out of care face a myriad of obstacles to successful emerging adulthood (Eastman & Putnam-Hornstein, 2018; Lee & Berrick, 2014; Lockwood, Friedman, & Christian, 2015). Gypen, Vanderfaeillie, De Maeyer, Belenger, and Van Holen (2017) conducted a recent systematic review of the literature on outcomes specific for youth aging out of care and found that youth struggled across all life domains (i.e., employment and income, housing, substance use, criminal involvement, education, and health). Considerable literature has examined each of these domains.

Employment/Income

Obtaining consistent employment is seen as an indicator of self-sufficiency for youth who age out of care. As such, a lack of employment is a frequent concern since studies have shown that youth who age out of care are significantly more likely to use public assistance and welfare than other emerging adults (Byrne et al., 2014). In their systematic review on outcomes for youth aging out, Kang-Yi and Adams (2015) found that nearly all youth had been employed; however, most experienced periods of unemployment and few had been continuously employed more than a year. Naccarato, Brophy, and Courtney (2010) also conducted a systematic review with similar results for employment. Most youth were employed inconsistently with large variations reported by age and geography (Naccarato et al., 2010). Additionally, employed youth who had aged out of care had significantly lower income than other employed youth (Naccarato et al., 2010). In a

qualitative study, Rutman and Hubberstey (2016) found that youth who age out commonly noted that they can only rely on themselves for financial support and meeting their basic needs.

Education

Educational risk begins with completion of high school and extends to post-secondary education for youth who age out. Gillum et al. (2016) found that youth who age out face considerable hurdles to graduation from high school and to entering college. Others have found that the risk to educational attainment is greatest for youth who do not complete high school or their GED before exiting care (Barnow et al., 2015; Hernandez & Naccarato, 2010; Morton, 2015; Phillips et al., 2015). Strolin-Goltzman, Woodhouse, Suter, and Werrbach (2016) found that youth who age out are significantly less likely to attend college than their peers, even if they complete high school before exiting care. Unemployment and homelessness were both significantly associated with failure to complete educational goals (Rosenberg & Kim, 2017). Involvement in the juvenile justice system prior to emancipation also decreases the odds of post-secondary education (Lee, Courtney, Harachi, & Tajima, 2015).

Housing

Youth who age out of care have some of the highest rates of homelessness among emerging adults. Risk for homelessness increases with a history of trauma, maltreatment, and placement instability (Dworsky, Napolitano, & Courtney, 2013; Lee & Morgan, 2017). In their study examining youth who aged out in Oklahoma, Crawford, McDaniel, Moxley, Salehezadeh, and West-Cahill (2015) found the risk for future homelessness among emancipating youth was up to 80%. Dworsky, Napolitano, and Courtney (2009) found that half the youth in the Midwest Study experienced homelessness. Using latent class analysis, Miller, Paschall, and Azar (2017) found four distinct classes of youth exiting care; however, housing instability and homelessness

were characteristics present across all four classes. Studies have also shown that experiencing homelessness before exiting care significantly increases the risk of homelessness after exiting care (Reynolds, Hasson, & Crea, 2018; Rosenberg & Kim, 2017).

Substance use

Substance use among emerging adults remains a concern (Rutman & Hubberstey, 2016). Rates of substance use, including alcohol and marijuana, in the last 30 days among youth who have aged out of care are similar to other youth their age; however, lifetime prevalence of use and use of "hard drugs" (e.g., cocaine, amphetamines) remain higher for youth who have aged out of care (Braciszewski & Stout, 2012; Johnston, Miech, O'Malley, Bachman, Schulenberg, & Patrick, 2018). Braciszewski and Stout (2012) found that the diagnosis of a substance use disorder is significantly higher for youth who have aged out of care. Youth with a history of substance use and a history prior to exiting care report considerably worse outcomes across multiple domains (Crawford et al., 2015).

Criminal activity

Involvement in the adult criminal justice system is often examined as an outcome for youth who have aged out of care. Rebbe, Nurius, Ahrens, and Courtney (2017) found that youth involved in the criminal justice system had high reports of gang involvement, trading sex for money, and increased mental health concerns. Gypen et al. (2017) found for youth who had aged out of foster care that risk of criminal justice involvement by age 24 ranged from 20% to 60% in the studies under review. Lee, Courtney, Harachi, and Tajima (2015) found that risk for criminal justice involvement increased for youth who did not complete high school and for youth who had juvenile justice involvement prior to exiting care. In their latent class analysis, Vaughn, Shook, and McMillen (2014) found that youth with histories of high levels of physical abuse and neglect

were in the class with the highest criminal justice involvement while youth with the fewest reports of physical abuse and neglect were in the class with the lowest criminal justice involvement. The largest class in their study comprised nearly 70% of the participants and was identified with the lowest risk for criminal justice involvement while the high risk group comprised fewer than 10 percent of the study (Vaughn et al., 2014). Risks associated with aging out of care and criminal justice involvement began to diminish after age 21 and no discernable difference in risk was found by age 24 if the youth had not had any involvement with the adult criminal justice system (Lee, Courtney, Harachi, & Tajima, 2015).

Mental Health

Mental health concerns for youth exiting care are often examined as part of outcomes for youth. Youth aging out of care have higher rates of mental health diagnoses than other youth (Scozzaro & Janikowski, 2015) with some estimates stating as many as half of youth in foster care have a mental health diagnosis (Scannapieco et al., 2007; Pecora et al., 2003). Histories of trauma are often associated with youth aging out and with increased mental health diagnosis (Hagan, Roubinov, Mistler, & Luecken, 2014). Despite findings that continuing mental health treatment is associated with improved outcomes for youth aging out (Kang-Yi & Adams, 2015), service use declines after exit from care (Piel & Lacasse, 2017). Barrett, Katsiyannis, Zhang, and Zhang (2014) found that youth with any mental health diagnosis had significantly higher risk of criminal offense. Services that mediate risks associated with a mental health diagnosis were extended foster care, providing insurance coverage, and specialized programming for transition (Lockwood et al., 2015). Even with proper services in place, Embrett, Randall, Longo, Nguyen, and Mulvale (2016) found that service coordination was the key to improving continuity of care.

Interventions

Often, research examining interventions for youth aging out of care focus on one or two outcomes. Much of this research examining "what works" has found mixed results. Lee, Courtney, Harachi, and Tajima (2015) found that involving youth in pro-social activities decreased the risk of criminal involvement. Strong education, stable placement, and exiting care while living with a relative were significant mediators to risk (Gypen et al., 2017). Connection to a mentor or a supportive adult has been found to improve youth decision making, stability, and health (Ahmann, 2017; Blakeslee, 2015; Greeson & Thompson, 2017; Naccarato & DeLorenzo, 2008; Piel & Lacasse, 2017; Scannapieco & Painter, 2014; Thompson, Greeson, & Brunsink, 2016). Fowler, Marcal, Zhang, Day, and Landsverk (2017) found risk for homelessness primarily associated with foster care factors (e.g., reason for removal, case plan goal, and placement type), while service provision, including independent living services, was not significantly associated with a decrease in homelessness risk. Other studies have indicated positive support for services such as independent living, extended foster care, career preparation, budgeting, and health education in improving outcomes overall for youth aging out (Chor, Petras, & Pérez, 2018; Kang-Yi & Adams, 2015; Samuels & Pryce, 2008).

Brown and Wilderson (2010) found that housing programs targeted to youth aging out of care significantly decreased homelessness for youth while housing programs not designed specifically for youth aging out had no discernable impact. Transition services improved outcomes in education, financial literacy, and homelessness (Scannapieco, Smith, & Blakeney-Strong, 2016). In a systematic review, Everson-Hock et al. (2011) reported that transition support services increased employment and education attainment but had no impact on homelessness, crime, or mental health treatment.

Present study

Despite an abundance of research on youth who age out of care, no study has examined both national, longitudinal data and an array of service provisions across multiple outcomes. Using the data from the first complete cohort in the National Youth in Transition Database (NYTD), the present study seeks to examine the impacts of service provision for youth aging out of foster care on the self-reported outcomes of those youth by answering the following research questions: 1) What NYTD Services can predict outcomes for youth who are aging out of care? 2) Are financial services more predictive of outcomes than other services? 3) Does the number of services predict outcomes? and 4) Can a model of service provision be developed to target outcomes?

Methods

Data

The (NYTD) is comprised of two reports: the Services file and the outcomes file that began in 2011 (NDACAN, 2016). The Services file is collected annually from administrative reports collected at the local jurisdiction level for all 50 states, the District of Columbia, and Puerto Rico. The file contains reports of youth who have received any service paid for by CFCIP, which provides funding to the States for youth aging out of foster care. For analysis, services were considered in two groups: financial services and other services. The financial services include supervised independent living, room and board financial assistance, education financing (does not include grants or student loans), and other financial assistance. The other Services include independent living needs assessments, academic and post-secondary supports, career preparation and employment training, budget education, risk prevention programming, mentoring, housing education, health education, substance use referrals, and family and marriage

education. All Services are coded as dichotomous with any report of having received the service indicating a Yes.

The Outcomes file began in 2011 as a biennial report of youth aging out of care. The survey was given to youth in foster care who were turning 17 during the report year. Follow up surveys were done in 2013 and 2015 with the youth. The 2011 to 2015 reports comprise the only complete cohort of NYTD Outcomes data. Reported outcomes include employment, public assistance, homelessness, incarceration, and having children. Outcomes are reported as a dichotomous measure if the youth has experienced the event or not. For purposes of analysis, variables for full time employment and part time employment were merged to create a variable of employed versus not employed.

Demographic measures include race, Hispanic origin, age, and gender. Age is not considered in the analysis because all youth are within a small range of the same age at the time of the surveys (the years they turn 17, 19, and 21 respectively). Only youth who responded to all three time points in the Outcomes survey are included in the analysis (N=12,405).

Analysis

The NYTD Services file and the NYTD Outcomes file were linked using a common unique identifier for each youth. The files may also be linked to the Adoption and Foster Care Analysis Reporting System (AFCARS), which contains administrative data on every child in the foster care system in the United States (NDACAN, 2016). Using AFCARS 2011 as a baseline, each year of the NYTD Services was linked and then each year of the NYTD Outcomes was linked. Demographic variables are linked to the AFCARS data but no other variables from that data were used in this analysis; only the NYTD data are used.

A series of binary logistic regressions were conducted to investigate the relationship between each of the potential services utilized by youth on each of the outcomes of interest (i.e., Employment, Public Assistance, Homelessness, Incarceration). Only services that indicated a significant relationship were included in the final models.

Results

Sample Characteristics

The sample was split evenly across gender with approximately 52% of participants reporting as female. The majority of participants identified as Caucasian (58.6%) or Black (30.8%), with a large proportion that identified as non-Hispanic (78.5%). All participants in the study are age 17 when they complete the first survey and are 21 at the final reporting time.

Predictors of Employment

Table 1 summarizes the results of the logistic regression analyses conducted to ascertain the effects of different services on the likelihood of participants being employed. The overall model was statistically significant ($\chi^2(10) = 559.502$, $p = .000$). Model fit was further assessed using Hosmer and Lemeshow goodness of fit test and was found to be statistically significant ($p = .000$) suggesting a poor fit. Overall, the final model accounted for almost 6.0% of the variance in employment (Nagelkerke $R^2 = .059$). All of the predictor variables included were statistically significant indicating that multiple factors have an impact on the likelihood participants will obtain employment. This included two educational services (i.e. budget/financial education and health education), programs providing monetary assistance (i.e., room and board financing, education financial assistance, other financial assistance), and various other supports, such as mentoring, academic support, combined services, substance use referrals and education support were also found to have an impact.

Youth who received budget and financial education were at 23.7% decreased odds of being employed, while those who received health education were at 49.0% decreased odds of being employed. Those that received mentoring or room/board assistance were also at decreased odds of being employed (14.8% and 15.5% respectively). In contrast, odds of being employed increased by 12.1% if participants received education financial assistance and by 11.4% if they received other forms of financial assistance. Youth who received academic support services were at 23.7% decreased odds of being employed. Youth who had a substance use referral were only 3% less likely to have been employed. For each additional service provided, youth were 18.7% more likely to have been employed.

Table 1: Logistic Regression of Employment on Different Measures of Services Provided (n = 12,565)

Type of Service	B	S.E.	Wald	p-value	Exp (B)	C.I. Lower	C.I. Upper
Budget/Financial Education	-.270	.052	26.848	.000	.763	.689	.845
Health Education	-.673	.054	158.114	.000	.510	.459	.566
Mentoring	-.161	.048	11.037	.001	.852	.774	.936
Room/Board Assistance	-.169	.050	11.402	.001	.845	.766	.932
Education Finance	.114	.046	6.165	.013	1.121	1.024	1.227
Other Financial Assistance	.108	.044	5.946	.015	1.114	1.021	1.215
Academic Support	-.271	.049	30.890	.000	.763	.693	.839
Substance Use Referral	-.029	.010	9.011	.003	.971	.953	.990
Education Support	.014	.005	7.445	.006	1.014	1.004	1.024
Combined Services Total	.171	.012	196.821	.000	1.187	1.159	1.215

Predictors of Public Assistance

Table 2 summarizes the results of the binary logistic regression analyses conducted to ascertain the effects of different services on the likelihood of participants receiving public assistance. The overall model was statistically significant ($\chi^2(5) = 96.832$, $p = .000$) Model fit

was further assessed using Hosmer and Lemeshow goodness of fit test and was found to not be statistically significant (p = .432) suggesting a good fit. Overall, the final model only accounted for 1.5% of the variance in utilizing public assistance (Nagelkerke R^2 = .015) suggesting the need to investigate other potential factors influencing this outcome.

Table 2: Logistic Regression of Public Assistance on Different Measures of Services Provided (n = 8,453)

Type of Service	B	S.E.	Wald	p-value	Exp (B)	C.I. Lower	C.I. Upper
Supervised Independent Living	-.352	.064	30.200	.000	.704	.621	.798
Room/Board Assistance	-.182	.060	9.237	.002	1.200	1.067	1.350
Other Financial Assistance	-.207	.050	16.941	.000	1.229	1.114	1.357
Education Support	-.022	.008	7.389	.007	.978	.962	.994
Combined Services Total	.028	.008	13.261	.000	1.028	1.013	1.044

Youth who received supervised independent living services were 29.6% less likely to be utilizing public assistance, while those who received room/board assistance were at 20% decreased odds for using public assistance. Youth who received any other form of financial assistance were at 22.9% decreased odds for using public assistance. Receiving education support resulted in only a slight decrease in odds (2.2%) of using public assistance. For each additional service received, the odds of utilizing public assistance increased by 2.8%.

Predictors of Homelessness

The results of the binary logistic regression analyses conducted to ascertain the effects of different services on the likelihood of participants experiencing homelessness is in Table 3. The overall model was statistically significant ($\chi^2(3) = 38.424$, p = .000). Model fit was further assessed using Hosmer and Lemeshow goodness of fit test and was found be statistically significant (p = .004) suggesting a poor fit. Overall, the final model only accounted for less than

1% of the variance in homelessness (Nagelkerke R^2 = .004) suggesting the need to investigate other potential factors influencing this outcome.

Table 3: Logistic Regression of Homelessness on Different Measures of Services Provided (n = 12,519)

Type of Service	B	S.E.	Wald	p-value	Exp (B)	Lower	Upper
Other Financial Assistance	.112	.043	6.651	.010	1.119	1.027	1.218
Education Support	-.011	.005	4.007	.045	.989	.979	1.000
Combined Services Total	.019	.006	10.547	.001	1.019	1.007	1.030

Predictors of Incarceration

The results of the binary logistic regression analyses conducted to ascertain the effects of different services on the likelihood of participants experiencing incarceration is in Table 4. The overall model was statistically significant ($\chi^2(9) = 443.040$, $p = .000$). Model fit was further assessed using Hosmer and Lemeshow goodness of fit test and was found be statistically significant ($p = .003$) suggesting a poor fit. The final model accounted for approximately 5% of the variance in the outcome of incarceration (Nagelkerke R^2 = .047) suggesting the need to investigate other potential factors influencing this outcome.

For several predictors related to educational and career supports youth who did not receive these services had increased odds of being incarcerated. Youth who did not receive education support had increased odds of being incarcerated by 39.4%. Youth who did not receive financial support across multiple predictors (education financial assistance = 40.3% and other financial assistance = 35.3%) also demonstrated increased odds for experiencing incarceration. Budget/financial education and housing education were similar and demonstrated a 23.9% and

17.0% increase in odds of being incarcerated for youth who did not receive these services. Youth who received a substance use referral were 5.8% more likely to report experiencing incarceration. In addition, for each additional service a youth received their odds of incarceration increased by 16.2%.

Table 4: Logistic Regression of Incarceration on Different Measures of Services Provided (n = 12,506)

Type of Service	B	S.E.	Wald	p-value	Exp (B)	Lower	Upper
Education Support	-.502	.048	106.985	.000	.606	.551	.666
Career Support	-.195	.049	15.584	.000	.823	.747	.907
Budget/Financial Education	-.273	.051	29.111	.000	.761	.689	.840
Housing Education	-.186	.051	13.129	.000	.830	.751	.918
Supervised Independent Living	-.353	.053	44.318	.000	.703	.633	.780
Education Financial Assistance	-.516	.046	123.992	.000	.597	.545	.654
Other Financial Assistance	-.435	.044	99.411	.000	.647	.594	.705
Substance Use Referral	.056	.007	62.145	.000	1.058	1.043	1.072
Combined Services Total	.150	.011	175.144	.000	1.162	1.136	1.188

Discussion

NYTD services were found to be predictive of each of the outcomes examined for youth who are aging out of care; however, different combinations of services were found to be predictive of different outcomes. Not all forms of financial assistance were found to be predictive of employment, public assistance, homelessness, and incarceration. Only the broadly defined “other forms of financial assistance” demonstrated predictive value across all domains. Interestingly, other predictors for specific forms of financial assistance were not consistently predictive across outcomes. Nonetheless, the number of services provided did predict each of the

outcomes and indicated that more services resulted in better outcomes related to employment. Based on the current study, a model of service provision cannot yet be determined without further examination into other potential factors that may influence and achieve the desired outcomes for youth exiting foster care.

Literature has shown the outcomes examined in this study are often interdependent. Experiencing homelessness can impact the ability to find employment and negatively impact educational goals, being employed impacts whether a youth will rely on public assistance, involvement in justice system can impact educational goals, while a lack of educational attainment itself is connected to increased risk of involvement in criminal justice. Although this study did not identify a strong model for service provision that is applicable to all youth aging out of care, it did reinforce that each youth is unique and should be approached with targeted support aimed at their individualized circumstances. Not all youth are going to need the same types of services because their risk for these particular outcomes will be varied, instead findings support that there is no one particular service that ensures the desired outcomes. Some youth are going to need more specialized services, while others are going to need a broader safety net of support. It must be acknowledged that the majority of youth will likely struggle across multiple domains thus a holistic approach that is targeted at the specific needs of that particular youth is likely to have the greatest impact.

Due to the ongoing challenge of limited resources it is of critical importance to identify which support services have the greatest likelihood of producing positive outcomes. This study provides some insight into where resources should potentially be targeted since services that include financial provisions are the most frequently occurring across all domains.

This suggests two things: 1) we must invest in our youth in order to see positive outcomes (e.g., being employed and not using public assistance) and 2) youth encountering greater challenges (i.e., involvement with criminal justice system, experiencing homelessness) will need more financial support. Providing other forms of financial assistance was the only service common across all domains. It is possible that while some youth require specific financial assistance (e.g., for housing or education expenses), it is the unforeseen challenges that require monetary support that need to be addressed. It would be of benefit to further explore this category of support in order to better understand the amounts and purposes for the expenses in this category to see how it compares to other categories of financial support. Interestingly, specific forms of housing support were not predictive of homelessness which could indicate that while financial support to obtain housing may be important, providing youth with more financial autonomy may be of greater benefit. In contrast, it may be that youth that are eligible for this type of monetary support are at the lowest risk for homelessness and thus are predisposed to better outcomes.

With the breadth of literature emphasizing the need to teach youth skills to be successful, it is notable that not receiving these types of educational services was only predictive of employment and incarceration. This may indicate that youth with a higher likelihood of obtaining employment are less likely to need services like budgeting and health education in order to be successful in this domain. In contrast, those who are at greatest risk for incarceration may be in greater need of these types of services. These programs do not seem to be successful in predicting the use of public assistance or homelessness further indicating that it is not possible to "educate" our youth towards positive outcomes in these areas. Rather, these programs should be directed towards those youth with higher risk.

Across all domains, more services were predictive of the outcomes under investigation. We caution against making the assumption that a broad, unfocused approach will be effective and reiterate that services should be targeted to the needs of the youth. As would be expected, youth who receive more supports are more likely to be employed suggesting that pouring resources into youth can improve this outcome. Alternatively, it could be argued that youth who receive the most services are connected with the broadest support network and thus may be predisposed to better outcomes. This notion was not as clearly reflected in the other outcomes examined. The challenge remains in understanding the timing of these services in relation to the outcomes. It is unclear if youth did not receive services because they were not eligible, not accessible, or the youth did not need the service. Without knowing the timing of services, it is difficult to ascertain if practitioners are being more reactive rather than proactive. Findings may imply that services are being poured into youth in response to their negative outcomes (i.e., using public assistance, experiencing homelessness, and being incarcerated) taking a reactive approach. Further research to examine the relationship should be explored.

Limitations

Results should be interpreted with caution due to the limitations of the data set examined. All data was self-reported by youth who were able to be located and agreed to participate across multiple time points. Since only youth who responded to all three time points were included, the demographic makeup of these youth may be fundamentally different than those who were not able to be found for the follow up time points. Youth who are receiving a combination of services and are actively participating in multiple programs will be easier to locate and may already be at a reduced risk compared to youth with the worst outcomes. The subset of youth who are unlikely to be found to receive services in the first place, much less complete surveys

and be located across time, may be absent from the dataset altogether. Another limitation is that the outcome surveys relied upon self-report data. It is possible that youth may have interpreted questions differently and thus not provided as accurate of a response as desired. For example, youth are asked if they are homeless, but are able to define homelessness for themselves. As a result, while a youth may not have a permanent place to stay (e.g., couch surfing) they themselves may not define their situation as experiencing homelessness. Findings should also be interpreted with caution due to the inability to discern the timing of the outcome variables in relation to the predictors. The NYTD dataset is based on whether a youth has ever experienced the outcome rather than being time limited (e.g., since aging out of care, since last follow up). Since it is not possible to know if the predictive factors examined were provided before, because of, or after the outcomes examined occurred it is not possible to definitively conclude a direct relationship between predictors and outcomes.

Conclusion

Youth aging out care need continued support to enter into adulthood successfully. Targeted service provision has been shown effective for specific outcomes. For many emerging adults, however, outcomes across many domains of their lives are connected. Service planning and provision should recognize the inter-connectedness of need and prepare services that address areas across spectrum of need.

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Chapter Five

Conclusion: What does this all mean?

The population of youth who have involvement with child welfare and juvenile justice, known as Crossover Youth (CY), was thoroughly explored in this dissertation through three separate articles:

1. A scoping review of the literature on CY
2. A logistic regression on three outcome measures of crossing over in a national sample of youth in foster care
3. A logistic regression analysis of outcome predictions based on service provision for youth aging out of foster care

This final chapter discusses the related themes from the three articles, tying together the outcomes in relationship to the theoretical foundation of the study, General Strain Theory. Overall limitations to the study will be discussed. Finally, next steps in future research will be explored as a way to further policy, practice, and research.

Related themes

The scoping review identified several clusters of research around CY which detailed specific concepts that need further review. What appears to be well-documented is that CY have considerably worse outcomes after entering the juvenile justice system than other youth (Abrams, Shannon, & Sangalang, 2008; Huang, Ryan, & Herz, 2012; Lee & Villagrana, 2005). As an exception to studies which focus on high recidivism rates, Haight, Bidwell, Choi, and Cho (2016) provide guidance on other reasons to identify CY in the juvenile justice system and offer services targeted to their specific needs.

While recidivism is an important outcome and risk for youth in the juvenile justice system, the primary goal of this research is identifying predictors for crossover with the goal of preventing juvenile justice involvement. The scoping review demonstrates that much less has

been identified in terms of predictors of crossover (independent of being in foster care itself). The link between congregate care placement and juvenile justice is evident; however, this association is likely a reflection of delinquent behavior resulting in a placement before juvenile justice contact. Considerable disagreement on the impact of other foster care factors was evident in the scoping review.

To clarify these discrepancies, I attempted to identify factors related to foster care involvement in the second paper. Despite strong models that predicted each outcome, the results were mixed with regard to foster care variables. Total time in care predicted adjudication as a delinquent and the combined adjudication/incarceration variable. This finding is supported by Baskins and Sommers (2011) and Vidal and colleagues (2017). Incarceration was predicted by two variables (age at removal and number of placements). Removal from the home at an older age significantly predicted incarceration. While Ryan and Testa (2005) similarly found that older youth were at greater risk, Baglivio and colleagues (2016) found the opposite.

Together, the findings for age at removal for incarceration and length of time in care regarding adjudication and the combined outcome appear to contradict each other. While it may be possible since the outcome measures are different, it seems highly improbable that older youth being incarcerated are never adjudicated or that youth in care a long time who are being adjudicated never end up incarcerated. I theorize that youth who are removed from the home at an older age are being removed for delinquent behaviors that result in arrest, which leads to significant findings. Youth with long term involvement in the child welfare system, however, are being adjudicated as delinquents followed by dispositions that include incarceration (hence the combined outcome being significant). While each of these outcomes is concerning, for child welfare professionals, identifying the risks associated with long term placement in out of care

may be the most important. Findings from the scoping review indicate that the risk for delinquency rapidly increases after 40 months in out of home placement, while the odds of exiting care for anything other than emancipation is significantly diminished (NSCAW, 2013; Vidal et al., 2017).

The combined outcome in the second paper compared risks for youth with both adjudication and incarceration to youth with only one of those outcomes. The measure represents what Herz et al. (2010) characterized as a deeper and further penetration into juvenile justice system by CY. Because of this, we would expect to see other foster care related variables as significant predictors and we did. Youth removed from the home for physical abuse were significantly more likely to experience the combined outcome than youth removed from the home for other reasons. Most of the literature in the scoping review referred to "maltreatment" as a reason for removal without differentiation between types of maltreatment (e.g.: Huang & Ryan, 2014; Huang, Ryan, Sappleton, & Chiu, 2015; Ryan, 2012; Ryan & Testa, 2005). Topitzes et al. (2011), however, did report that physical abuse was most predictive of future delinquency.

Examining outcomes for youth who age out of care is not precisely a measurement for CY despite one outcome being incarceration; however, considerable research has linked outcome of youth who age out to criminal justice involvement as adults (e.g.: Gypen et al., 2017; Vaughn, Shook, & McMillan, 2014). Lee, Courtney, Harachi, and Tajima (2015) specifically linked adult offending to foster care and juvenile justice. Most studies examine only a single outcome for youth aging out of care, focusing on preventing homelessness or improving employment. Because outcomes for youth are interconnected, by identifying what services work to improve outcomes such as housing and employment, criminal justice involvement outcome may also be improved. In paper three, we argue that a holistic approach needs to be taken to address the

myriad needs of emerging adults in a way that encourages positive outcomes across domains in their lives.

General Strain Theory

General Strain Theory [GST] (Agnew, 1992) has been used to theorize the underlying causes of juvenile crime. Agnew's (2001) six criteria for assessing strain are applicable to many aspects of foster care involvement. For most youth in foster care, the strain resulted in harm (#3), was unjust (#4), violated social norms (#6), and was undeserved (#1). Agnew (1999) noted that the public nature of strain also increases its impact. Foster care, in many ways, is a public strain. While details of a case may be "confidential" and not given out to everyone, in few instances would a youth be placed in foster care without it being well-known by most they are a "foster kid." Social support, coping skills, and self-conception are primary mediators of strain (Agnew, 1992, 2001); however, these are precisely skills that maltreated youth may be missing.

Examining the three papers individually and collectively, we begin to see a model of application of GST for youth in foster care. Aspects related to their involvement in out of home placement almost certainly contribute to aspects of strain. Increasing number of placements creates strain in multiple ways: diminished social supports, re-"outing" oneself as the foster kid, decreases self-conception. Furthermore, as the number of placements increase, the risk for congregate care placement increases. Agnew (1999) identified that presence of criminal others increases strain as well. Increasingly long times in out of home placements may feel unjust, as if the youth is being punished for the actions of others. The accumulation of strain over time contributes to increased risk for youth to crossover.

While significant risks are evident for many youth in care, regression models from papers two and three do provide some insight into potential mediators not listed by Agnew. In each of

the three models in paper two, specific service provision decreased the risk for crossover. Specifically, budget and finance education, employment training, education financial supports, career supports, special education services, and other financial supports all helped to decrease the risk for crossover. Collectively, these results, combined with those from paper three, may be examined as educational and financial supports indicating that youth need to be taught skills to live independently and need financial resources to assist in meeting that goal.

Criminological theory seeks not just to understand why crime occurs, but also through understanding, find ways to decrease crime (Duffee & Allen, 2007). Creating profiles of risk to assess youth in foster care for potential juvenile justice involvement is one way to do this. By exploring the aspects of strain that contribute most to risk and through a better understanding of how services may mediate that risk, we will better be able to minimize crossover which is ultimately the goal of this research.

Contributions

This dissertation has made several important contributions to the literature. First, because the field of research into CY is relatively new and the terminology is only just emerging, a comprehensive review of relevant literature had not been completed. The scoping review provides researchers, as well as policymakers and practitioners, an idea of what is known about CY, what work is currently being done with CY, and where the next steps lie in moving forward with CY.

The analysis of the Adoption and Foster Care Analysis Reporting System (AFCARS) and National Youth in Transition Database (NYTD) to predict crossover represents the first national study of CY prediction ever completed. Findings from this study can be used to begin the development of a risk assessment instrument for use by child welfare professionals. Furthermore,

the study may be used in establishing a national baseline for comparison of states with regard to crossover risk and service provision.

Finally, the third paper may be the first study to examine outcomes and service provisions across multiple domains for youth aging out of care. Considerable research supports the need to assist youth entering emerging adulthood from foster care systems; however, I did not locate any comprehensive studies that measured outcomes across a variety of needs. The NYTD Outcomes file used in this study has only been available to the research community since the end of 2016. It represents the first fully complete cohort of youth in that study. Rosenberg and Kim's (2017) study represents one of the first published works using this cohort of youth.

Limitations

While each paper lists limitations individually, some recognition of the collective limitations of this dissertation is necessary. I am hindered by terminology and language in the scoping review. More than this, the biggest limitation in the scoping review is that much of the work being done on CY is done at the local level. Reports from these agencies would be difficult to gather, if they even exist. For example, I know that Dallas County, Texas has a program where CY are identified. I also know that Sedgwick County, Kansas has a similar program. Neither is represented in the scoping review though.

Using secondary data can be challenging. Beyond being unable to determine if the outcome occurred before the independent variables, I am also unable to determine the accuracy of the self-report measures in NYTD. The outcomes I measured for crossover are only proxies of what I would measure if I designed the survey questions myself. One of the biggest limitations of the study is that no state or federal agency collects data on this population. Examining CY requires the linking of data sources to extrapolate pertinent information.

Implications

Implications from these studies will be addressed regarding practice and policy followed by areas of future research.

Practice and Policy

Several important implications present themselves for policy and practice. For youth in foster care over long periods, poor outcomes and multitudes of risks are obvious from the research literature. Practice would currently emphasize permanency. While this seems to be working, continued emphasis may be needed. Beyond this, we know that some youth will remain in care for many years despite all efforts to the contrary. Training social workers to recognize this as a risk factor in itself is important. Because so many adolescents in foster care have involvement with juvenile justice, training child welfare professionals in criminology may be beneficial as well. Courses in forensic social work provide opportunities for such training if the curriculum includes aspects of criminology into the discussion.

Policies should reflect the growing consensus that CY are a distinct and separate population in the child welfare and juvenile justice systems. While some local jurisdictions have begun to identify CY and asses their needs, no state gathers data on CY. This should change. The federal government does not mandate the identification of CY or the collection of data on this population either. The Chafee Foster Care Independence Program (CFCIP) should be amended to include the collection of data regarding youth who cross from foster care into juvenile justice. Furthermore, the Juvenile Justice and Delinquency Prevention Act (JJPDA) has not been reauthorized since 2002 (having expired in 2008). The JJPDA should be reauthorized with amendments to include the identification of and gathering of data on child welfare experience for youth entering into the juvenile justice system. Finally, youth in the juvenile justice system

should be assigned unique AFCARS identifier so that data from the juvenile justice systems and foster care systems of the states can be linked.

Future Research

Building on this research, I have several next steps to follow:

1. A latent transition analysis of youth in foster care to identify classes of youth with higher and lower risk for crossing over (the original paper three) to be conducted this summer with Dr. Michael Killian.
2. An analysis at the state level to create policy recommendations based on service provision and adjudication/incarceration by state (to be started this summer at the Summer Research Institute with Cornell University and the Bronfenbrenner Center)
3. An analysis of girls in foster care who give birth prior to emancipation to examine service provision (before and after release) and outcomes following release (to be started in the fall with Dr. Holli Slater.)
4. A theoretical application of General Strain Theory to the findings presented here (to be started this summer).
5. To start risk assessment modeling for identifying youth in foster care at risk for crossing over (to start next year with Dr. Karen Kolivoski).
6. Obtain NDACAN child level data for further analysis (next year)

Conclusion

Crossover Youth represent an emerging population of interest for the research community. This dissertation and its three papers have sought to examine the population for predictors of crossover. A growing body of work has identified that CY are a distinct population of youth with needs that differ from other youth in foster care and other youth in juvenile justice.

We know much about the outcomes of CY and the results are sobering. Preventing crossover may be the best way to prevent the poor outcomes associated with it. By identifying the predictors of crossover, we can begin to dismantle the foster care to prison pipeline.

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Appendix A: Data sets

This dissertation contains data from three different reports over the course of five years. The data files for AFCARS came in 5 sets (2011, 2012, 2013, 2014, and 2015). The data files for NYTD Outcomes came in 8 sets (March 2011, September 2011, March 2013, September 2013, March 203, September 2013, March 2014, September 2014, March 2015, and September 2015). NYTD Outcomes does not include 2012 data. NYTD Services data came in 10 files (March 2011, September 2011, March 2012, September 2012, March 2013, September 2013, March 203, September 2013, March 2014, September 2014, March 2015, and September 2015). These files have all been combined into a single dataset which is explained in the data analysis section of the appendix.

AFCARS data

AFCARS is a federal reporting system for children in the foster care systems in the United States. All 50 states, the District of Columbia, and Puerto Rico are required to report data for children over whom they have placement authority or who have been adopted from a system where the state had placement authority. Additionally, AFCARS reports information on birth parents of children in the foster care system and on foster and adoptive parents who have had children placed in their homes.

The AFCARS report is issued annually based on the federal fiscal year from October to September. Two files are created: one for foster care data and one for adoption data. The foster care file contains child demographic information and foster care related information such as number of times in out of home care, current placement information, case plan goal, reason for removal, and others. The adoption file contains information related to children who were adopted

from the foster care system in the past year. This research will not utilize the AFCARS adoption file.

For youth with more than removal instance, the data included reflect the most recent stay in care unless otherwise noted by that variable (ex.: total number of days in foster care—all episodes). Variables 74 and higher were all derived from the original data and were not reported by the agencies themselves. Their accuracy is dependent upon the accuracy of the data reported.

The following list offers a comprehensive description of variables and explanations of the variables found in AFCARS. The number is parenthesis is the variable number in the AFCARS file.

1. Sex (9): Child sex is reported dichotomously as male or female. If the sex of the child is not known, it is reported as unknown.
2. Race (10-15): Race is reported as a dichotomous variable for the following race categories: American Indian/Alaskan Native, Asian, Black/African American, Hawaiian/Pacific Islander, White, Unable to determine race.
3. Hispanic Ethnicity (16): Hispanic ethnicity is reported as a dichotomous variable yes and no.
4. Diagnosed disability (17). This variable was reported as a yes, no, or not yet determined. Yes indicated a qualified professional had diagnosed the child with at least one of the following disabilities: Mental retardation, visually or hearing impaired, physically disabled, emotionally disturbed. No indicated that a qualified professional has determined that the child was not disabled. Not yet determined indicated that an assessment of the child by a qualified professional had not yet occurred.

5. Mental retardation (18): This variable was reported as yes or no. Yes was reported if the child had been diagnosed with any of the following: Downs syndrome, borderline intellectual functioning, hydrocephalus, microcephaly, or mental retardation (all degrees). For youth with none of these diagnoses, the answer was no.
6. Visually or hearing impaired (19): The variable was recorded as yes or no. Yes indicated the child had been determined to have one of the following: Having a visual impairment that may significantly affect educational performance or development; or a hearing impairment, whether permanent or fluctuating, that adversely affects educational performance. The preceding was determined through a diagnosis of one of the following: Blindness or low vision, cataracts, congenital anomaly of the eye, glaucoma, diabetic retinopathy, retinal detachment and defects, visual disturbances, deaf, or eating loss. For children with none of the following, the answer was no.
7. Physically disabled (20): The variable was recorded as yes or no. Yes indicated the child had been determined to have a physical condition that adversely affects the child's day to day motor functioning, such as cerebral palsy, spina bifida, multiple sclerosis, orthopedic impairments, and other physical disabilities. Other examples include arthritis; brittle bones/osteogenesis imperfection; cerebral palsy; club foot; diplegia; multiple sclerosis; myasthenia gravis; paralysis, paraplegic, quadriplegic, or diplegic; poliomyelitis; rheumatoid arthritis (juvenile); or spina bifida. For children with none of these, the answer was no.
8. Emotionally disturbed (21): The variable is recorded as a yes or no. Yes responses indicate the diagnosis of one of the following: Page 17

9. Other diagnosed condition (22): Other diagnoses condition is recorded as a yes or no response. This is on page 19
10. Child ever adopted (23): Four response types are available for this. Not applicable, yes the child has been legally adopted, no the child has never been adopted, and unable to determine.
11. Age at adoption (24): Five responses are possible to this question: Not applicable, less than 2 years old, 2 to 5 years old, 6 to 12 years old, 13 years and older, and unable to determine.
12. Total number of removals (25): This is a continuous variable reported as the number of times the child has been removed from their home of origin. (This includes an adoptive placement).
13. Number of placements in current instance of removal (26): This is a continuous variable reported as the number of different placements the child has had during the current removal instance. Trial placements in the home of origin are not counted.
14. Manner of removal (27): This variable indicates the manner in which the child entered placement. Options include voluntary, court ordered, and not yet determined. Voluntary removals indicate that an official voluntary placement agreement has been executed between the caretaker and the agency. The placement remains voluntary even if a subsequent court order is issued to continue the child in foster care. Court ordered placements indicate that the court has issued an order which is the basis of the child's removal. Finally, not yet determined means that neither a voluntary placement has been agreed upon nor has a court order been issued.

15. Reason for removal (28-42): These variables are each reported dichotomously as yes or no. A child may have more than one reason marked. The reasons include the following: physical abuse, sexual abuse, neglect, alcohol abuse by parent, drug abuse by parent, alcohol abuse by child, drug abuse by child, child disability, child behavior problem, parent death, parent incarceration, parent inability to cope, abandonment, relinquishment, and inadequate housing. A removal for child disability is included only if the removal decision was based, at least, in part on the disability of the child. Child behavior problems include running away.
16. Current placement (43): The current placement variables is determined by the placement of the child on the day of the survey. Options for placement include the following: Pre-adoptive home (A home in which the family intends to adopt); Foster family home with a relative (A kinship placement, whether licensed or not); Foster family home, non-relative (A licensed foster home); Group home (Licensed home providing 24 hour care in small group setting—up to 12 youth); Institution (Facility providing 24 hour care and treatment for youth who require separate care not in foster or group homes. Example: child care institutions, residential treatment facilities, and maternity homes.); Supervised independent living (Child is under agency supervision but without 24 hour adult care); Runaway (Child has run away from foster placement and is Absent Without Leave); Trial home visit (Child is in foster care but is currently on a trial placement at home for limited time). Placement is determined regardless of the length of time at the current placement.
17. Out of state placement (44): This variable is measured dichotomously as yes or no. Children placed in a state other than the one in which they entered into out of home placement are marked yes. Others are all marked no.

18. Case plan goal (45): This variable has eight options including each of the following: Reunification, Live with other relatives, Adoption, Long-term foster care, Emancipation, Guardianship, Case plan goal not yet established, and missing. Goals that are considered permanency goals include reunification, living with other relatives, adoption, and guardianship.
19. Principal caretaker structure (46): This variable measured the type of adult caretaker from whom the child was removed during the current foster care removal. Options for this variable include the following: Not applicable, married couple, unmarried couple, single female, single male, and unable to determine.
20. Principal caretaker year of birth (47): This is a continuous variable entered as a year.
21. Secondary caretaker year of birth (48): This is a continuous variable entered as a year.
22. Foster family structure (49): This is a categorical variable measuring the structure of the home in which the child is currently placed. Answers included each of the following: Not applicable, married couple, unmarried couple, single female, single male, and unable to determine.
23. First foster parent year of birth (50): This is a continuous variable entered as a year.
24. Second foster parent year of birth (51): This is a continuous variable entered as a year.
25. Race of foster parents (52-57 and 59-64): Race was measured as a dichotomous variable for both the first foster parent and the second foster parent. Race categories included the following: American Indian/Native Alaskan, Asian, Black/African American, Hawaiian/Pacific Islander, White, and unable to determine.

26. Hispanic Ethnicity (58 and 65): Hispanic ethnicity was measured for both the first foster parent (58) and the second foster parents (65). Options included not applicable, yes, no, and unable to determine.
27. Discharge reason (66): To report that a child has discharged, the child must be placed with a parent or relative or have had an alternative permanency outcome resulting in case closure. The options include each of the following: Not applicable, reunified with parent (primary caregiver), living with other relatives, adoption, emancipation, guardianship, transfer to another agency, runaway, death of the child, and missing.
28. Title IV-E eligibility (67): This variable indicates that foster care maintenance payments are being paid on behalf of the child and that at least one value from 59 to 65 must be answered as 1. Title Iv-E eligibility provides federal matching funds of 50 to 83%, depending on the state's per capita income. Funds are available for monthly maintenance payments to eligible foster care providers, administrative costs to manage the program, training staff and foster parents, foster parent recruitment, and other related expenses. Responses are measured as yes or no.
29. Title IV-E Adoption assistance (68): This variable indicates that adoption subsidy is being paid on behalf of the child who is in an adoptive home but the adoption is not yet finalized. Additionally, at least one value from 59 to 65 must be answered as 1. Adoption assistance may be recurring (on-going funds to assist in meeting the needs of the child that may continue until the child reaches 18 years old or 21 in certain circumstances) or non-recurring (one time funds spent directly related to the facilitation of the adoption finalizing).

30. Title IV-A AFDC payment (69)" This is reported as yes or no. Yes indicates that the child lives with a relative who is receiving AFDC payments for the child. At least one element from 59 to 65 must be a 1.
31. Title IV-D child support funds (70): This is measured s yes or no. Yes indicates that child support funds are being paid to the state on behalf of the child by assigning the child support payment received. At least one element from 59 to 65 must be a 1.
32. Title XIX (71): This is measured as yes or no. Yes means that the child is receiving or is eligible to receive assistance under title XIX. At least one element from 59 to 65 must be a 1.
33. SSI or other social security benefits (72): This is measured as yes or no. Yes indicates that the child is receiving benefits under title XVI or other Social Security Act titles no included in elements 59-63. At least one element from 59 to 65 must be a 1.
34. Only state support (73): This is measured as yes or no. Yes indicates that the child is receiving only support from the state or from some other course that is not included in elements 59-64. At least one element from 59 to 65 must be a 1.
35. Monthly foster care payment (74): This is reported as a continuous variable. The amount reported is the amount that would be paid to a placement, based on the per diem rate, if the child was there for an entire monthly. The length of time in the current placement is not considered in this calculation. The Children's Bureau reports that the accuracy of this variable is questionable from many states.
36. Date of birth (75): The date of birth of the child. The day is always changed to the 15^{th} of the month to protect confidentiality of the child.
37. Date of first removal (76): This is the child's first removal date.

38. Date of discharge (77): For children with a previous instance in foster care, the discharge date from instance is recorded here.
39. Date of latest removal (78): This is date of removal for the current instance in foster care. This date will match the date in 76 for children with only one removal instance.
40. Begin date for current placement (79): The date on which the child entered his or her current placement.
41. Date of discharge from foster care (80): This is date on which the state no longer has legal responsibility for the child or placement.
42. Termination of mother's parental rights (81): Date on which the rights of the mother were terminated. If this has not occurred, the response is 0.
43. Termination of father's parental rights (82): Date on which the rights of the father were terminated. If this has not occurred, the response is 0.
44. Termination of second parent's parental rights (83): Date on which the rights of the second parent were terminated. If this has not occurred, the response is 0.
45. Length in days since latest removal (87): This is a continuous variable calculated since the date of most removal to September 30 of the fiscal year.
46. Length of time in days at the current placement (88): This is a continuous variable calculated from the placement date to September 30 of the fiscal year. Children who exited care in this time, the date is calculated to the exit date.
47. Length of time in days of previous foster care stay (89): This applies only to children with two instances of out of home placement in foster care. This is calculated for the first instance from the date or removal to the state of discharge.

48. Total days in foster care from all instances (90): This is a continuous variable calculated from days on entry to days of exit for each instance in foster care. For children who remain in out of home placemen, the current instance is calculated to September 30 of the fiscal year.
49. Age at start (91): This is a continuous variable reporting the child's age at the start of the current fiscal year. If date of birth was missing, this is 99.
50. Age at most recent removal (92): This is a continuous variable that calculates the age of the child at the most recent removal date. If date of birth was missing, this is 99.
51. Age at end (93): This is the child's age calculated at the end of the current fiscal year. If date of birth was missing, this is 99.
52. Child is waiting for adoption (99): Child is between the ages of 0 and 17 and their parents' have lost parental rights. The case plan goal must be adoption and they must be in foster care at the end of the fiscal year. Children with a case plan goal is emancipation are excluded.
53. Both parents have relinquished parental rights (100): This is measured as yes or no. Relinquishment must have occurred before the end of the fiscal year.
54. Exited to emancipation (101): This is measured as yes or no. Emancipation is considered yes only is the child was at least 18 years old. Discharges under 18 are not recorded as emancipation.

Each year of the AFCARS report contains these variables. In the combined dataset, I will identify the variables by their names plus the year of their report for any variable that could change over time (i.e.: child ever adopted 2011). Please refer to the following table for a breakdown of the coding of each of the variables. Certain variables regarding the dates of

collection were omitted from this list. I have noted in the table variables that are Demographic Factors (DF) and Foster Care Factors (FCF) of consideration in this study.

AFCARS Foster Care Variable list

#	Type	Variable	Value	Value label
9	DF	Child sex	1 2 9	Male Female Unknown
10	DF	American Indian/Alaskan Native	0 1	No Yes
11	DF	Asian	0 1	No Yes
12	DF	Black/African American	0 1	No Yes
13	DF	Hawaiian/Pacific Islander	0 1	No Yes
14	DF	White	0 1	No Yes
15	DF	Unable to determine race	0 1	No Yes
16	DF	Hispanic Origin	0 1	No Yes
17	DF	Diagnosed disability	1 2 3	Yes No Not yet determined
18	DF	Mental retardation	0 1	No Yes
19	DF	Visually or hearing impaired	0 1	No Yes
20	DF	Physically disabled	0 1	No Yes
21	DF	Emotionally disturbed	0 1	No Yes
22	DF	Other diagnosed condition	0 1	No Yes
23	DF	Child ever adopted	0 1 2 3	Not applicable Yes, child has been legally adopted No, has never been adopted Unable to determine
24	FCF	Age at adoption	0 1 2 3	Not applicable Less than 2 years old 2-5 years old 6-12 years old

			4 5	13 and older Unable to determine
25	FCF	Total number of removals including the current one		Continuous variable
26	FCF	Number of placements in the current OOH		Continuous (does not count trial placements)
27	FCF	Removal manner	1 2 3	Voluntary Court ordered Not yet determined
28	FCF	Reason for removal: physical abuse	0 1	No Yes
29	FCF	Reason for removal: sexual abuse	0 1	No Yes
30	FCF	Reason for removal: neglect	0 1	No Yes
31	FCF	Reason for removal: Alcohol abuse by parent	0 1	No Yes
32	FCF	Reason for removal: Drug abuse by parent	0 1	No Yes
33	FCF	Reason for removal: Alcohol abuse by child	0 1	No Yes
34	FCF	Reason for removal: Drug abuse by child	0 1	No Yes
35	FCF	Reason for removal: Child disability	0 1	No Yes
36	FCF	Reason for removal: Child behavioral problem	0 1	No Yes
37	FCF	Reason for removal: Parent death	0 1	No Yes
38	FCF	Reason for removal: Parent incarceration	0 1	No Yes
39	FCF	Reason for removal: Caretaker inability to cope	0 1	No Yes
40	FCF	Reason for removal: Abandonment	0 1	No Yes
41	FCF	Reason for removal: relinquishment	0 1	No Yes
42	FCF	Reason for removal: Inadequate housing	0 1	No Yes
43	FCF	Current placement setting	1 2 3 4 5 6 7	Pre-adoptive home Foster family home, relative Foster family home, non-relative Group home Institution Supervised independent living

			8 99	Runaway Trial home visit Missing
44	FCF	Out of state placement	0 1	No Yes
45	FCF	Case plan goal	1 2 3 4 5 6 7 99	Reunification Live with other relatives Adoption Long-term foster care Emancipation Guardianship Case plan goal not yet established Missing
46	DF	Principal caretaker family structure	0 1 2 3 4 5	Not applicable Married couple Unmarried couple Single female Single male Unable to determine
47	DF	1st principal caretaker year of birth		Continuous
48	DF	2nd principal caretaker year of birth		Continuous
49	FCF	Foster family structure	0 1 2 3 4 5	Not applicable Married couple Unmarried couple Single female Single male Unable to determine
50	FCF	1st foster caretaker year of birth		Continuous
51	FCF	2nd foster caretake year of birth		Continuous
52	FCF	1st foster caretaker American Indian/Native Alaskan	0 1	No Yes
53	FCF	1st foster caretaker Asian	0 1	No Yes
54	FCF	1st foster caretaker Black/African American	0 1	No Yes
55	FCF	1st foster caretaker Hawaii/Pacific Islander	0 1	No Yes
56	FCF	1st foster caretaker White	0 1	No Yes
57	FCF	1st foster caretaker Unable to determine	0 1	No Yes
58	FCF	1st foster caretaker Hispanic origin	0 1	No Yes
59	FCF	2nd foster caretaker American Indian/Native Alaskan	0 1	No Yes

60	FCF	2nd foster caretaker Asian	0 1	No Yes
61	FCF	2nd foster caretaker Black/African American	0 1	No Yes
62	FCF	2nd foster caretaker Hawaii/Pacific Islander	0 1	No Yes
63	FCF	2nd foster caretaker White	0 1	No Yes
64	FCF	2nd foster caretaker Unable to determine	0 1	No Yes
65	FCF	2nd foster caretaker Hispanic origin	0 1	No Yes
66	FCF	Reason for discharge	0 1 2 3 4 5 6 7 8 99	Not applicable Reunification Living with other relatives Adoption Emancipation Guardianship Transfer to another agency Runaway Death of child Missing
67	DF	Title IV-E eligibility	0 1	No Yes
68	DF	Title IV-E adoption funds	0 1	No Yes
69	DF	Title IV-A AFDC payment	0 1	No Yes
70	DF	Title IV-D Child support funds	0 1	No Yes
71	DF	Title XIX	0 1	No Yes
72	DF	SSI or other Social Security Act benefits	0 1	No Yes
73	DF	Only state or other support	0 1	No Yes
74	FCF	Monthly foster care payment		Continuous, should reflect a full month at the current placement rate
75	DF	Date of birth		Set to 15th of the month, in date format
76	FCF	Date of first removal		In date format, YEAR/MO/DA, derived
77	FCF	Discharge date for previous removal		In date format, YEAR/MO/DA, derived

78	FCF	Date of last removal		In date format, YEAR/MO/DA, derived
79	FCF	Begin date for current placement		In date format, YEAR/MO/DA, derived
80	FCF	Date of discharge from foster care		In date format, YEAR/MO/DA, derived
81	FCF	PRT Mother date		In date format, YEAR/MO/DA, derived
82	FCF	PRT father date		In date format, YEAR/MO/DA, derived
83	FCF	PRT second parent date		In date format, YEAR/MO/DA, derived
87	FCF	# of days since latest removal		Continuous, derived
88	FCF	# of days in current placement		Continuous, derived
89	FCF	# of days in previous placement		Continuous, derived
90	FCF	Total # of days in foster care (all episodes)		Continuous, derived
91	DF	Age at first day of fiscal year		Continuous, derived
92	FCF	Age at most recent removal		Continuous, derived
93	DF	Age at end of year or at exit		Continuous, derived
99	FCF	Child free for adoption	0 1	No Yes
100	FCF	Both parents have relinquished rights	0 1	No Yes
101	FCF	Exit to emancipation	0 1	No (if not 18, then it is 0) Yes

NYTD data

The National Youth in Transition (NYTD) report was commissioned as part of the John H. Chafee Foster Care Independence Program (CFCIP). The NYTD data are collected annually starting in 2011 from all 50 states, the District of Columbia, and Puerto Rico. (Due to confidentiality concerns, data from Connecticut are currently unavailable to the research community.) Youth are included in the report if they are under the supervision of the foster care system and are likely to remain under this supervision through their 18th birthday. The NYTD data set includes demographic information for the child as well as specific information about the child outcomes and services. The NYTD report is two separate data collection reports: the

NYTD Outcomes file and the NYTD Services file. Data are reported every 6 months by the states and compiled into a yearly report for dissemination.

For the NYTD Outcomes file, youth surveyed include those who will turn 17 during the first fiscal year of the survey administration. The survey is completed by the youth for this report. For the 2011 report, this would include youth in the foster care system who were turning 17 from October 2010 to September 2011. The survey is conducted biennially from the baseline cohort with two additional waves reported. Follow up years re-survey the same youth during the fiscal years in which they turn 19 (2013) and 21 (2015). Every third year following the initial baseline, a new cohort will be established. A new baseline year began in 2014 for youth who turned 17 between October 2013 and September 2014. Follow up years for this cohort include 2016 and 2018. This year represents the next new baseline year; however, these data are not yet available. This dissertation research will utilize the 2011, 2013, and 2015 cohort file. This represents the first complete cohort of youth in the NYTD data. This will allow for analysis over time in the longitudinal data.

The NYTD Services file is completed every six months on a continuous basis. At the end of the year, the Service reports are combined into a single data file for that fiscal year. This file is a cross-sectional examination of the services provided to youth in foster care using funds administered by the CFCIP. The NYTD Services file has no age restriction so it includes youth who are much younger than 17 if they have received any service funded by the CFCIP. This dissertation research will utilize the 2011-2015 reports so it will cover the same period reported for the other files.

Outcomes data

The following describe the variables of interest in the Outcomes file. Numbers reported in parenthesis represent the variable number in the data set.

1. Date of birth (4): This is reported as a date. The day is always changed to the 15th for every child in order to protect confidentiality.
2. Child sex (5): This is reported as a dichotomous variable male and female.
3. Race (6-12): This is reported as a dichotomous outcome (yes or no) for each of the following race categories: American Indian/Native American, Asian, Black/African American, Hawaiian/Pacific Islander, White, unknown race, and declined to answer. A child may have selected more than one.
4. Hispanic ethnicity (13): This is reported as yes or no.
5. Outcomes reporting status (34): This represents the youth's participation or lack thereof in the study. Valid responses include the following: Youth participated (either fully or partially completed the survey); youth declined (The agency located the youth but the youth declined to answer); parent declined (for youth who were not yet 18 and whose parental rights were intact, the parent did not consent to the study); incapacitated (the youth has a permanent or temporary mental or physical incapacitation that prevents completion of the survey; incarcerated (the youth was incarcerated at the time of the survey; runaway/missing (the youth is known to be reported as a runaway status at the time of the survey); unable to locate/invite (the agency was not able to locate the youth in time for the survey to be completed); death (the child died prior to completion; not in sample (for youth who completed the

baseline but who were not included in the follow up); blank (not in the baseline population)

6. Date of Outcome data collection (35): Date on which the data were recorded.
7. Foster care status (36): Response options include yes, no and blank. Yes indicates the youth remains in foster care supervision at the time of the survey. No indicates the youth is no longer under supervision. Blank indicates the youth is not in the baseline or follow up.
8. Current full time employment (37): Response options include yes, no, declined, and blank. Yes indicates that the youth is employed full time (at least 35 hours per week). No indicates that the youth is not employed at least 35 hours per week. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
9. Current part time employment (38): Response options include yes, no, decline and blank. Yes indicates that the youth is employed working 1 to 34 hours per week. No indicates that the youth is not employed working 1 to 34 hours per week. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
10. Employment related skills (39): Response options include yes, no, declined, and blank. Yes indicates that the youth has obtained employment related skills through an apprenticeship, internship, or other on-the-job-training (paid or unpaid) in the past year. No means the youth did not receive any of these services in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.

11. Social security (40): Response options include yes, no, declined, and blank. Yes indicates that the youth is receiving some social security payments (SSi, SSDI) either directly or indirectly, either as a dependent or as a beneficiary. No means the youth is not receiving any type of social security payment either as a dependent or as a beneficiary. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
12. Educational aid (41): Response options include yes, no, declined, and blank. Yes indicates that the youth has received educational aid in the form of scholarship, voucher, stipend, grant, student loan, or other type of educational financial aid to cover educational expenses. No means the youth did not receive any of these types of funding in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
13. Public financial assistance (42): Response options include yes, no, declined, and blank. Yes indicates that the youth has received public financial assistance in the form on ongoing cash welfare payments from the government to cover basic needs. No means the youth did not receive any of these services in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
14. Public food assistance (43): Response options include yes, no, declined, and blank. Yes indicates that the youth has received public food assistance in the form of food stamps from the government in the past year. No means the youth did not receive any of these services in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.

15. Public housing assistance (44): Response options include yes, no, declined, and blank. Yes indicates that the youth has received public housing assistance from the government in the past year. Payment for placement in foster care or other placements under the supervision of foster care are not included in this response. No means the youth did not receive any of these services in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
16. Other financial support (45): Response options include yes, no, declined, and blank. Yes indicates that the youth has received support from a source not previously listed in the past year. Support may have come from a spouse, family member, child support that the child receives, or funds from a legal settlement. This does not include occasional gifts (birthdays, holidays, graduation), child care supports, child support for the youth's child, or other assistance that does not benefit the youth directly. No means the youth did not receive any of these services in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
17. Highest educational attainment (46): This indicates the highest level of academic achievement that youth has accomplished. Responses include the following: high school diploma or GED, vocational certificate, vocational license, Associate's degree, Bachelor's degree, higher degree, none of the above, declined, and blank. None of the above indicates the youth has not received any of the educational achievements listed before it. Declined means the youth did not answer the question. Blank indicates the youth was not included in the baseline or follow up survey.

18. Current enrollment or attendance (47): Response options include yes, no, declined, and blank. Yes indicates that the youth has been enrolled and attending high school, GED classes, or post-secondary vocational training or college in the past year. The youth is considered enrolled and attending if they were enrolled in last session in which the educational program was in session. No means the youth as not enrolled in any of these programs in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
19. Connection to an adult (48): Response options include yes, no, declined, and blank. Yes indicates that the youth has a connection to an adult who they can go to for advice or guidance or when needing help making a decision, or for companionship when celebrating personal achievements. No means the youth does not have an adult connection with whom they can share these experiences. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
20. Homelessness (49): Response options include yes, no, declined, and blank. Yes indicates that the youth has experienced homelessness in the past year. Homelessness means the youth did not have regular or adequate housing. This includes periods of times where the youth was living in a car or on the street, or times when the youth was living in a temporary or homeless shelter. No means the youth did not experience homelessness in the past year. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey. For the baseline survey, a response indicates a lifetime experience. For follow up surveys, a response indicates in the past two years (since the last survey).

21. Substance abuse referral (50): Response options include yes, no, declined, and blank. Yes indicates that the youth received substance abuse referral for either drug or alcohol counseling. No means the youth did not receive a referral for substance abuse counseling. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey. For the baseline survey, a response indicates a lifetime experience. For follow up surveys, a response indicates in the past two years (since the last survey).
22. Incarceration (51): Response options include yes, no, declined, and blank. Yes indicates that the youth has been incarcerated. Incarceration includes confinement in a jail, correctional facility, or juvenile community detention facility in connection with allegedly committing a crime. No means the youth was not incarcerated. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey. For the baseline survey, a response indicates a lifetime experience. For follow up surveys, a response indicates in the past two years (since the last survey).
23. Children (52): Response options include yes, no, declined, and blank. Yes indicates that the youth has a child, either by giving birth or fathering a child who was born. This refers only to biological parenthood. No means the youth does not have children. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey. For the baseline survey, a response indicates a lifetime experience. For follow up surveys, a response indicates in the past two years (since the last survey).

24. Marriage at child's birth (53): Response options include yes, no, not applicable, declined, and blank. Yes indicates that the youth was married at the time of their child's birth. No means the youth was not married at the time of their child's birth. Not applicable means the youth does not have children. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey. For the baseline survey, a response indicates a lifetime experience. For follow up surveys, a response indicates in the past two years (since the last survey).
25. Medicaid (54): Response options include yes, no, do not know, declined, and blank. Yes indicates that the youth is receiving Medicaid. No means the youth did not receive Medicaid. Do not know means the youth did not know. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
26. Other health insurance coverage (55): Response options include yes, no, not applicable, do not know, declined, and blank. Yes indicates that the youth is receiving health insurance through a third party that is not Medicaid. No means the youth is not receiving health insurance through a third party other than Medicaid. Not applicable means that the youth is receiving Medicaid. Do not know means the youth did not know. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
27. Health insurance type—Medical (56): Response options include yes, no, not applicable, do not know, declined, and blank. Yes indicates that the youth is health coverage that pays for all or part of medical costs. No means the youth does not have

coverage that pays for any medical care. Not applicable applies when the youth did not indicate any health insurance coverage. Do not know means the youth did not know. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.

28. Health insurance type—Mental health (57): Response options include yes, no, not applicable, do not know, declined, and blank. Yes indicates that the youth is health coverage that pays for all or part of mental health care costs. No means the youth does not have coverage that pays for any mental health care. Not applicable applies when the youth did not indicate any health insurance coverage. Do not know means the youth did not know. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.
29. Health insurance type—Prescription drugs (56): Response options include yes, no, not applicable, do not know, declined, and blank. Yes indicates that the youth is health coverage that pays for all or part of prescription drug costs. No means the youth does not have coverage that pays for any prescription drug costs. Not applicable applies when the youth did not indicate any health insurance coverage. Do not know means the youth did not know. Declined means the youth did not answer this question. Blank indicates that the youth was not in the baseline or follow up survey.

For each year of the report, the same variables are included. In the combined file, I will identify the variable by its name followed by the year of its report. Please refer to the following table for a listing of variables, including response options and coding in the file. I have noted in

the table variables that are Demographic Factors (DF) and Foster Care Factors (FCF) of consideration in this study. The Dependent Variable (DV) is in bold.

NYTD Outcomes Variable List

#	Type	Variable	Value	Value label
4	DF	Date of birth		Always changed to the 15th
5	DF	Child sex	1 2	Male Female
6	DF	American Indian/Alaskan Native	0 1	No Yes
7	DF	Asian	0 1	No Yes
8	DF	Black/African American	0 1	No Yes
9	DF	Hawaiian/Pacific Islander	0 1	No Yes
10	DF	White	0 1	No Yes
11	DF	Unknown race	0 1	No Yes
12	DF	Race declined to answer	0 1	No Yes
13	DF	Hispanic origin	0 1	No Yes
34		Outcomes reporting status	1 2 3 4 5 6 7 8 9 77	Youth participated Youth declined Parent declined Youth incapacitated Incarcerated Runaway/missing Unable to locate/invite Death Not in sample Blank
35		Outcome date		
36	FCF	Foster care status at outcome date	1 0 77	Yes in foster care No, not in foster care Blank
37	DF	Current full time employment (35 hours or more per week)	0 1 2 77	No Yes Declined Blank
38	DF	Current part time employment (34 hours or less per week)	0 1	No Yes

			2 77	Declined Blank
39	DF	Employment related skills: internship, apprenticeship, OTJ training in order to obtain or maintain work	0 1 2 77	No Yes Declined Yes
40	DF	Social Security: SSI or SSDI	0 1 2 77	No Yes Declined Blank
41	DF	Educational Aid: Scholarship, grant, sipend, loan or other aid to attend school	0 1 2 77	No Yes Declined Blank
42	DF	Public financial assistance (cash welfare)	0 1 2 77 88	No Yes Declined Blank Not applicable (in foster care)
43	DF	Public food assistance	0 1 2 77 88	No Yes Declined Blank Not applicable (foster care)
44	DF	Public housing assistance	0 1 2 77 88	No Yes Declined Blank Not applicable (foster care)
45	DF	Other financial supports (not listed above)	0 1 2 77	No Yes Declined Blank
46	DF	Highest education)	1 2 3 4 5 6 7 8 77	High school or GED Vocational certificate Vocational license Associate's degree Bachelor's degree Higher degree None of the above Declined Blank
47	DF	Current enrollment and attendance (in any school setting)	0 1 2 77	No Yes Declined Blank

48	DF	Connection to an adult	0 1 2 77	No Yes Declined Blank
49	DF	Homelessness	0 1 2 77	No Yes Declined Blank
50	DF	Substance abuse referral	0 1 2 77	No Yes Declined Blank
51	**DV**	**Incarceration**	**0** **1** **2** **77**	**No** **Yes** **Declined** **Blank**
52	DF	Does the youth have children	0 1 2 77	No Yes Declined Blank
53	DF	Marriage at child's birth	0 1 2 77	No Yes Declined Blank
54	DF	Youth receives Medicaid	0 1 2 3 77	No Yes Declined Don't know Blank
55	DF	Other health insurance coverage	0 1 2 3 77	No Yes Declined Don't know Blank
56	DF	Health insurance type: Medical	0 1 2 3 77	No Yes Declined Don't know Blank
57	DF	Health insurance type: mental health	0 1 2 3 77	No Yes Declined Don't know Blank
58	DF	Health insurance type: Prescription drugs	0 1	No Yes

			2 3 77	Declined Don’t know Blank

The gap from element 13 to 34 is in the data set. The missing numbers are in the NYTD services file.

Services data

The following describe the variables of interest in the Services file. Numbers reported in parenthesis represent the variable number in the data set. Variables 4 through 13 match the NYTD Outcomes file and will not be repeated here. Only those variables not contained in the Outcomes file will be reported.

1. Foster care status (14): The youth receives services currently or was in foster care during the reporting period. Response options include yes, no, and blank. Yes indicates the youth received foster care services at some point in the reporting period. No indicates the youth did not receive any foster care services in the reporting period. Blank indicates the youth was not included in the follow up or baseline survey.
2. Local agency (15): The local agency is the county or local equivalent unit that has primary responsibility for the placement and care of the youth. Response options include FIPS codes, centralized unit, and blank. A FIPS code is the federal designation that corresponds to the county or jurisdiction that has responsibility for the child. Centralized unit indicates that the youth is not in foster care but received services from the provider. Blank indicates the youth was not in the baseline or follow up survey.
3. Enrolled in a federally-recognized tribe (16): Response options include yes, no, and blank. Yes indicates that youth is enrolled in a federally-recognized tribe meaning Indian

tribe, band, nation, or other organized group or community of Indian. No indicates that the youth is not a member of a federally-recognized tribe. Blank indicates the youth was not in the baseline or follow up survey.

4. Adjudicated delinquent (17): Response options include yes, no, and blank. Yes indicates that youth has been adjudicated as a delinquent by a court. No indicates that the youth has never been adjudicated as a delinquent. Blank indicates the youth was not in the baseline or follow up survey. This is a lifetime report.
5. Educational level (18): This indicates the highest level of education completed by the youth. Responses options include all of the following: Less than 6^{th} grade, 6^{th} grade, 7^{th} grade, 8^{th} grade, 9^{th} grade, 10^{th} grade, 11^{th} grade, 12^{th} grade, Post-secondary education or training, college, and blank. A response indicates the youth has completed that level of education. Post-secondary education includes any training or education obtained beyond high school other than that at a college or university.
6. Special education services (19): Response options include yes, no, and blank. Yes indicates that youth received specially designed educational assistance at no cost to the youth or the parents during the reporting period. No indicates that the youth did not any special education services. Blank indicates the youth was not in the baseline or follow up survey.
7. Independent living needs assessment (20): Response options include yes, no, and blank. Yes indicates that youth received an independent living needs assessment paid for or provided by the state during the reporting period. No indicates that the youth did not receive an independent living needs assessment. Blank indicates the youth was not in the baseline or follow up survey. An independent living needs assessment includes an

assessment to determine the youth's basic skills, emotional and social capabilities, strengths, and needs to match the youth with appropriate independent living services.

8. Academic support (21): Response options include yes, no, and blank. Yes indicates that youth received academic supports in order to complete high school or the GED during the reporting period. No indicates that the youth did not receive academic supports during the reporting period. Blank indicates the youth was not in the baseline or follow up survey. Academic supports include academic counseling, preparation for the GED, tutoring, help with homework, study skills training, literacy training, and help accessing the educational resources needed.
9. Post-secondary educational support (22): Response options include yes, no, and blank. Yes indicates that youth received post-secondary support services intended to help the youth enter or complete post-secondary education during the reporting period. No indicates that the youth did not receive post-secondary support. Blank indicates the youth was not in the baseline or follow up survey. Post-secondary support includes classes for test preparation such as SAT prep courses, counseling about college, information about financial assistance, help completing college loan applications, or tutoring while in college.
10. Career preparation (23): Response options include yes, no, and blank. Yes indicates that youth received career preparation services that focused on developing the youth's ability to find, apply for, and retain appropriate employment paid for or provided by the state during the reporting period. No indicates that the youth did not receive career preparation. Blank indicates the youth was not in the baseline or follow up survey. Career preparation includes vocational or career assessment, job seeking and job placement

support, retention support services, learning how to work with employers, understanding workplace issues, and understanding authority and customer relationships.

11. Employment programs or vocational training (24): Response options include yes, no, and blank. Yes indicates that youth received vocational training or employment programming paid for or provided by the state during the reporting period. No indicates that the youth did not receive employment programming or vocational training. Blank indicates the youth was not in the baseline or follow up survey. Employment programs include apprenticeships, internships, or summer employment programs. It does not include summer jobs obtained by the youth alone. Vocational training includes occupational classes such as cosmetology, mechanics, building trades, nursing, computer science, and other such programs.
12. Budget and financial management (25): Response options include yes, no, and blank. Yes indicates that youth received budget and financial management assistance paid for or provided by the state during the reporting period. No indicates that the youth did not receive budget or financial management assistance. Blank indicates the youth was not in the baseline or follow up survey. Budget and financial management services include living with a budget, opening and using a checking account, balancing a checkbook, developing consumer awareness, and filing tax forms.
13. Housing education and home management training (26): Response options include yes, no, and blank. Yes indicates that youth received housing education and home management training paid for or provided by the state during the reporting period. No indicates that the youth did not receive housing education and home management training. Blank indicates the youth was not in the baseline or follow up survey. Housing

education includes assistance or training in locating housing, completing a rental application, acquiring a lease, security deposits and utilities, tenant's rights, and maintain a safe home. Home management training includes food preparation, laundry, housekeeping, living cooperatively, meal planning, and grocery shopping.

14. Health education and risk prevention (27): Response options include yes, no, and blank. Yes indicates that youth received information on health education and risk prevention paid for or provided by the state during the reporting period. No indicates that the youth did not receive information on health education and risk prevention. Blank indicates the youth was not in the baseline or follow up survey. Health education and risk prevention includes hygiene, fitness, and first aid; medical and dental care; sex education and HIV prevention; and substance use prevention and intervention.
15. Family support and healthy marriage education (28): Response options include yes, no, and blank. Yes indicates that youth received information about families and marriage paid for or provided by the state during the reporting period. No indicates that the youth did not receive information about families and marriage. Blank indicates the youth was not in the baseline or follow up survey. Family support and healthy marriage education includes education and information about safe and stable families, healthy marriages, spousal communication, parenting, responsible fatherhood, and domestic violence prevention.
16. Mentoring (29): Response options include yes, no, and blank. Yes indicates that youth received mentoring services paid for or provided by the state during the reporting period. No indicates that the youth did not receive mentoring services. Blank indicates the youth was not in the baseline or follow up survey. Mentoring services includes the youth being

screened and matched with an adult for one-on-one relationships that involves the two meeting on a regular basis. It may be short or long term.

17. Supervised independent living (30): Response options include yes, no, and blank. Yes indicates that youth has supervised independent living arranged and paid for or provided by the state during the reporting period. No indicates that the youth did not supervised independent living services. Blank indicates the youth was not in the baseline or follow up survey. Supervised independent living services is not a 24 hour supervised placement and often includes increased responsibilities for the youth.
18. Room and board financial assistance (31): Response options include yes, no, and blank. Yes indicates that youth received room and board assistance paid for or provided by the state during the reporting period. No indicates that the youth did not receive room and board assistance. Blank indicates the youth was not in the baseline or follow up survey. Room and board assistance includes rent deposits, utilities, and other household start up costs.
19. Educational financial assistance (32): Response options include yes, no, and blank. Yes indicates that youth received educational financial assistance paid for or provided by the state during the reporting period. No indicates that the youth did not receive educational financial assistance. Blank indicates the youth was not in the baseline or follow up survey. Educational financial assistance includes education or training that allows the purchase of textbooks, uniforms, equipment (such as computers), or other supplies; tuition assistance; scholarships; payment for educational preparation and support; and payment for GED and other educational tests.

20. Other financial assistance (33): Response options include yes, no, and blank. Yes indicates that youth received other financial assistance paid for or provided by the state during the reporting period. No indicates that the youth did not receive other financial assistance. Blank indicates the youth was not in the baseline or follow up survey. Other financial assistance includes other payments made by the state to help the youth live independently.

For each year of the report, the same variables are included. In the combined file, I will identify the variable by its name followed by the year of its report. Please refer to the following table for a listing of variables, including response options and coding in the file. I have noted in the table variables that are Demographic Factors (DF) and Foster Care Factors (FCF) of consideration in this study. The Dependent Variable (DV) is in bold.

NYTD Services Variable list

#	Type	Variable	Value	Value label
14	FCF	Foster care status	1 0 77	Yes No Blank
15		Local Agency	FIPS code 99999 77	FIPS Centralized unit Blank
16	DF	Enrolled in a federally-recognized tribe	1 0 77	Yes No Blank
17	**DV**	**Adjudicated delinquent**	**1** **0** **77**	**Yes** **No** **Blank**
18	DF	Educational level	0 6 7 8 9 10	Less than 6th grade 6th grade 7th grade 8th grade 9th grade 10th grade

			11 12 13 14 77	11th grade 12th grade Post-secondary education or training College Blank
19	DF	Special education	1 0 77	Yes No Blank
20	FCF	Independent living needs assessment	1 0 77	Yes No Blank
21	FCF	Academic support	1 0 77	Yes No Blank
22	FCF	Post-secondary educational support	1 0 77	Yes No Blank
23	FCF	Career preparation	1 0 77	Yes No Blank
24	FCF	Employment programs or vocational training	1 0 77	Yes No Blank
25	FCF	Budget and financial management	1 0 77	Yes No Blank
26	FCF	Housing education and home management training	1 0 77	Yes No Blank
27	FCF	Health education and risk prevention	1 0 77	Yes No Blank
28	FCF	Family support and healthy marriage education	1 0 77	Yes No Blank
29	FCF	Mentoring	1 0 77	Yes No Blank
30	FCF	Supervised independent living	1 0 77	Yes No Blank
31	FCF	Room and board financial assistance	1 0 77	Yes No Blank
32	FCF	Education financial assistance	1	Yes

			0 77	No Blank
33	FCF	Other financial assistance	1 0 77	Yes No Blank

Variables contained in the NYTD Outcomes files and Services are listed in the table above.

Linking the files

AFCARS and NYTD can be linked using the AFCARS RecNumbr variable and the NYTD RecNumbr variable. This is true for the AFCARS adoption and foster care files and for the NYTD services and outcomes files. Both AFCARS files may be merged to each other. Both NYTD files may be merged to each other. All four files may be merged together as well. Because of certain errors in the files, some youth had the same identifying number; however, in each case, they lived in different states. This was corrected by creating a new variable that added the state designation to the end of the identifier variable. Variables that are contained in both AFCARS and NYTD (such as demographic questions) have the same variable file name to assist in merging the files. For example, American Indian/Alaskan Native is labeled AMIAKN in all NYTD and AFCARS data files.

I have merged the files for the AFCARS foster care and both the NYTD Outcomes and Services files. The AFCARS adoption file will not be included in this analysis. This will provide me the largest possible set of variables to consider. The NYTD Services file will allow me to examine adjudication as a delinquent as the dependent variable while the NYTD Outcomes file will allow me to examine incarceration as an outcome measure. These variables have different meaning with adjudication indicating a finding of delinquency by the juvenile court; however, this may be due to a status offense and not a criminal offense. Incarceration should exclude status offenders (except in rare circumstances where the valid court option is used to override the

prohibition on incarceration of status offenders); however, this will also exclude many juvenile offenders who are placed in a correctional setting. Neither are perfect measures of Crossover Youth but both offer options for examining youth are a part of the population of interest.

Adjudication as a delinquent is measured by lifetime experience. I will not be ascertain when the adjudication occurred or if it occurred prior to the involvement in the foster care system. This is not a limitation for the definition of Crossover Youth but does limit my ability to infer that foster care related factors contributed to the delinquency. As noted in the literature review, almost all youth who have exposure to both juvenile justice and foster care systems begin with the foster care system. Incarceration is also measured as a lifetime experience in the baseline study. This poses the same limitation as the measurement for adjudication. Additionally, incarceration in follow up studies is measured within the past two years. For most youth, this excludes juvenile offenses the follow up study examines a period during their time from 17 to 19 years old. While this limits the applicability of the CY designation for incarceration from 2013 and 2015, the variable can still demonstrate criminal justice involvement, even if it is in the adult criminal justice system.

Using the baseline studies will not completely eliminate a youth who was incarcerated for an adult offense. All states allow for some offenses to be tried as adults, although often those offenses are serious enough that the individuals involved may not be in this study. Additionally, though, five states charge all youth who are 17 as adults in any criminal offense (Georgia, Michigan, Missouri, Texas, and Wyoming) and two states begin adult charges at 16 for all criminal offenses (New York and North Carolina) (Tiegan, 2017). I would not be able to exclude these incarceration experiences at 16 and 17 from the file without excluding those states completely from the analysis. Both options pose limitations on the analysis. My determination is

excluding these large and diverse states is a larger limitation that including them and recognizing that some of the instances of incarceration may have been for crimes processed in criminal court.

Appendix B: Independent Variables of interest in the combined file

Several variables of interest have been identified for use in the combined file. Here I will discuss those variables and their application to the study. The variables will be split into demographic variables and foster-care related variables for the analysis.

Demographic variables of interest

Demographic variables of interest in the study that are included in both AFCARS and NYTD include gender, race, and Hispanic ethnicity. AFCARS also includes age; however, because NYTD Outcomes comes from a cohort of youth who are all 17 during the year of the study, age is not included in the file. Age is not included in the NYTD Services file although it encompasses all youth who have received transition services, which is a larger segment than youth who are 17 years old. AFCARS uses a calculated variable that determines the child's age based on the reported date of birth. This variable can be used to calculate the age of ta youth in the NYTD Outcomes file as well.

AFCARS variables. Additional important demographic information is contained in the AFCARS files. Diagnosed disability is an important demographic variable, especially looking at the emotionally disturbed variable to examine its potential correlation to cross over status. The overall variable will be used to determine correlation to disability and crossover; furthermore, each type of diagnosed disability will be assessed for its impact. Each of these variables represents a measure of strain.

Family structure is included which will be used to compare single-parent households to two parent households. While the original variable will be used, an additional variable will be created to compare households with two parents to households with one parent. This will combine married couple and unmarried couple and then combine single female and single male.

Not applicable and unable to determine will be excluded. Because society constructs the ideal family system as a two-parent household, this represents a form of anomie. In addition to the family structure variable, age of the parent will be considered as well. This variable will be constructed from the date of birth of principal caretaker variable. Variables for both the principal caretaker and the secondary caretaker will be created. Unfortunately, other information about the primary and secondary caretakers is not available.

AFCARS contains variables that may be used to measure poverty. Title IV-E eligibility is a designation given to youth in foster care who come from homes living in poverty. Approximately one third of youth in the AFCARS file show Title IV-E Eligibility. Because poverty is often linked to crime and other poor outcomes, this will be Title IV-E eligibility will be analyzed for correlation to the outcome measures. Poverty as a form of anomie and strain is closely linked with crime (Shoemaker, 2010). Other title IV payments include adoption assistance, child support, and AFDC payments. These variables do not represent as clear a link to poverty as Title IV-E eligibility and are also not measures of strain; therefore, they will not be used for this analysis. A final payment variable that is measured relates to receiving SSI, SSDI, or other Social Security Act funds. This variable will be considered in the analysis not as a proxy of poverty but for its link to strain. Eligibility for social security funds requires instances of strain in the life of the child.

NYTD outcomes variables. The NYTD Outcomes file provides several more demographic factors that may help explain correlation to cross over. Employment, both full and part time, is included in the file. Full time and part time employment will be examined for correlation to cross over. Because lack of employment creates a strain in the life of a young person, an additional variable called employed will be created combining the yes responses from either full or part

time employment in order to examine the effects of having a job. Related to employment, the variable for employment related skills will also be assessed. A lack of employable skills creates a strain for an individual seeking employment.

The Outcomes file has multiple variables measuring types of services received by the youth. The SSI and SSDI variable will not be used because it does not link to AFCARS and the AFCARS variable is more comprehensive since it includes other Social Security funds as well. Educational aid will be considered because a lack of aid may represent a strain in achieving the goal of further education. Receipt of cash welfare payments, food assistance, housing assistance, and other financial supports will each be considered as measures of strain. While these may be considered proxies of poverty as well, they will not be considered for this because many youth in the survey remain in foster placements. As such, few report receiving these services at baseline. Had follow up years been included when the youth were 19 and 21, a larger number of youth may report using these services.

Level of education is closely linked to later achievement in adulthood and lack of education is often linked to poverty and poorer outcomes for young adults (Milbrun et al., 2012). The Outcomes file measures the highest level of education completed. The measure in this file is limited, however, because it begins with high school completion. The measure for education in the Services file will be discussed further for its use. The Outcomes file does have a measure of current attendance and enrollment in an education program. This measure will be used because lack of attendance in school at 17 may represent a strain.

Several measures of health insurance are available in the file including the use of Medicaid and access to a third-party insurance. These will be explored as potential aspects of strain. Additionally, coverage is broken into medical, prescription medication, and mental health.

These will each be examined to determine if lack of coverage in one area creates a strain. Complicating the analysis of this variable is the implementation of the Affordable Care Act during the reporting period. Not every state expanded Medicaid so variation in coverage may be related to state policy instead of other factors.

Other measures of interest include connection to an adult. Lack of connections to adults may represent a strain for the youth. Experiencing homelessness in their life represents a strain and will be considered in the analysis. Substance use has been closely linked to delinquency (Milburn et al., 2012) and will be considered as a measure of strain. Finally, having children before becoming an adult represents a strain and will be considered in the analysis.

NYTD Services data. The Services file contains fewer demographic considerations than the previous two data sets. An important consideration is the variable for membership in a federally-recognized tribe. Because of the history of marginalization of Native Americans, tribal membership will be considered a strain in the examination of its correlation to cross over.

Two other variables of interest are in the Services file. First, level of education is expanded in this file when compared to the Outcomes file. Level of education is measured from completion of 6^{th} grade up through completion of college. An additional variable will be calculated from this to determine if the youth is at or near grade level based on age. This cannot be done in the Services file but is possible in the linked files since AFCARS will contain age. While the measurement will not be perfect because of the rounding of the ages, it will give a close approximation. This will be analyzed as a dichotomous yes or no; it will be considered strain not to be at or near grade level. Finally, special education services will be examined as a measure of strain.

Foster care variables of interest

The AFCARS and NYTD Outcomes and Services files do not contain overlapping foster care related variables of interest. Each does contain some variables of interest with regard to placement in foster care though.

AFCARS data. AFCARS has multiple variables of interest that relate to placement in foster care. Two variables in the foster care file examine adoption. First, a dichotomous variable examines if the youth has ever been adopted. This would represent strain, first, potentially from the adoption, and second, from the removal from the adoptive home. Age at the adoption is also considered which may help explain the potential strain.

The method of removal from the home is a variable of potential strain. Court order removal may also be characterized as involuntary removal. The total number of removals has been shown to increase risk for cross over and will be considered here. The reason for the current removal will also be considered using the list of 15 options provided in AFCARS. Particular focus will examine the correlation between parental incarceration and cross over. A new variable will also be created to examine differences in four types of removal: neglect, physical abuse, sexual abuse, and child behavior. Sexual abuse and physical abuse will remain their own variables. Neglect will combine neglect, alcohol abuse by the parent, drug abuse by the parent, child disability, parent death, parent incarceration, abandonment, inadequate housing, and relinquishment. Child behavior will include child alcohol abuse, child drug abuse, child behavioral problem, and caretaker inability to cope. Each of these represents a form of strain in the child's life.

Current placement setting will be analyzed with the designations provided in AFCARS which include pre-adoptive home, kinship home, foster home, group home, institution,

supervised independent living, runaway, and trial home visit. Additionally, in order to examine the differences in placement types that include foster homes, kinship homes, and congregate care, a new variable will be created for these three types. Kinship homes and foster homes will remain unchanged. Congregate care will include group homes and institutional placements. All placement types represent various levels of strain.

Parental rights may sometimes be relinquished or severed in the foster care process. Youth whose parents have their rights terminated by the court may feel greater strain. This variable is evaluated with mother and father separately. A new variable will examine the difference between having both parents' rights terminated and not having both parents' rights terminated. Additionally, a variable considers parental relinquishment from both parents. This will be considered and a comparison of termination versus relinquishment will be analyzed as well.

Other factors included in the AFCARS data include the age at the most recent removal, amount of time in out of home placement, the case plan goal, out of state placement, and being free for adoption. A child free for adoption could potentially lead to more strain or possibly less strain. Inclusion in the analysis may help predict which is more strain. Placement out of state may represent a bigger strain than being placed in state so this will be included in the analysis. The case plan goal represents the permanency path being pursued by the state for this child. Each option will be analyzed to determine the strain associated with it and cross over. Finally, the number of days since the last removal will be examined for its impact on crossing over. Age at the most recent removal may be a factor of strain that will also be included in this analysis.

NYTD Services data. The Services file contains information on local units that supervise the youth. While this would not be a perfect measure to examine geographic differences (because a

child may be placed in another region), it does offer an opportunity to examine if certain areas are more prone to cross over than others. We could not examine this in detail but may infer that macro level strain elements that comprise something like social disorganization theory may be at work in situations where there are clusters of cross over.

The Services file lists many services that the youth may have received from the state in preparation for exiting care. Lack of these services may result in strain, or may remove a socially approved means for obtaining a legitimate goal. Services include independent living needs assessment, academic supports, post-secondary support, career preparation, employment programs and training, budget assistance, housing education, family support, mentoring, supervised independent living, room and board assistance, education assistance, and other forms of financial assistance. Each of these will be examined dichotomously.

The NYTD Outcomes file did not have any foster care related variables for examination in this study.

Appendix C: Dependent Variables (Outcome Measures)

Two variables are available for use to explore cross over among this sample of youth in foster care. In the NYTD Services file, youth are identified as being adjudicated a juvenile delinquent. In the NYTD Outcomes file, youth identify a lifetime experience of incarceration. Both of the variables have limitations in their application.

Adjudication as a juvenile delinquent may include status offenders who have not committed a criminal offense. A status offense is an action that would be legal if the individual was the age of majority. In most cases, this is 18 years old. For alcohol and a few other things, the age is 21. Using the broadest application of the word, Crossover Youth may include status offenders since the term may mean any youth who has contact with both the juvenile justice system (juvenile court would be included) and the foster care system. Typically, CY focuses on youth who have committed crimes though.

The Outcomes files examines incarceration data and reports a lifetime occurrence of any incarceration in the baseline measures at 2011 and 2014. While this may exclude most status offenders who are adjudicated, it is possible that some status offenders are detained under the Valid Court Order exception (Hughes, 2015) This application has grown increasingly rare though (Pilnik, 2015). Fewer than half the states now allow this exception and many of those rarely, if ever, use it (Pilnik, 2015). While incarceration may limit the consideration of status offenders, the variable may inhibit a full understanding of who crosses over. Many youth are arrested, charged with a crime, and given sentences from juvenile courts without ever being incarcerated.

While the adjudication variable may include youth who would likely not be considered CY, the incarceration variable will likely exclude some youth who should be considered CY.

From the data, I cannot determine status offenders nor can I determine juveniles with exposure to juvenile courts without an incarceration or adjudication. Because of the limits of the two variables, I will use both as an outcome measure. I hypothesize that adjudication will result in a broader correlation to variables but incarceration will result in stronger correlation to variables.

Appendix D: Plan of Analysis

An analysis plan identifies the variables in the data, explains the process for creating new variables that may be needed for analysis, examines the outcome measures and variables of interest, and provides a detailed explanation for the plan of analysis in the study. Here, I will present each of these with detailed explanations guiding the discussion. For the plan of analysis, I will separate the plans for papers 2 and 3. An addendum to paper 1 will be included that updates my plan for inclusion of additional studies in the systematic review. I will also include a limitations section for the systematic review to explicate the limitations of the studies that were included.

This section will be presented in three parts. First, in section one, I will explain the updated selection process for papers that will be included in the systematic review. Next, I will describe the study samples and provide limitations based on these characteristics. Finally, I will discuss my plan for assessing the methodological rigor of the studies that were included. I will update on any changes thus far in the review.

In the second section, I will describe the analysis plan for the second paper in the dissertation. Here, I will examine the types of regression models and assess the best approach for the analysis. This assessment will include a discussion of the available variables as well as a discussion of the assumptions of the test.

In the final section, I will discuss the analysis plan for the Latent Transition Analysis in the third paper. In order to determine the best approach for this type of analysis, I will consider the limitations of the variables and the available variables of interest. This will allow me to present a plan for analysis using the best latent model. I will also examine the missing data (because I likely have many variables with missing data) and how to handle this.

Scoping Review

In order to update the systematic review and expand the scope of its analysis, I will conduct a new search for literature. This search will not be limited to articles published in peer-reviewed journals. My search will also include reports published by government agencies and non-profit groups that include Crossover Youth. Several such reports were found in the initial search and excluded. In order to be sure that I found all reports of this nature, I will not limit the search by year. I will also include a Google search (and not just Google Scholar and other empirical search databases). Additionally, because of the tie since I completed the original search, I will conduct my search for peer reviewed articles again, to update the literature since the last search. The original search was completed in December 2015. I will conduct the same search, limiting it to January 2016 to present.

Several of the studies included in the systematic review contain data from Los Angeles County. In some cases, I may be able to determine an overlap of time that concludes the samples are of the same or nearly the same youth. This may not always be possible but I will update my report with this analysis to determine how many youth in the total systematic review sample may be the same. The study is also limited by the same researcher on 11 of the articles contained in the review. Dr. Ryan is also included on one of the additional articles that will likely be included when the search is updated. (I am already aware of a recent article published this year.) This information will be added to the limitations section of the final paper when I have completed the inclusion of new material.

Methodological rigor of the studies will be assessed as well. This will be updated in the final article once all new material has been included. The assessment will consider the type of sample and sampling method, the statistical analysis used, and the limits of the findings. The

chart of the articles included in the analysis will be updated to include all of this information as well.

Regression

Regression analysis takes make forms. Choosing the correct regression model is important to obtain accurate results. To do this, consideration must be given to the number and types of independent and dependent variables in the analysis and to the question that is being asked. This analysis proposes using two criterion (dependent) variables that examine instances of cross over among youth in the child welfare system. Multiple variables of interest will be considered for the predictor (independent) variables.

The two variables of interest for measuring the outcome are Incarceration and Adjudication as a Delinquent. Both are these variables are dichotomous yes/no responses. Because the dependent variables are dichotomous, binary logistic regression will be used (Orme & Combs-Orme, 2009). Independent variables in this analysis range from dichotomous to categorical to continuous. The type of variable will be considered before using it in the regression model.

In any statistical analysis, an examination of the assumptions of the test is necessary (Abu Bader, 2011)

1. Linearity

The relationship between the dependent variable and intendent variable does not have to be linear in a logistic regression. While linearity is assumed for linear regression, logistic regression does not require this (Abu-Bader, 2011).

2. Normal distribution

Normal distribution is also an assumption of many regression models; however, in logistic regression, normal distribution of the dependent variable is not required. As an example, in the NYTD 2014 Outcomes file, the outcome measure for Incarceration has 5869 yes responses out of a total sample of 16,884. In the NYTD 2011 Services file, the outcome measure for Adjudicated as a Juvenile Delinquent has 11,861 yes responses out of a total sample of 62,093. Because the outcomes are both dichotomous, however, normality of distribution will not be examined.

3. Homoscedasticity

Homoscedasticity refers to the assumption that the variance for each value of the independent variable the dependent variable will have normal distribution. Because normal distribution of the dependent variable is not assumed in logistic regression, homoscedasticity is also not assumed (Abu-Bader, 2011).

4. Normality of residuals

While the normality of error is assumed in many regression models, again, in logistic regression, the normality of residuals is not a required assumption (Abu-Bader, 2011).

5. Sample representativeness

Logistic regression assumes that the sample is representative. Because AFCARS is a nationwide dataset about all youth in foster care (2011: *N*=618,497), representativeness of youth in foster care is not a concern. NYTD Services data are also nationally representative of youth who receive transition age services (2011: *N*=62,093). NYTD Outcomes surveys youth who turn 17 years old in foster care in that reporting year (2011: *N*=16,884). Not every youth responds or can be located, and others do not consent or have guardians who do not consent; however, while

these are limitations on the data, the data may still be considered representative because of the large sample size.

6. Levels of measurement

The dependent variable in the logistic regression must be a dichotomous variable (Abu-Bader, 2011). In my study, both the variable for incarceration and the variable for adjudication are dichotomous. The independent variables may be any level of measurement (Fox, 2008; Keith, 2015). Independent variables may not be entered as categorical variables so they will need to be dummy coded for entry in the binary logistic regression model (Orme & Combs-Orme, 2009).

7. Multicollinearity

Multicollinearity indicates a relationship between two independent variables (Abu-Bader, 2011). Before beginning the logistic regression, multicollinearity should be assessed. SPSS does not measure multicollinearity in binary logistic regression; however, multicollinearity may be checked using linear regression because this check does not involve the dependent variable (Orme & Combs-Orme, 2009). To examine multicollinearity, I will conduct a multiple regression with all the independent factors and any continuous variable as the dependent variable. Any variable may be chosen because the test is not an examination of relationship between the independent and dependent variables but of the relationship among the independent variables. The tolerance levels in the outcome must be greater than .10 and the VIF values should all be less than 10 for each independent variable (Abu-Bader, 2011).

8. Sample size

According to the Hosmer and Lemeshow goodness of fit test, fewer than 20 percent of cells should have less than 5 cases in them; furthermore, no cell should an expected value less than one (Abu-Bader, 2011). This assumption is tested using a chi-square goodness of fit by evaluating the Hosmer and Lemeshow 2x10 contingency table produced in a logistic regression output (Orme & Combs-Orme, 2009). In a sample as large as the one in this dissertation, meeting the sample size assumption should not be a problem.

Steps in the analysis. As a first step in the analysis, I will examine each independent variable for its association with the criterion variables. This step is important because the logistic regression should not include any variables that do not have a significant relationship with the outcome of interest (Keith, 2015). This will be accomplished in two steps.

First, I will conduct a crosstabulation for each categorical independent variable. Doing this actually serves two purposes. Through this analysis, I will be able to identify factors that demonstrate a significant relationship with the outcome variable for inclusion in the logistic regression. Furthermore, it will allow me to identify empty cells in the table that may indicate the need to collapse data (Orme & Combs-Orme, 2009). While this step is an important part of regression analysis, in large datasets such as this one, few empty cells are expected to be found. Additionally, with large datasets, tests using chi-square often results in spurious significant results (Fox, 2015).

For continuous variables, I will conduct an independent t-test or Mann Whitney U when necessary. For the logistic regression, I will only include variables that have a significant difference in this test. When testing the null hypothesis that all odds ratios (OR) equal 1 (or that all slopes equal 0), the F-test used is the likelihood ratio χ^2 test or the Wald χ^2 test. While in

small to medium sized samples the likelihood test is considered the better method, for large sample sizes like mine, either test is sufficient for examining this null hypothesis (Orme & Combs-Orme, 2009; Kleinbaum & Klein, 2002).

Outliers are data points that markedly atypical from other data in the sample. Outliers may pose significant risk to the interpretation of the results of the analysis (Orme & Combs-Orme, 2009). Outliers may result from a myriad of factors including data entry errors, model misspecification, rare events, or numerous other reasons (Cohen et al. 2003). Failing to identify outliers could result in flawed conclusions; however, larger sample sizes such as mine are considerably less prone to interpretation errors based on outliers (Orme & Combs-Orme, 2009).

Before beginning a logistic regression, the researcher must decide the method of entry for the multiple independent variables. SPSS has seven different methods of data entry available. I will be entering data in the Forward-LR method. The Forward-LR method of data entry is likely to most common method of data entry for logistic regression and is similar to stepwise entry in a multiple regression (Abu-Bader, 2011). Factors are included according to their maximum partial likelihood ratio, starting with the highest value and continuing until additional factors do not contribute to a change in the variance (Abu-Bader, 2011).

For continuous variables, consideration should be made if the scale of the variable is appropriate for the measurement or if it should be altered to meet the needs of the analysis (Orme & Combs-Orme, 2009). The data only have a couple of continuous variables: age, number of days in current placement, and number of days in out of home placement. These will be analyzed as continuous variables for age. In examining the data, some youth are reported in placements or in out of home care up to and including 7665 days (21 years). These variables will be recoded to

remain continuous; however, a cut-off date will be determined by examining the data and every day above that will be coded to the highest date.

Latent Transition Analysis

Latent Variable Mixture Modelling is a group of statistical tests that provides researchers an analytic tool with the flexibility to examine data for discrete patterns (Berlin, Williams, & Parra, 2014). One type of analysis in this is Latent Transition Analysis (LTA), which provides a method of analysis that allows a researcher to discern discrete latent groups that change over time (Collins & Lanza, 2010.

In LTA, the latent variable is nor measured directly but is indicated through the measurement of two of more variables together (Berlin et al., 2014). According to Collins and Lanza (2010), one advantage of this approach is that the analysis eliminates error in the latent variable even when error is present in the observed variables. Latent variables are always categorical variables (Wickrama, Lee, Walker O'Neal, & Lorenz, 2016). LTA closely resembles factor analysis; however, factor analysis results in a continuous variable (Collins & Lanza, 2010).

LTA offers a means to examine longitudinal data in a way that captures changes among participants over time. To begin a latent analysis, the researcher creates a contingency table for the variables of interest in order to examine their relationships with each other (Collins & Lanza, 2010). These tables are often large and complex because of the many variables included in the analysis. Each square in the table represents the potential combination of response sets from among the variables in the table (Wickrama et al., 2016). The latent classes are determined based on the analysis of the table, which is completed by the statistical software (mPlus in my

case). Differences among the emergent classes may be both qualitative and quantitative (Collins & Lanza, 2010).

Missing data are ignored in the analysis (Collins & Lanza, 2010). Only cells with complete data are included in the contingency table for the latent analysis. Missing data may be dealt with in several ways: Missing Completely At Random (MCAR); Missing At Random (MAR); and Missing Not At Random (MNAR). Both MCAR and MAR data can be handled by MPlus and is considered "ignorable missingness" (Collins & Lanza, 2010, p. 80). MNAR data is missingness related to an observed or unobserved variable that has not been included in the analysis (Collins & Lanza, 2010). Statistical approaches for LTA cannot handle MNAR data.

MNAR data may be handled in two rigorous ways: full-information maximum likelihood (FIML) and multiple imputation (MI) (Shafer, 1997 as cited by Collins & Lanza, 2010). FIML is model based and analyzes cases with complete data and cases with incomplete data; model estimates are made based on these comparisons (Collins & Lanza, 2010). FIML, however, cannot always handle MNAR in categorical grouping variables in LTA (Collins & Lanza, 2010). MI is a general approach to missing data that imputes plausible values in place of missing ones (Collins & Lanza, 2010).

MI offers distinct advantages over FIML in LTA. Auxiliary variables (those not included in the final analysis but may be related to missingness) can still be included in increase accuracy (Collins & Lanza, 2010). Additionally, MI can analyze the missingness of covariates and impute their values (Collins & Lanza, 2010). The primary disadvantage is the latent model must then be fit within each of the imputed sets and the results are combined into one analysis (Collins & Lanza, 2010).

The model may contain variables that are fixed or constrained. A fixed parameter is not estimated and is will not be estimated during the analysis. A constrained variable is placed in an equivalence set with other parameters and they are each constrained to have a value that is equal to the others (Collins & Lanza, 2010).

The goal of the analysis is to create the most parsimonious model that still provides the best scientific explanation for change over time. The latent classes that emerge are mutually exclusive and exhaustive (Collins & Lanza, 2010; Wickrama et al., 2016). Each class should be highly homogenous and highly separate from other classes. This means that within each class, the individuals have homogenous response sets. These response sets should be separate and distinct from other classes. Models that highly homogenous and separate are considered strong models (Collins & Lanza, 2010). Conversely, poor homogeneity or class separation makes distinction from among classes difficult (Collins & Lanza, 2010). Furthermore, high class separation indicates that homogeneity is likely present among the classes; however, the opposite is not always true: homogeneity of classes does not necessarily mean high separation (Collins & Lanza, 2010).

To determine if membership in each class in measured well, several tests may be used. Collins and Lanza (2010) suggested Nagin's (2005) odds of correct classification (OCC) test, which indicates the odd of improving the accuracy of the test. An OCC of 1 indicates that membership in a class is no greater than chance; a score of 5 or greater is desirable on the OCC (Nagin, 2005 as cited by Collins & Lanza, 2010).

Analysis requires that the researcher determine when the program cease looking for additional classes. This is done using the maximum likelihood parameter function or the expectation-maximization algorithm (Collins & Lanza, 2010). Stopping rules are often

determined by setting the maximum number of iterations that may be performed or by creating a stopping rule that determines when the search is close enough (Collins & Lanza, 20120). This is normally based on a numerical convergence index and the associated convergence criterion. The Maximum Absolute Deviation (MAD) is often used to accomplish this (Collins & Lanza, 2010). Collins and Lanza (2010) suggested using a MAD of ≥ .000001.

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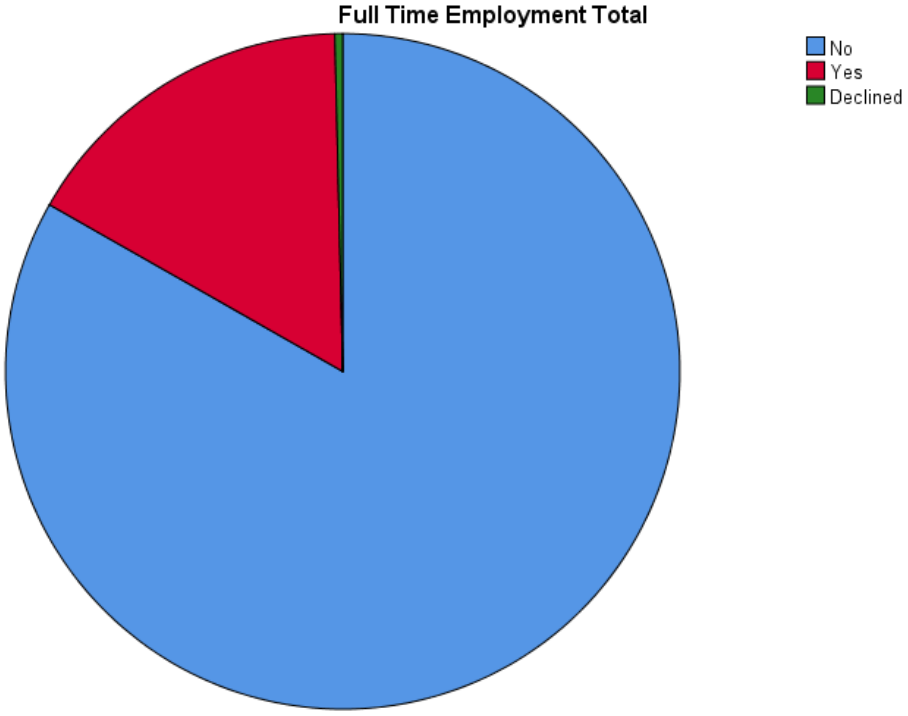
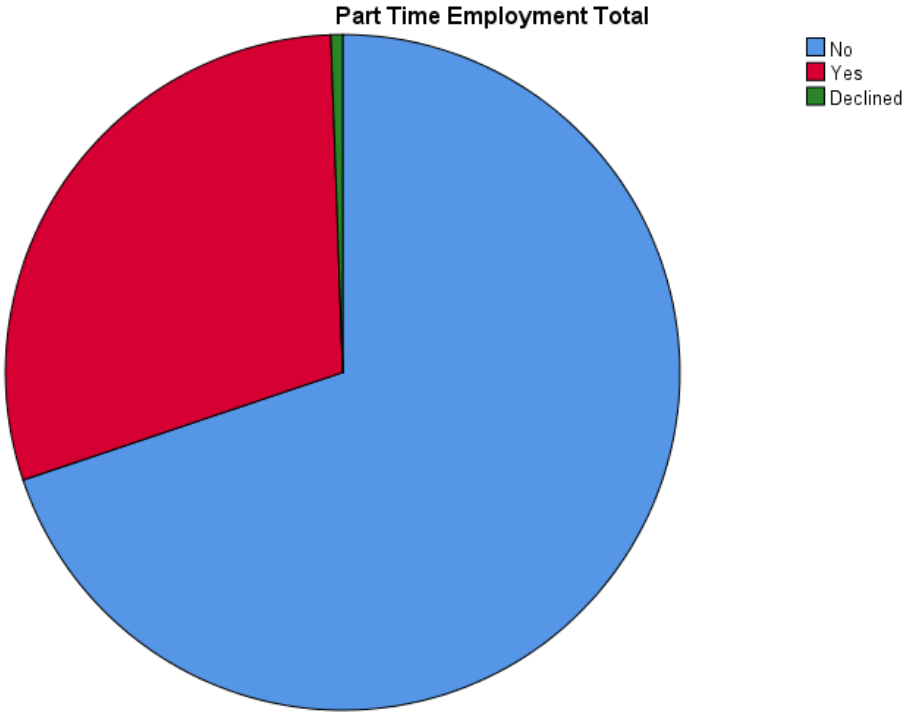
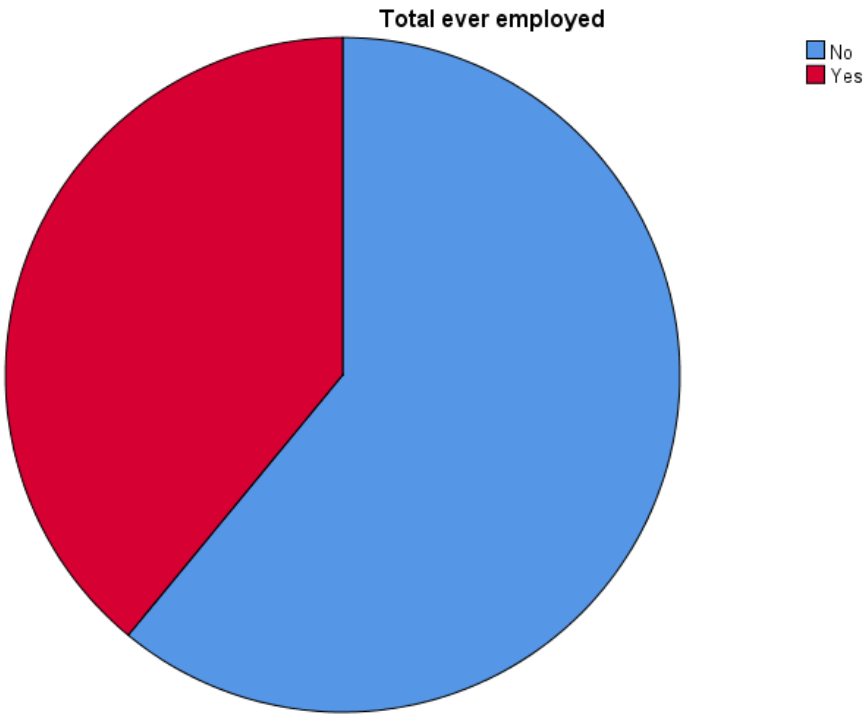
Appendix E: Tables, Charts, Histograms






Total ever employed
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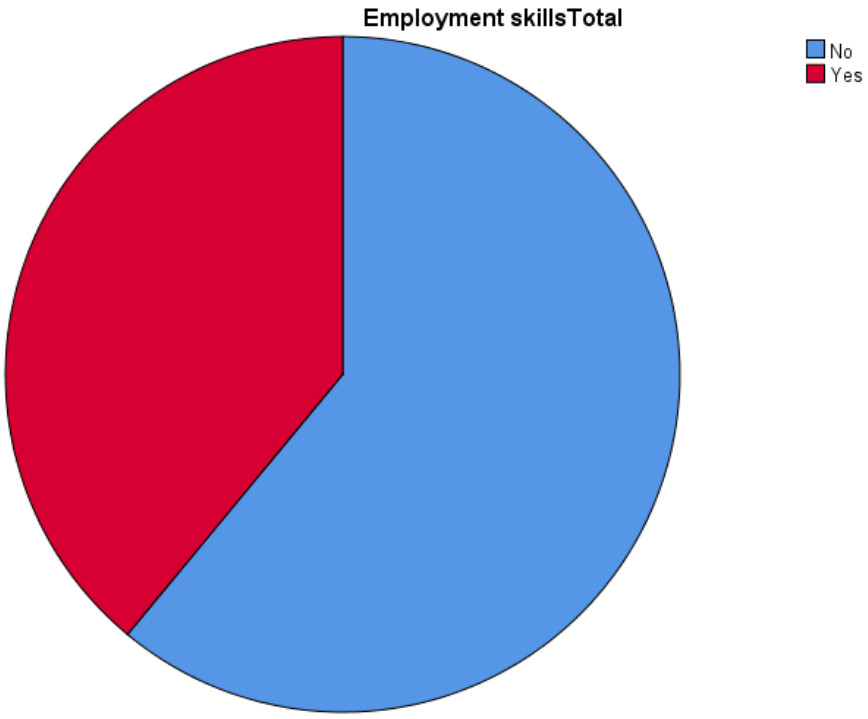
Yes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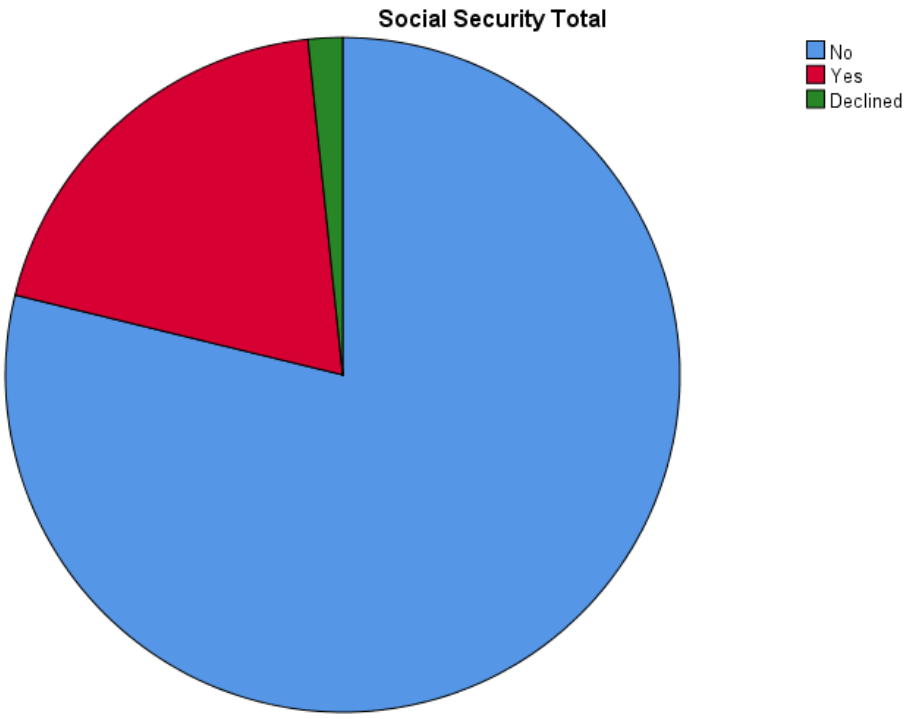
Social Security Total
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Yes
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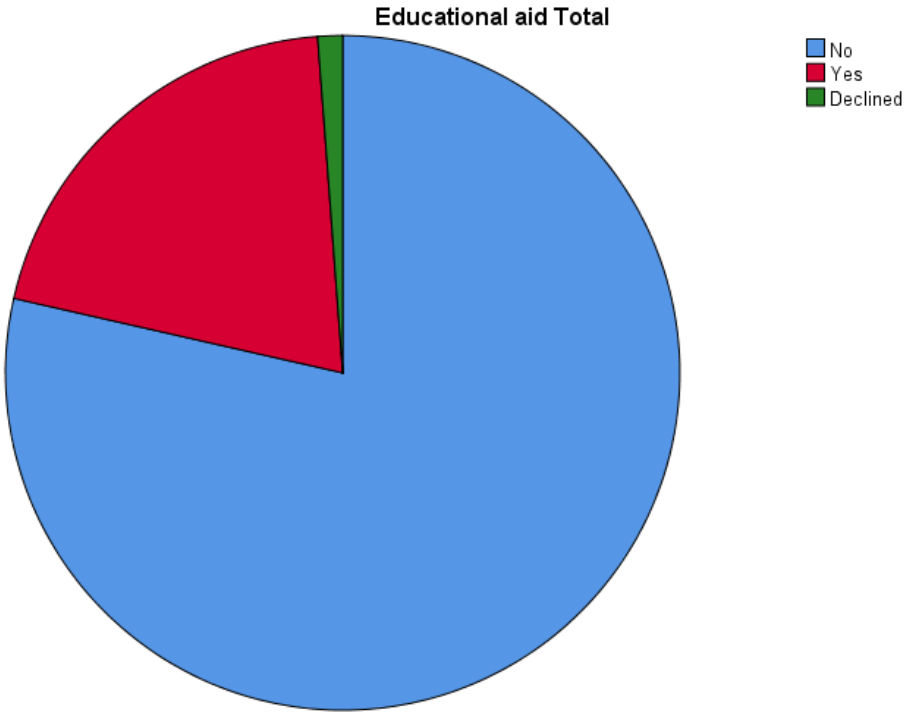
Educational aid Total
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Yes
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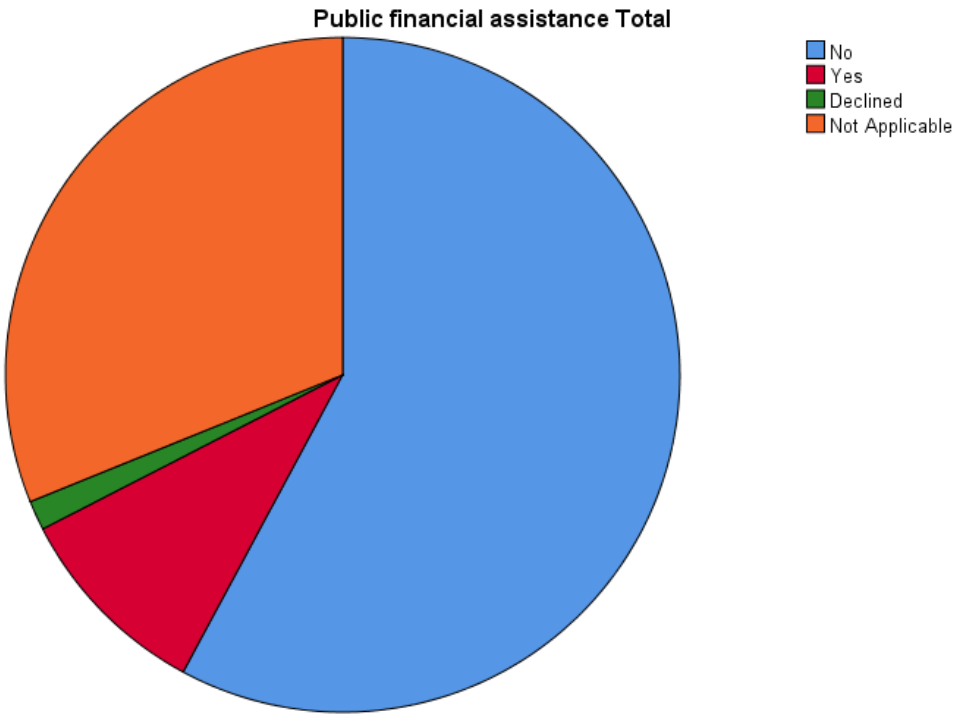
Public financial assistance Total
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Yes
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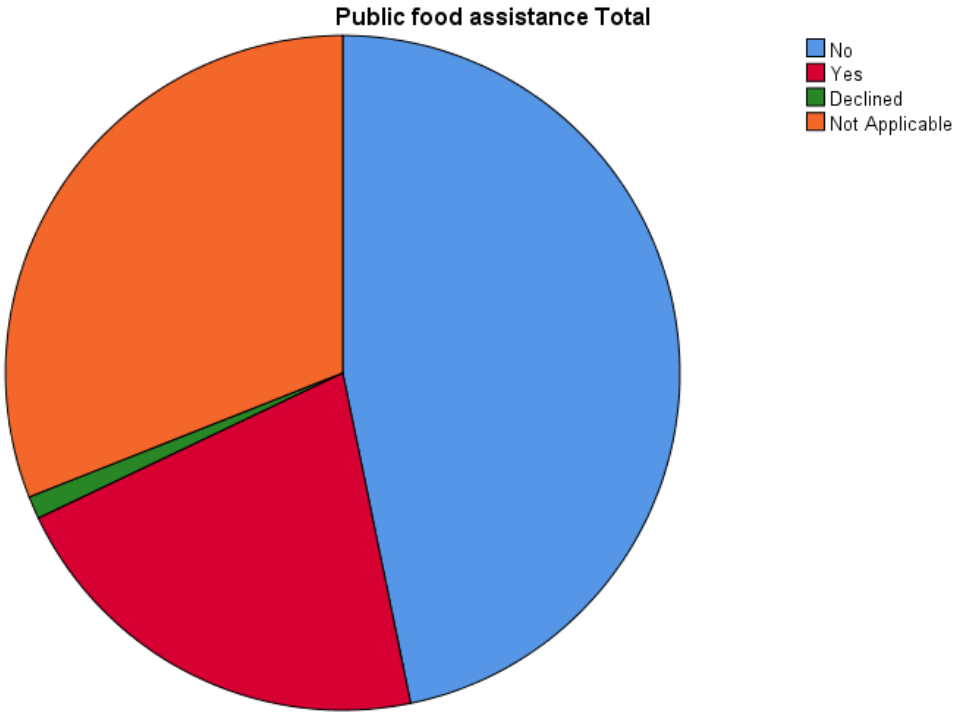
Not Applicable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Yes
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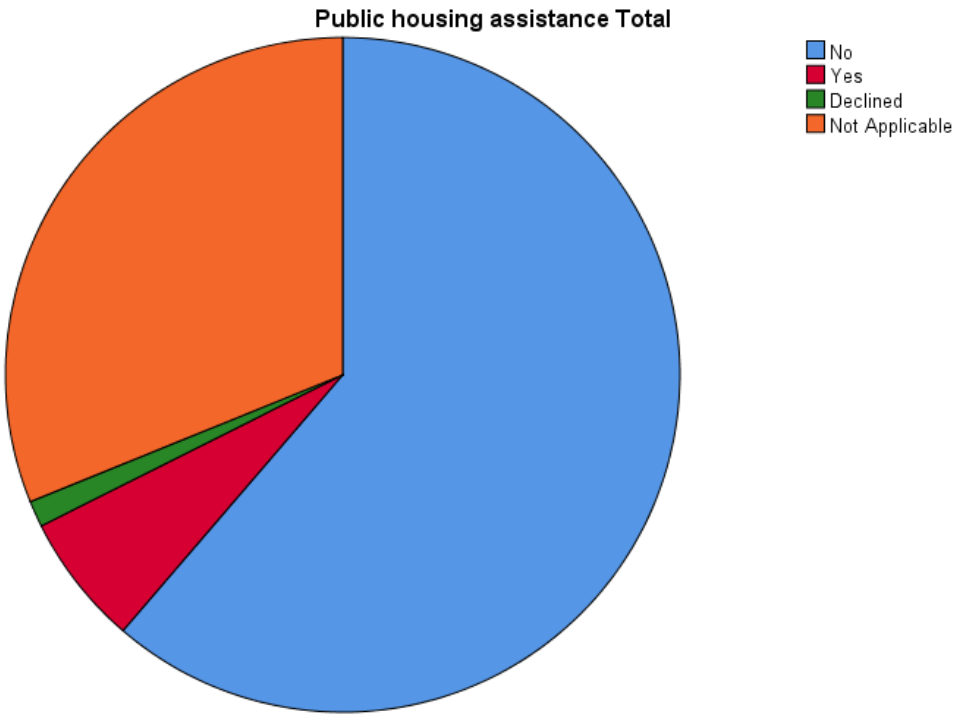
Not Applicable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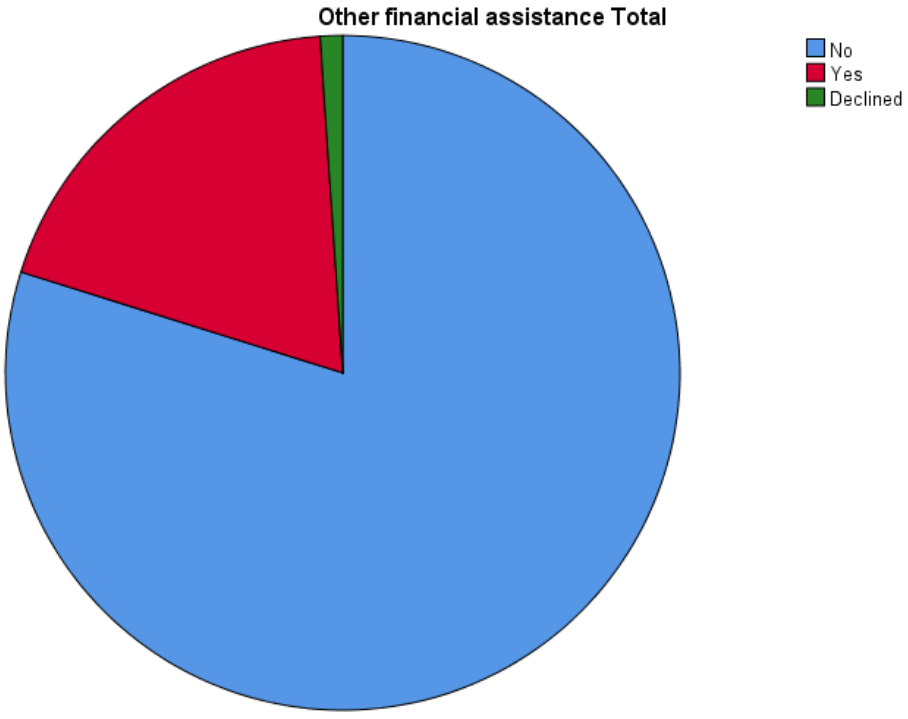
Not Applicable


Other financial assistance Total
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Yes
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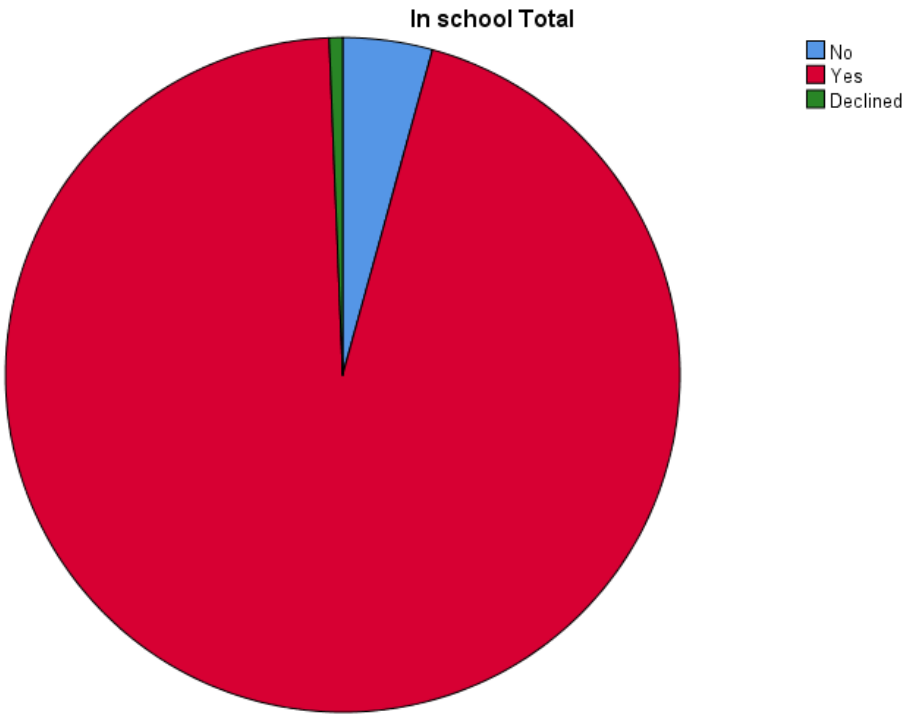
In school Total
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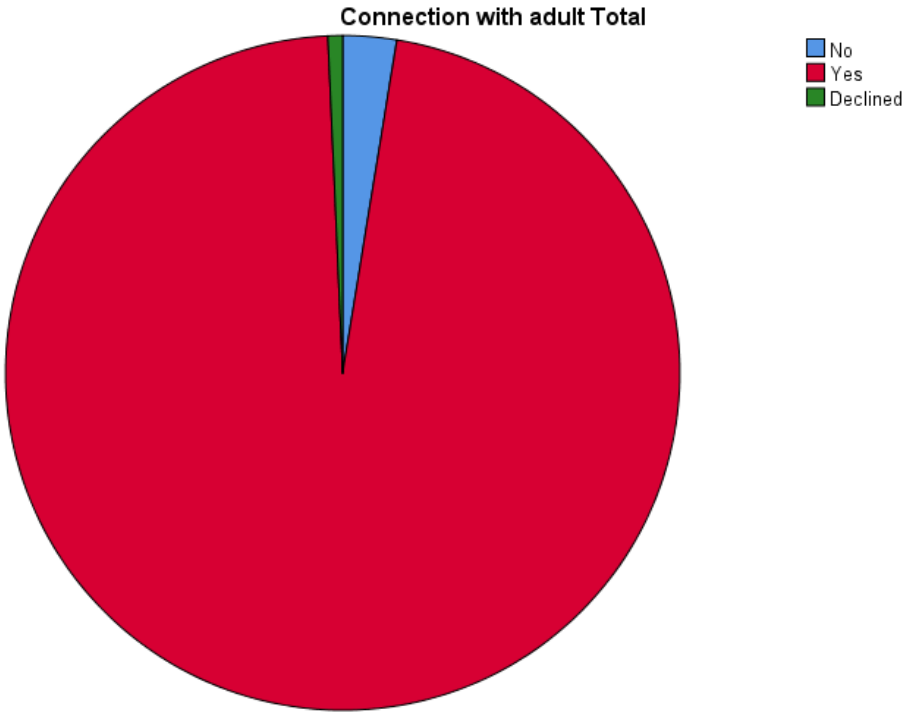
Connection with adult Total
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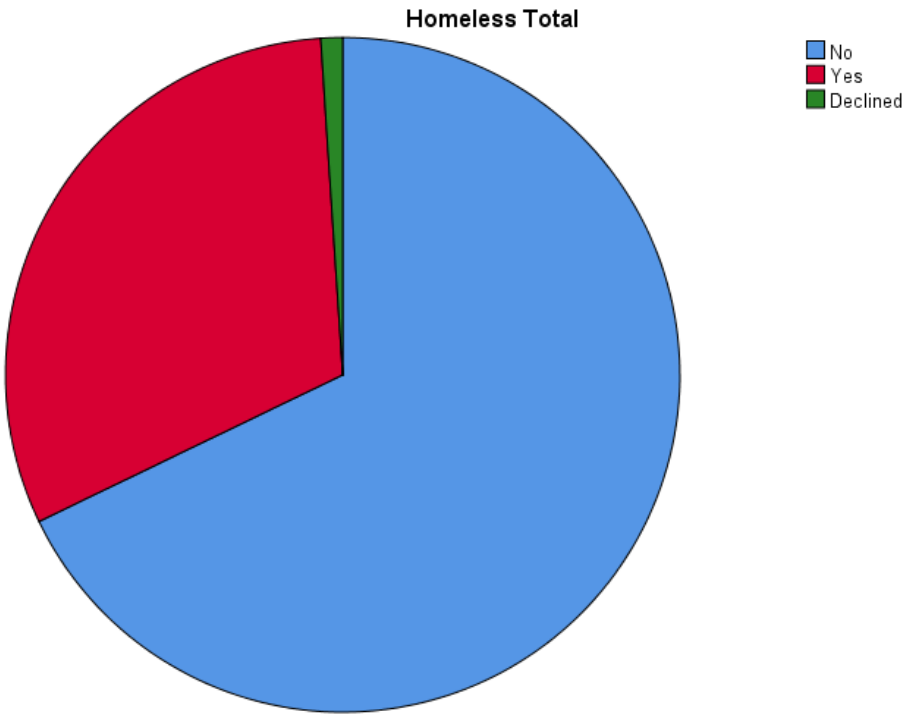
Yes
Declined


Homeless Total
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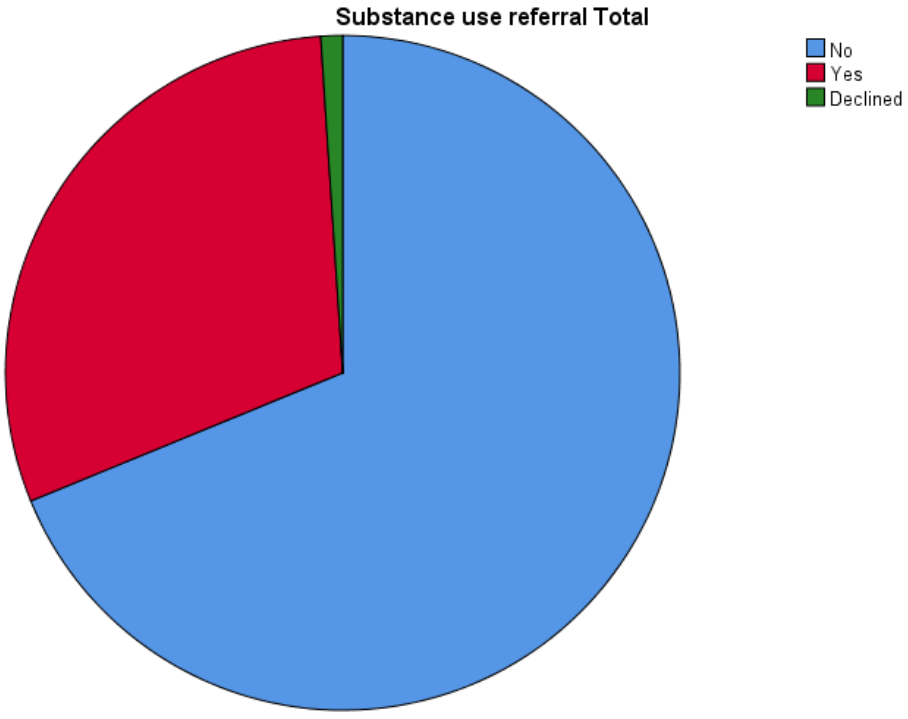
Substance use referral Total
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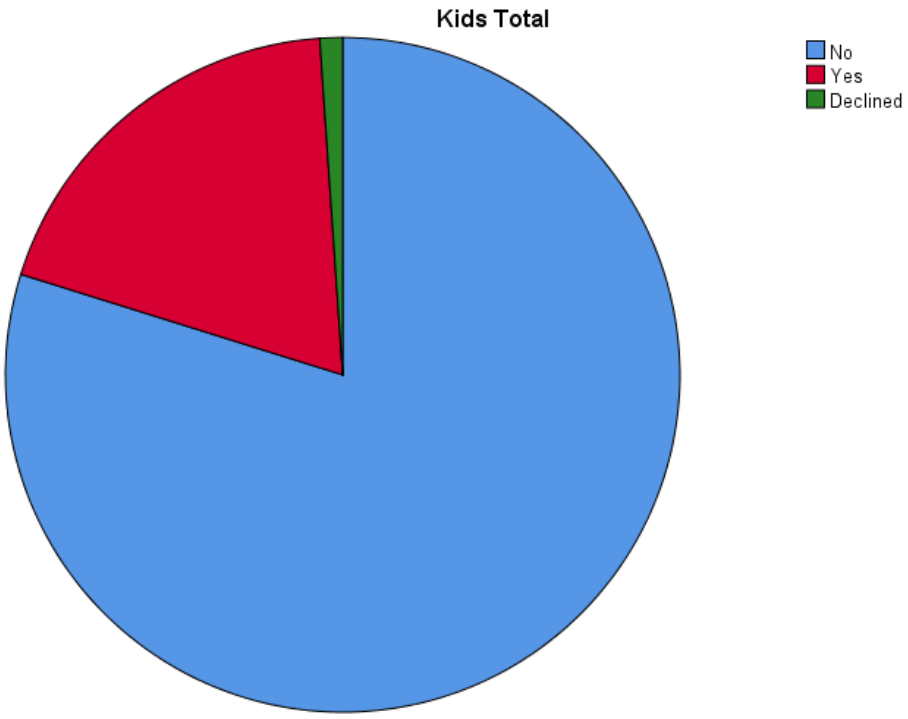
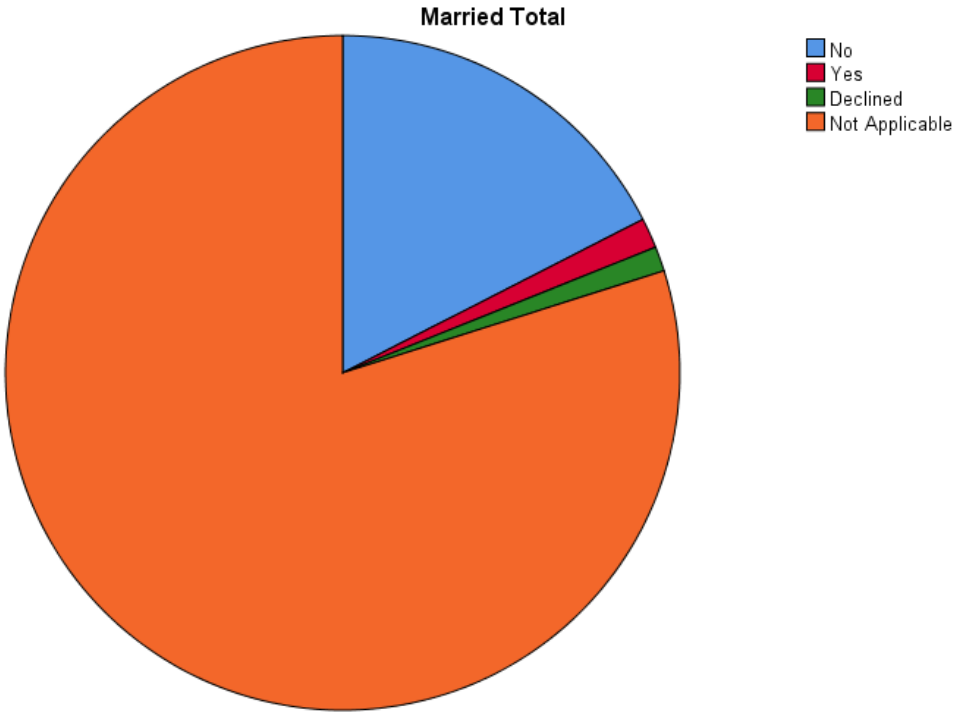
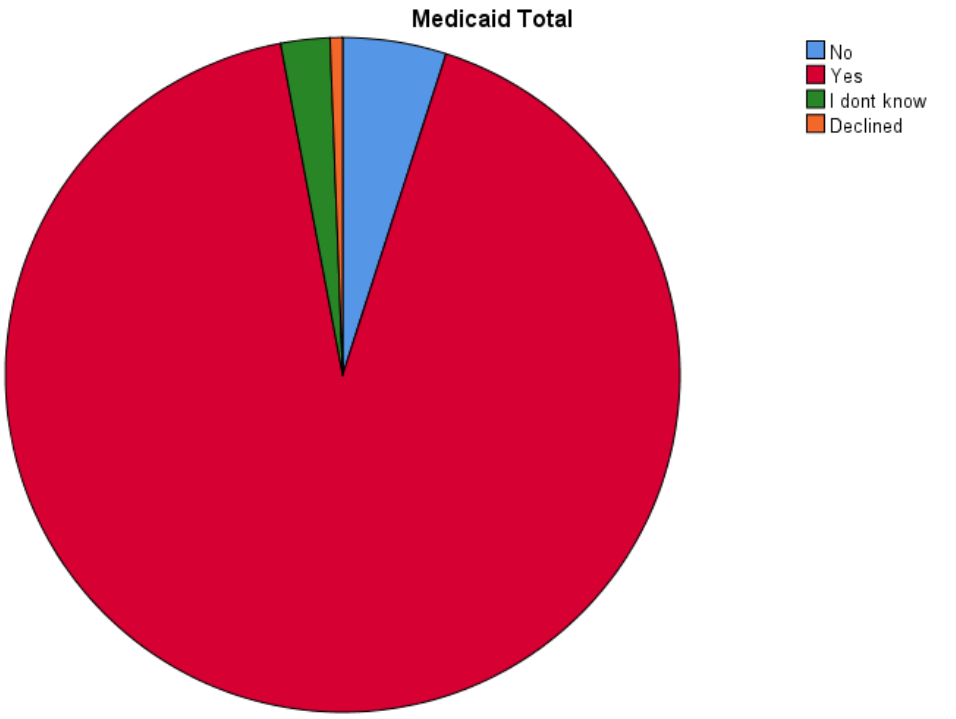
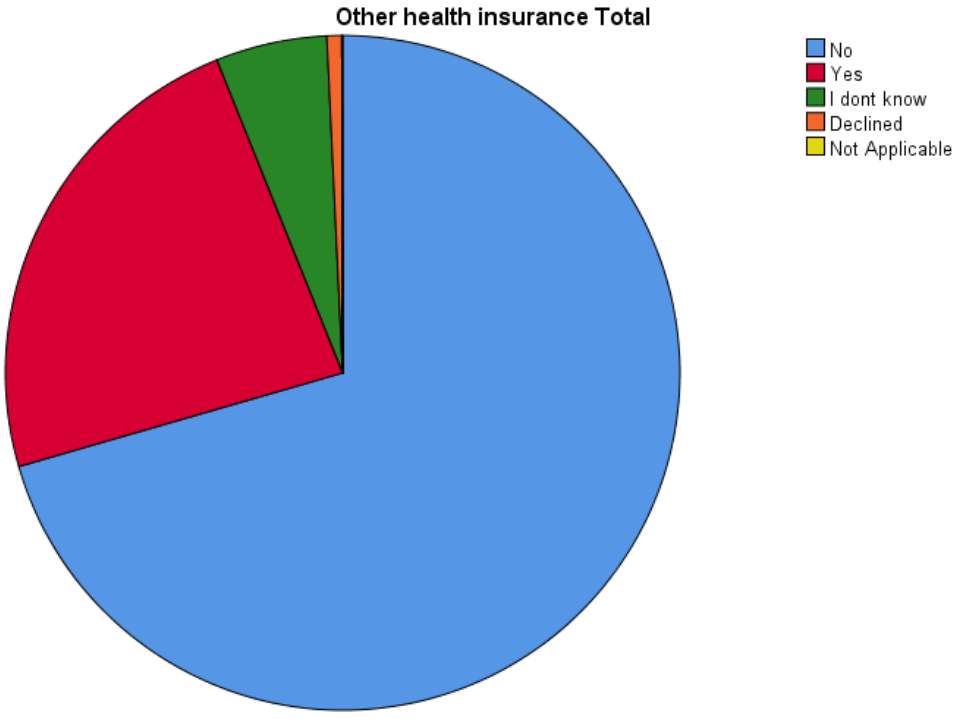
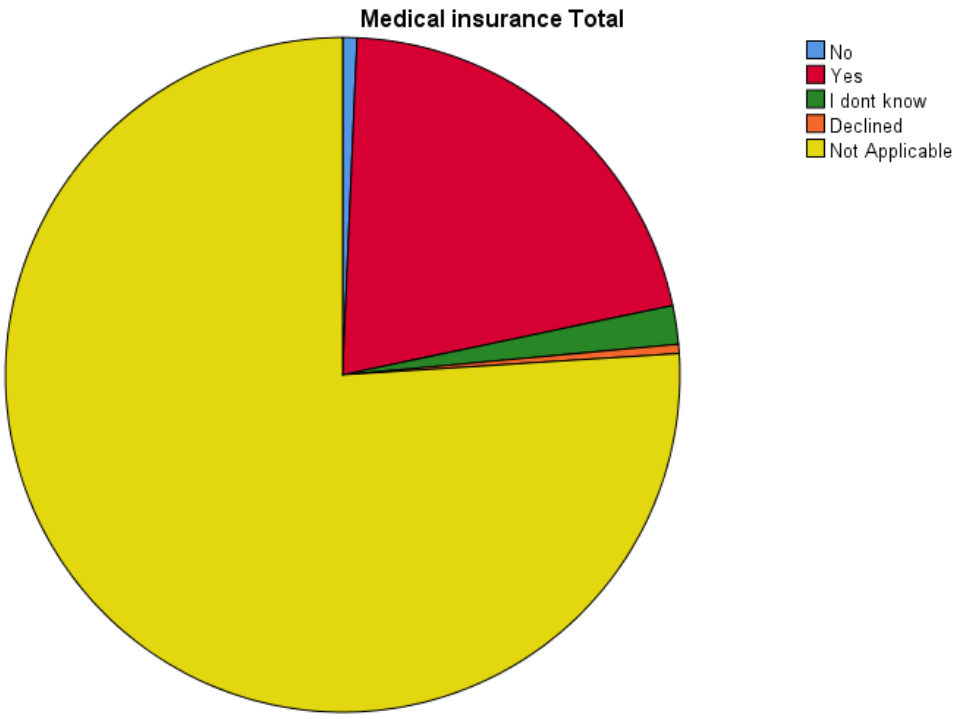
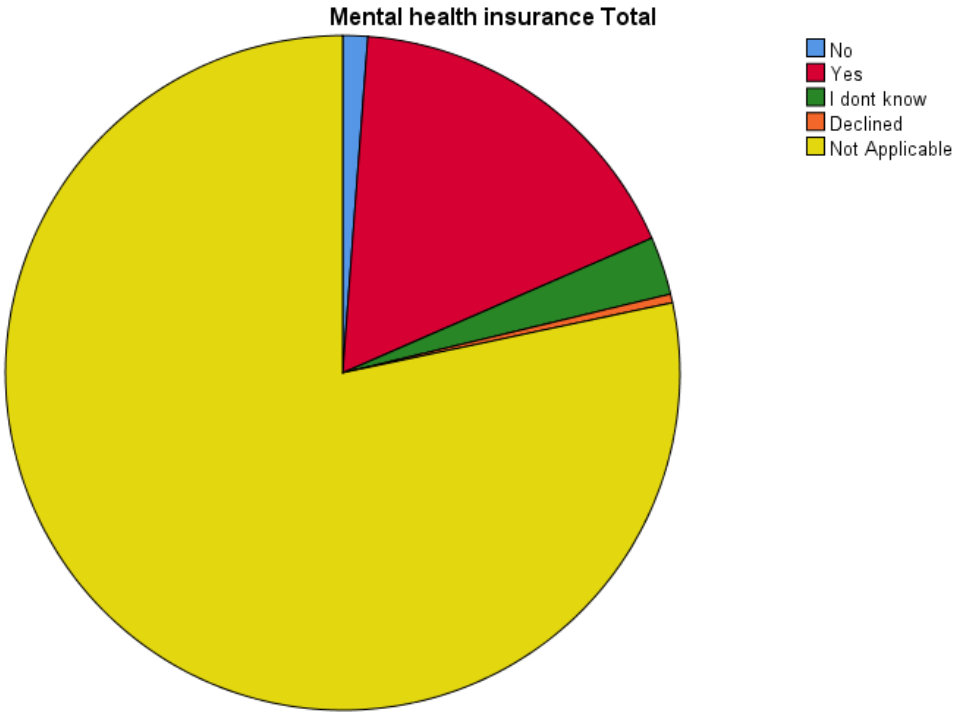

Kids Total
No
Yes
Declined

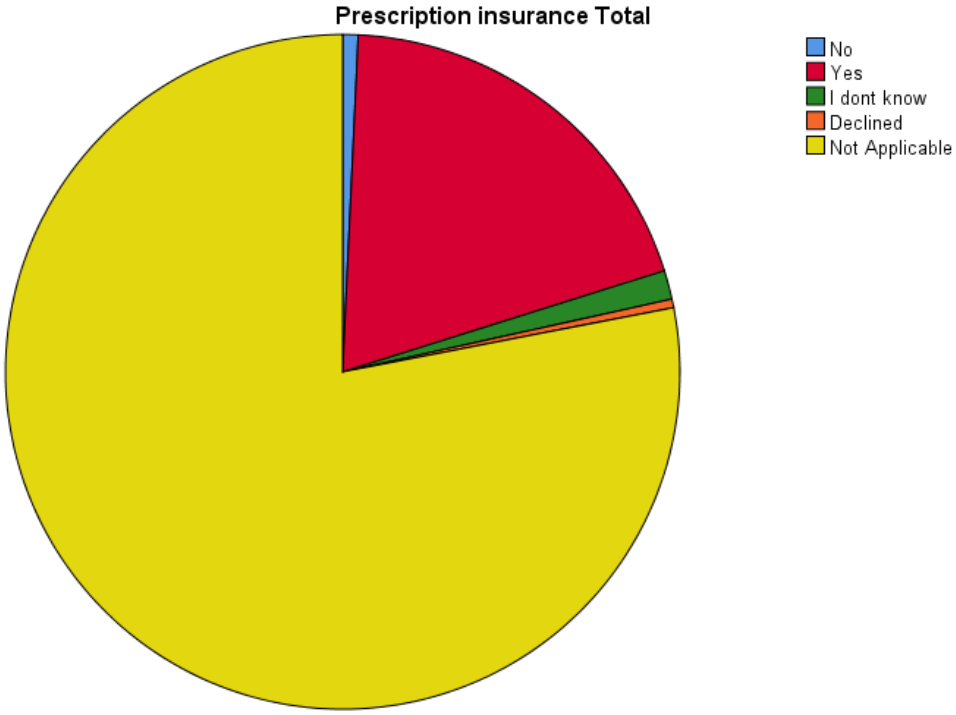

Married Total
No
Yes
Declined
Not Applicable

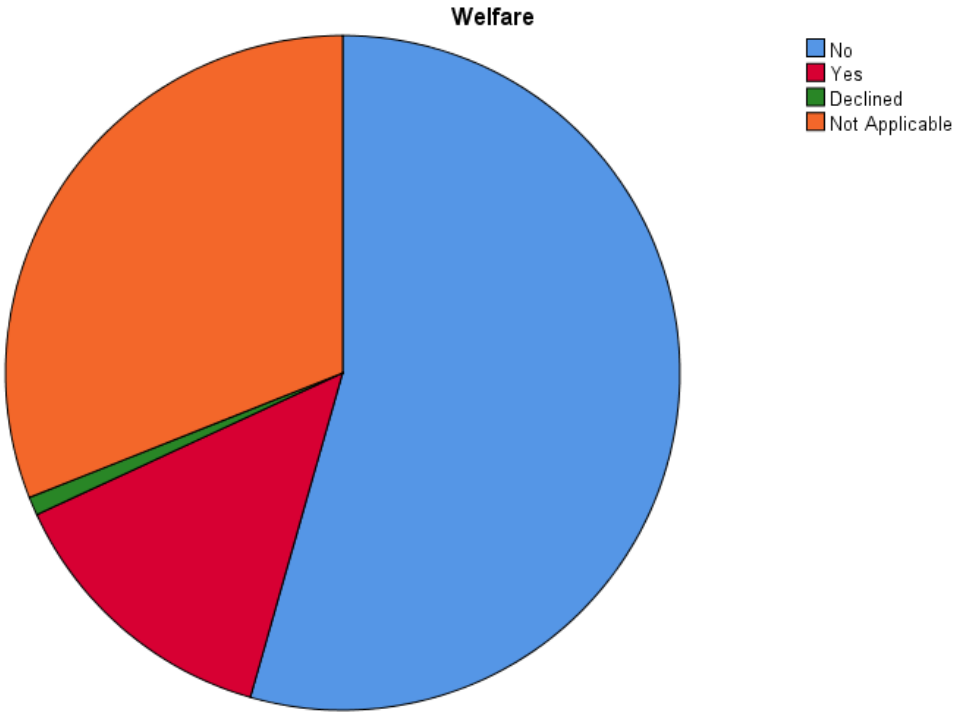

Medicaid Total
No
Yes
I dont know
Declined

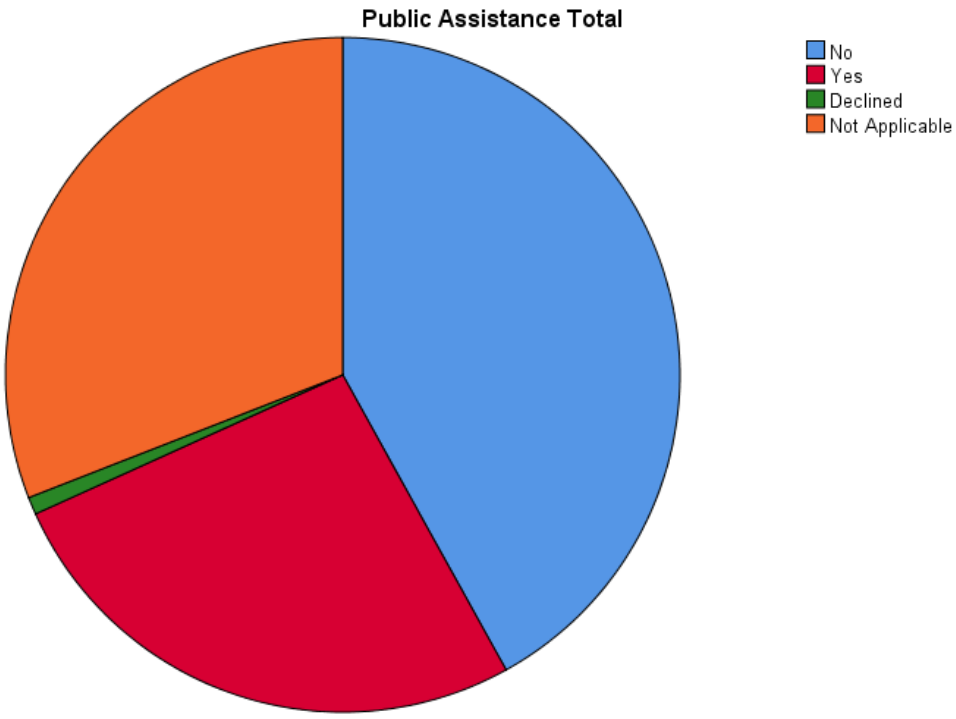

Other health insurance Total
No
Yes
I dont know
Declined
Not Applicable

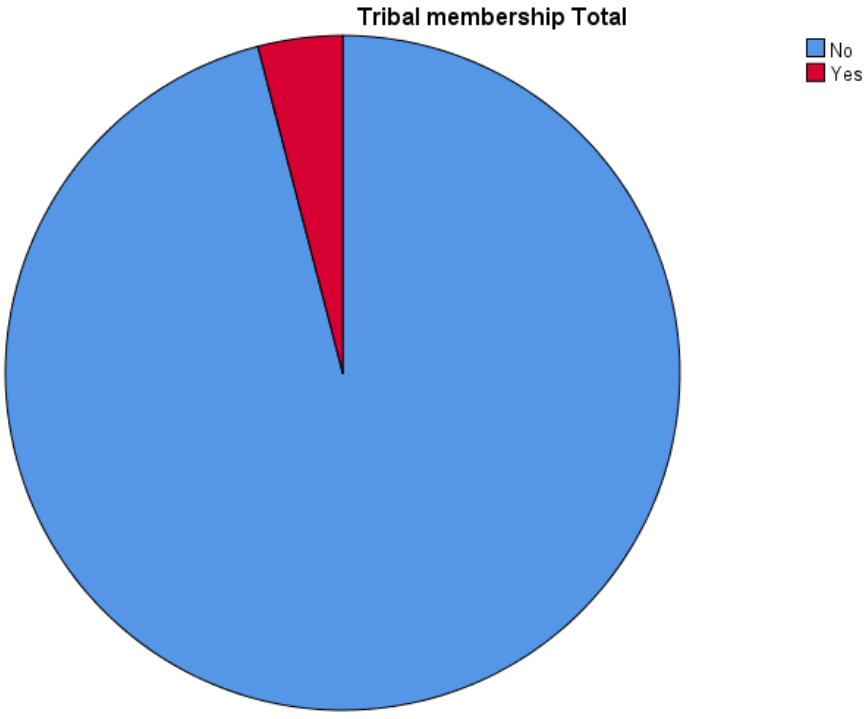

Medical insurance Total
No
Yes
I dont know
Declined
Not Applicable

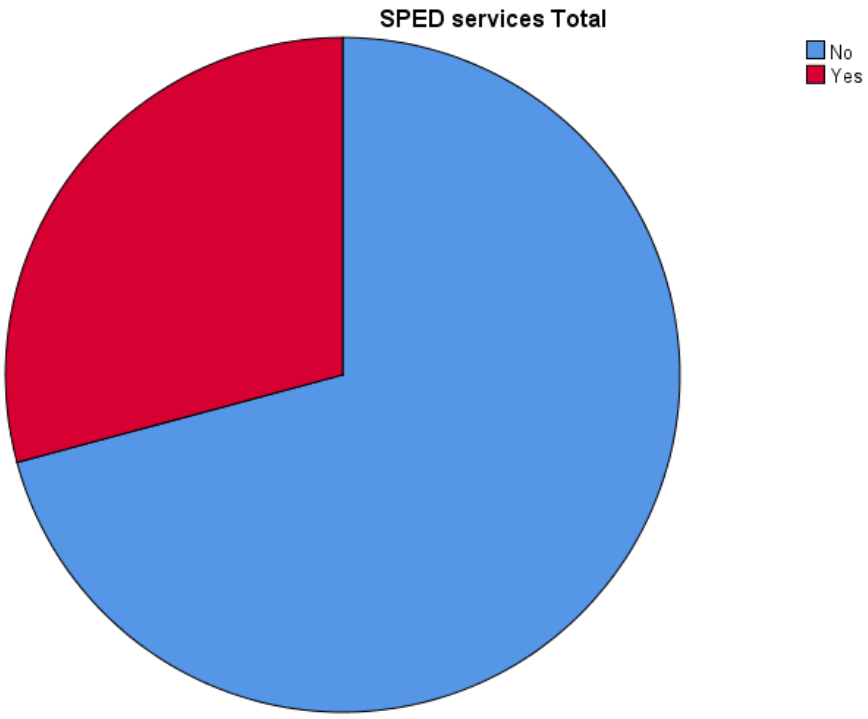

Mental health insurance Total
No
Yes
I dont know
Declined
Not Applicable

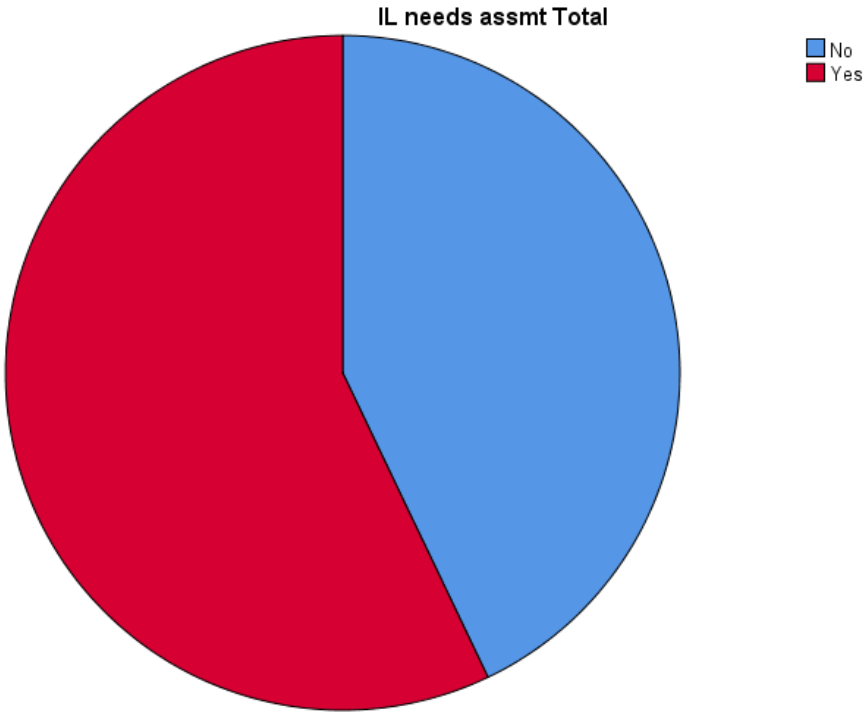

Prescription insurance Total
No
Yes
I dont know
Declined
Not Applicable

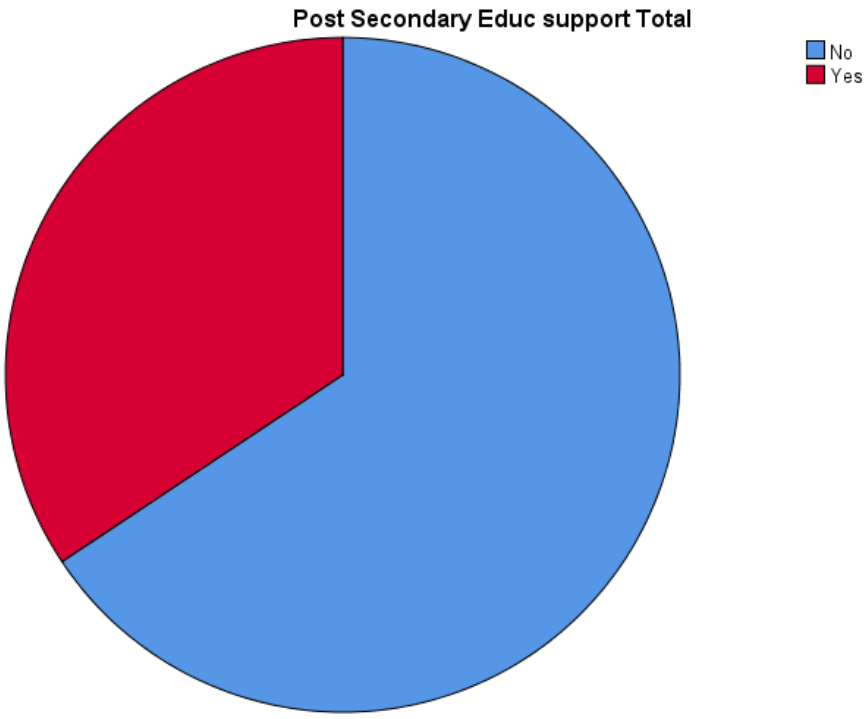

Welfare
No
Yes
Declined
Not Applicable

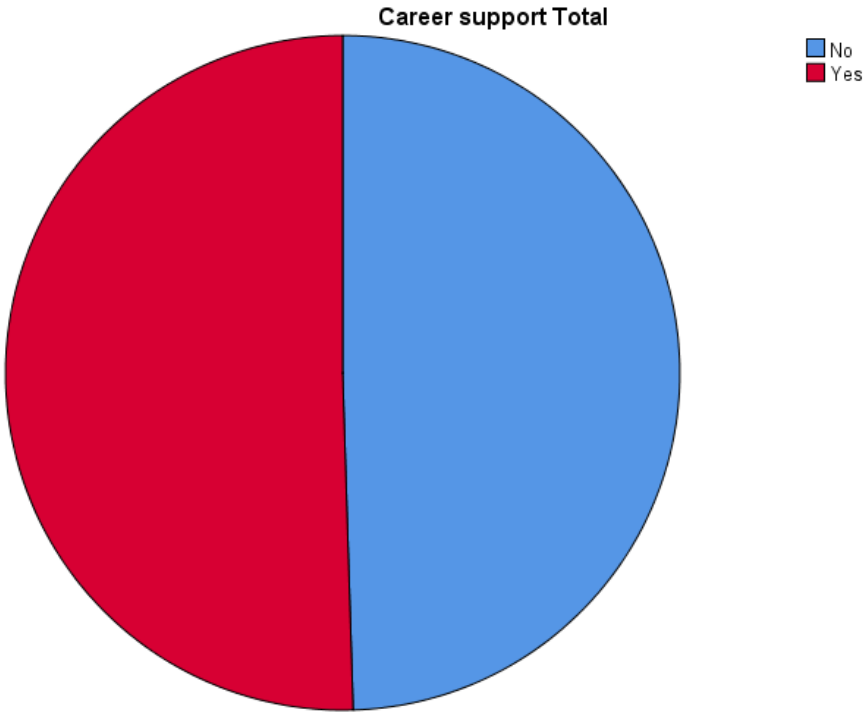

Public Assistance Total
No
Yes
Declined
Not Applicable

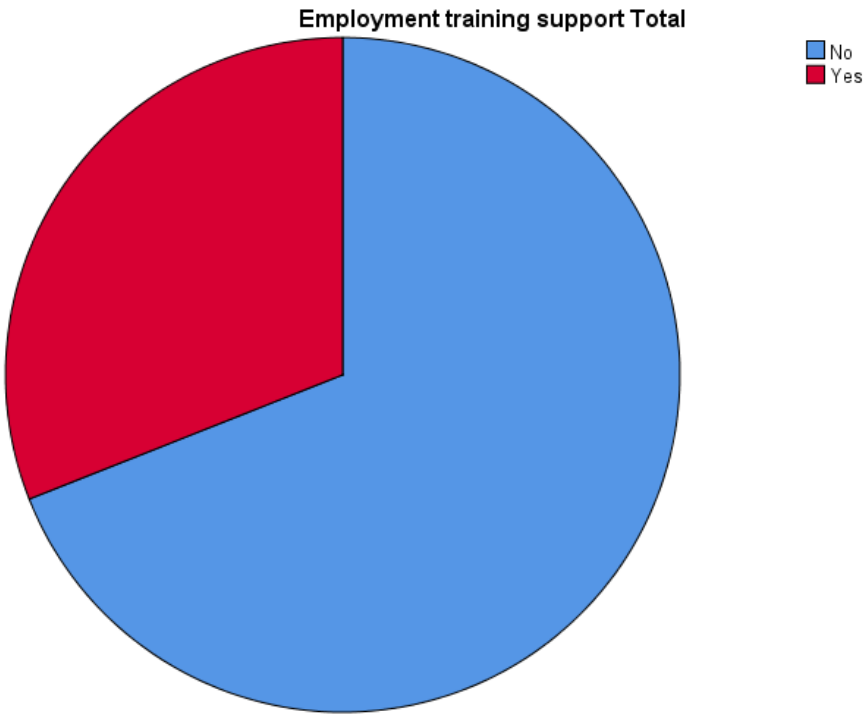

Tribal membership Total
No
Yes

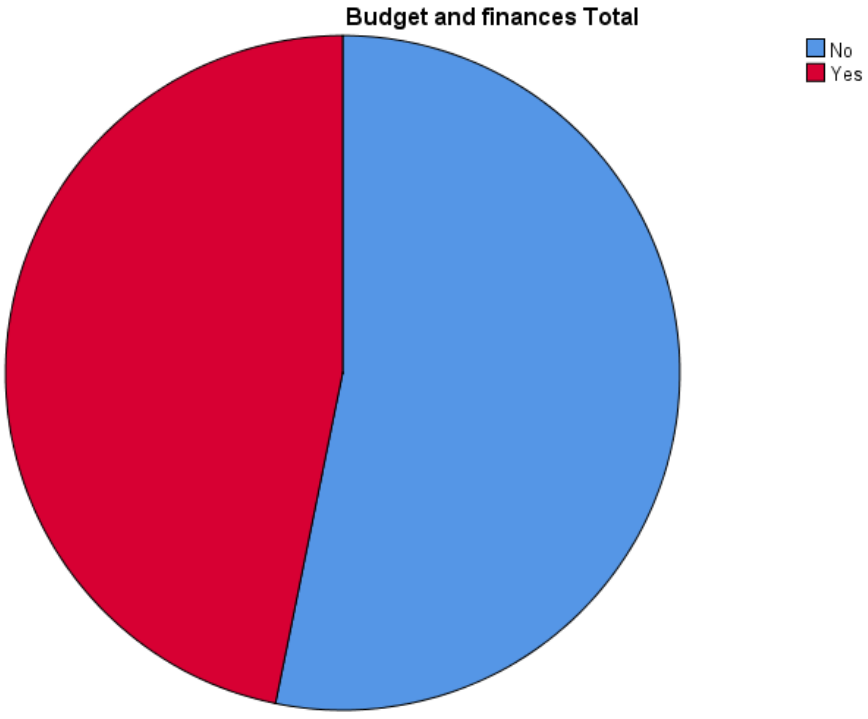

SPED services Total
No
Yes

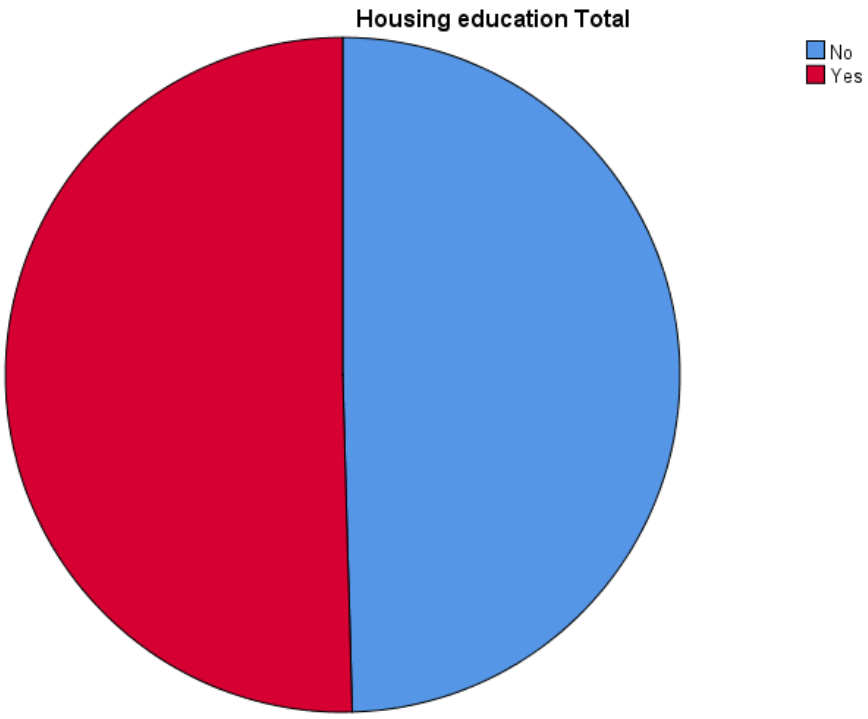

IL needs assmt Total
No
Yes

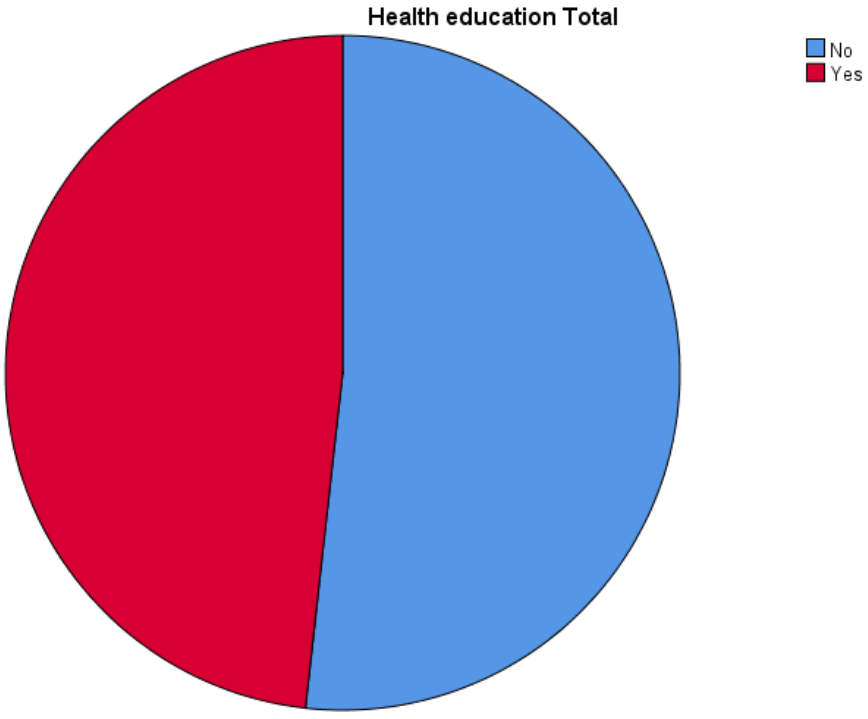

Post Secondary Educ support Total
No
Yes

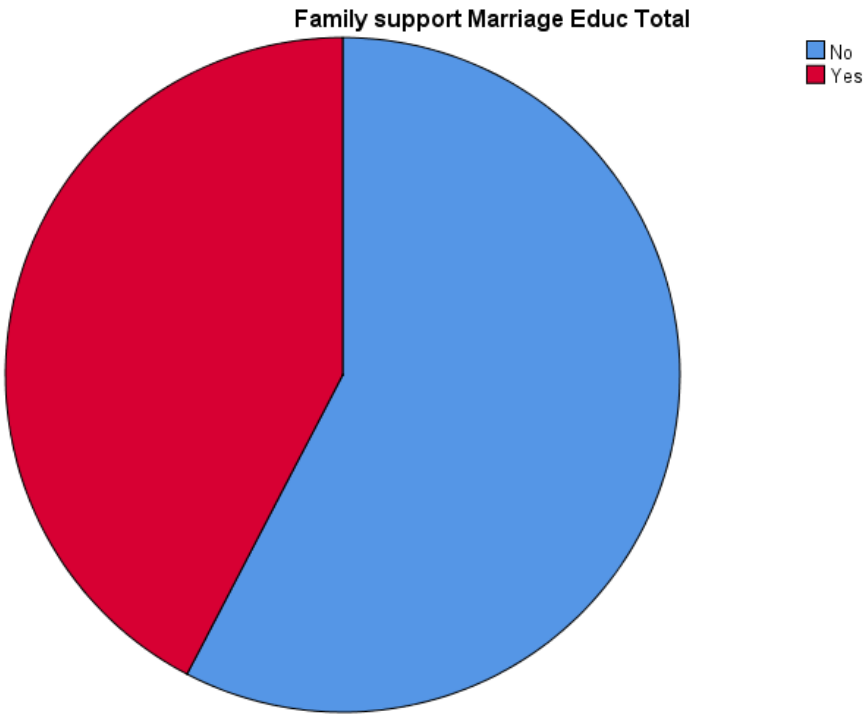

Career support Total
No
Yes

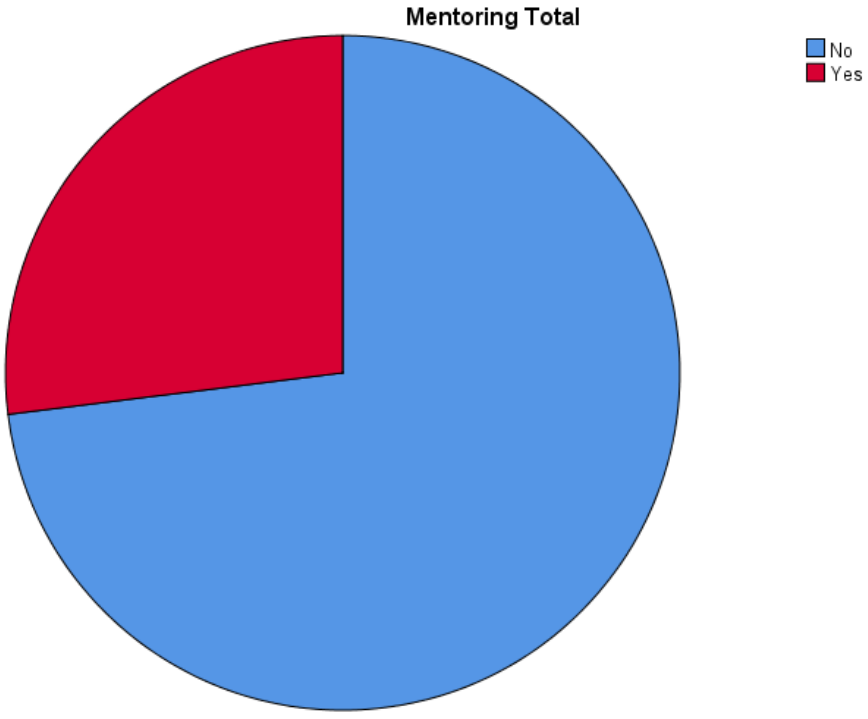

Employment training support Total
No
Yes

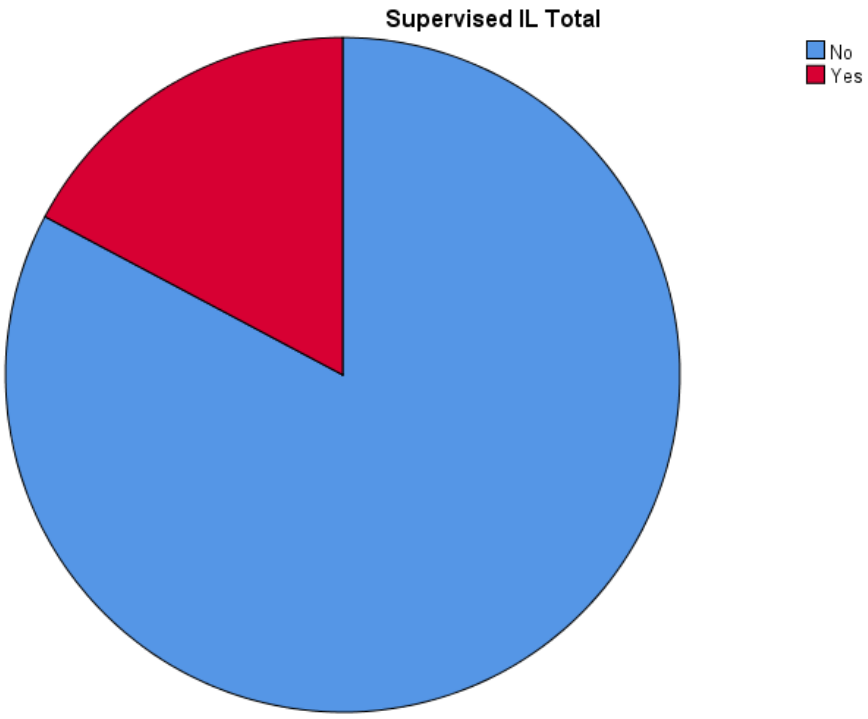

Budget and finances Total
No
Yes

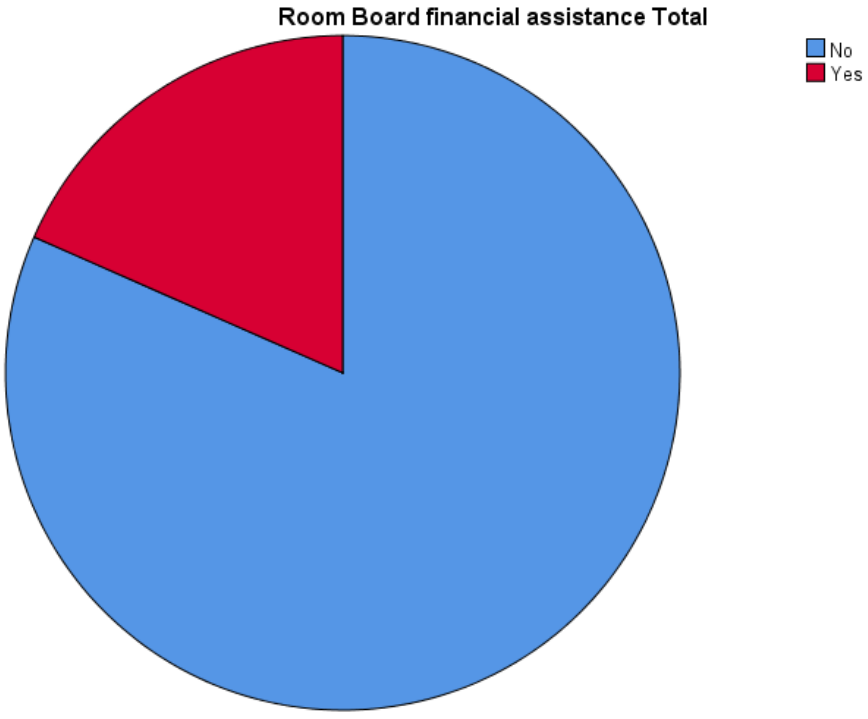

Housing education Total
No
Yes

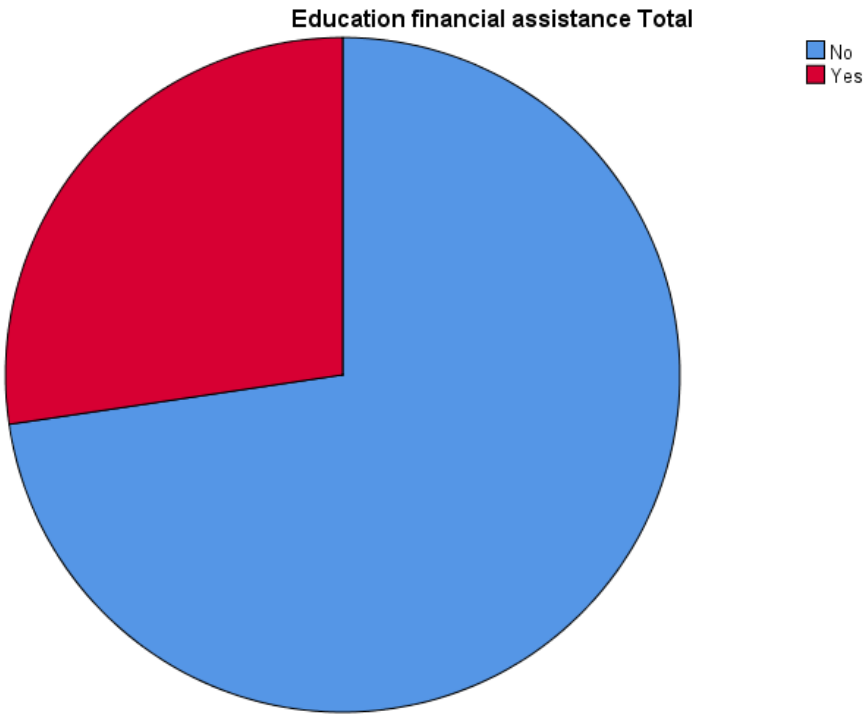

Health education Total
No
Yes

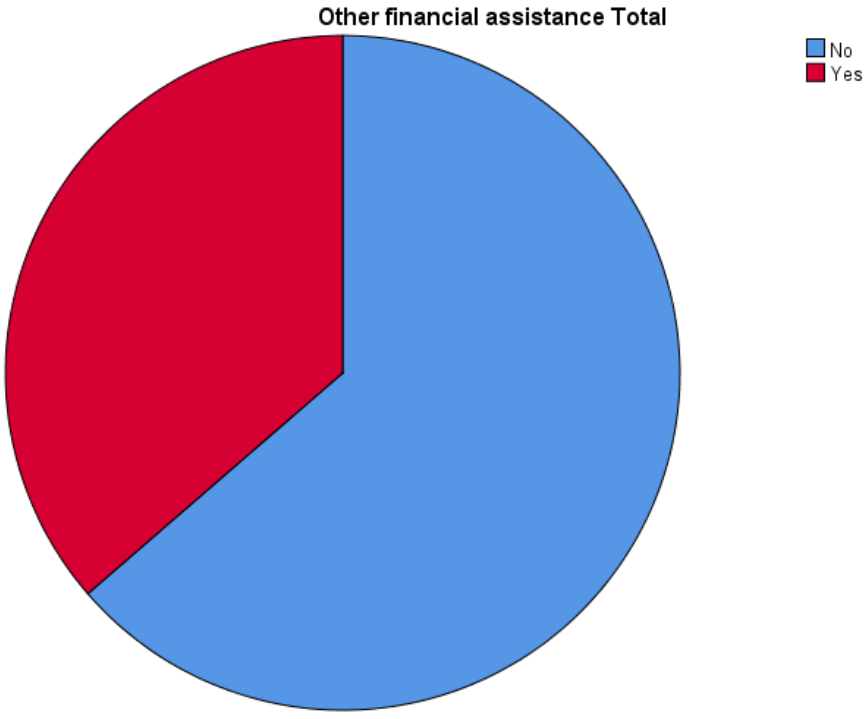

Family support Marriage Educ Total
No
Yes


Mentoring Total
No
Yes


Supervised IL Total
No
Yes


Room Board financial assistance Total
No
Yes


Education financial assistance Total
No
Yes


Other financial assistance Total
No
Yes

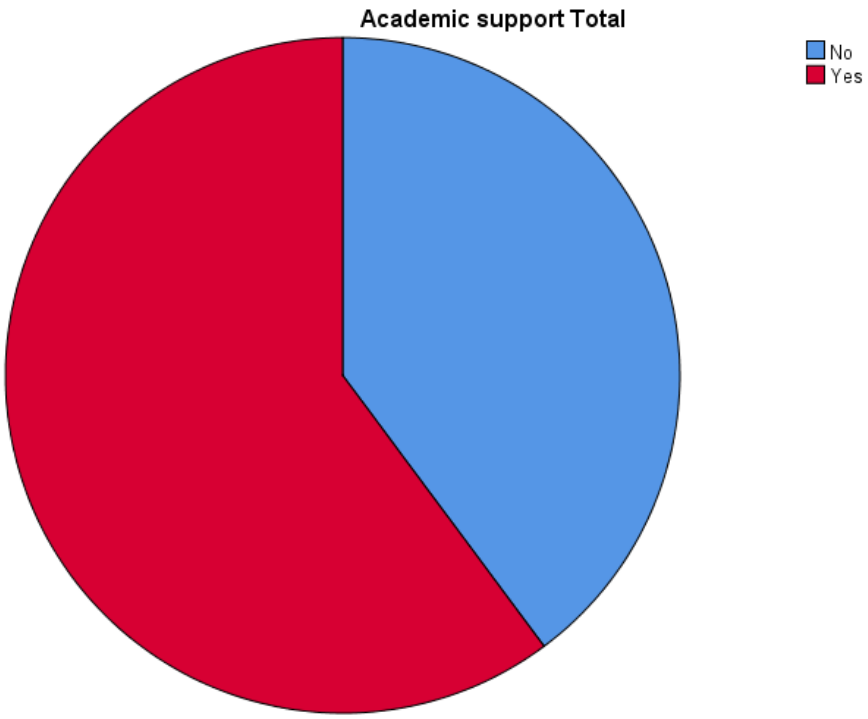
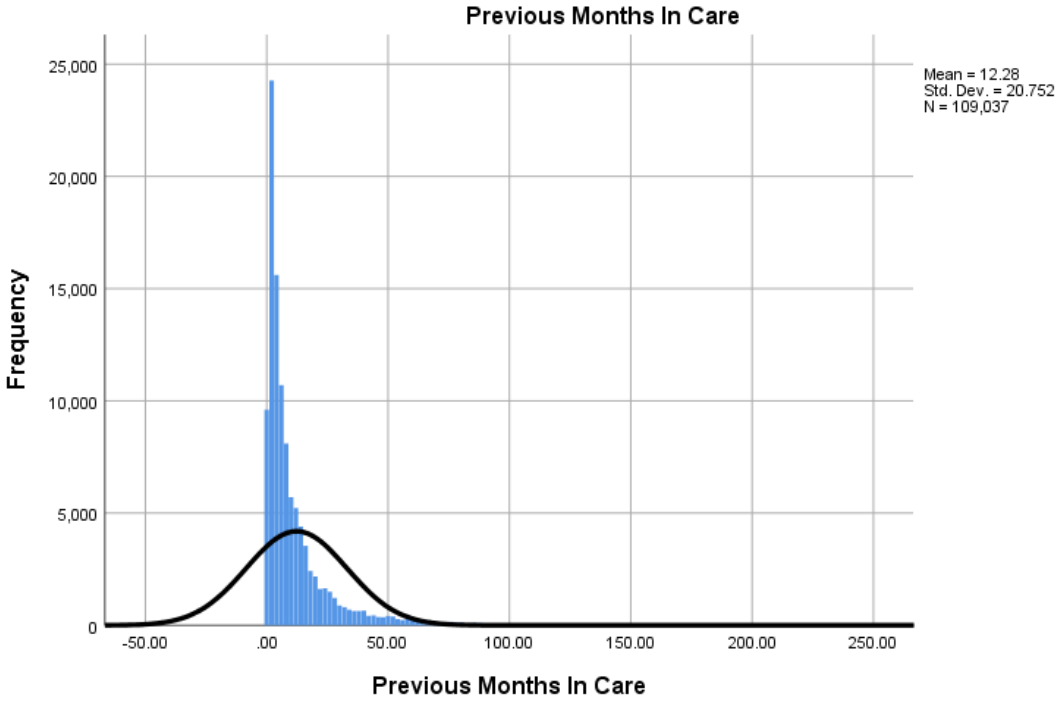
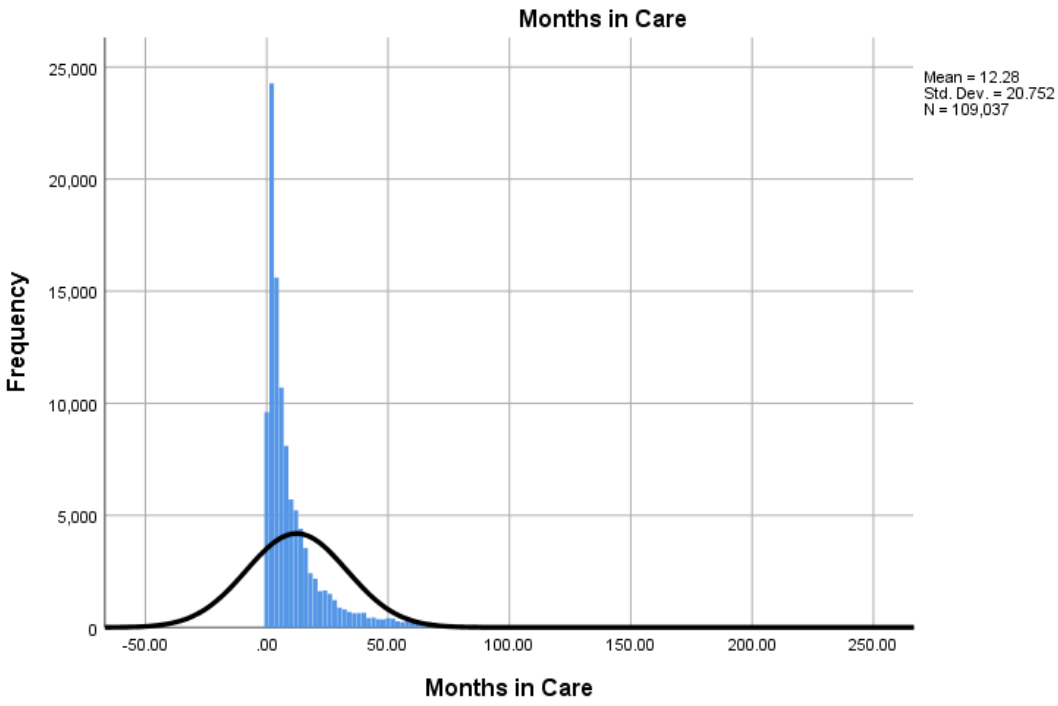
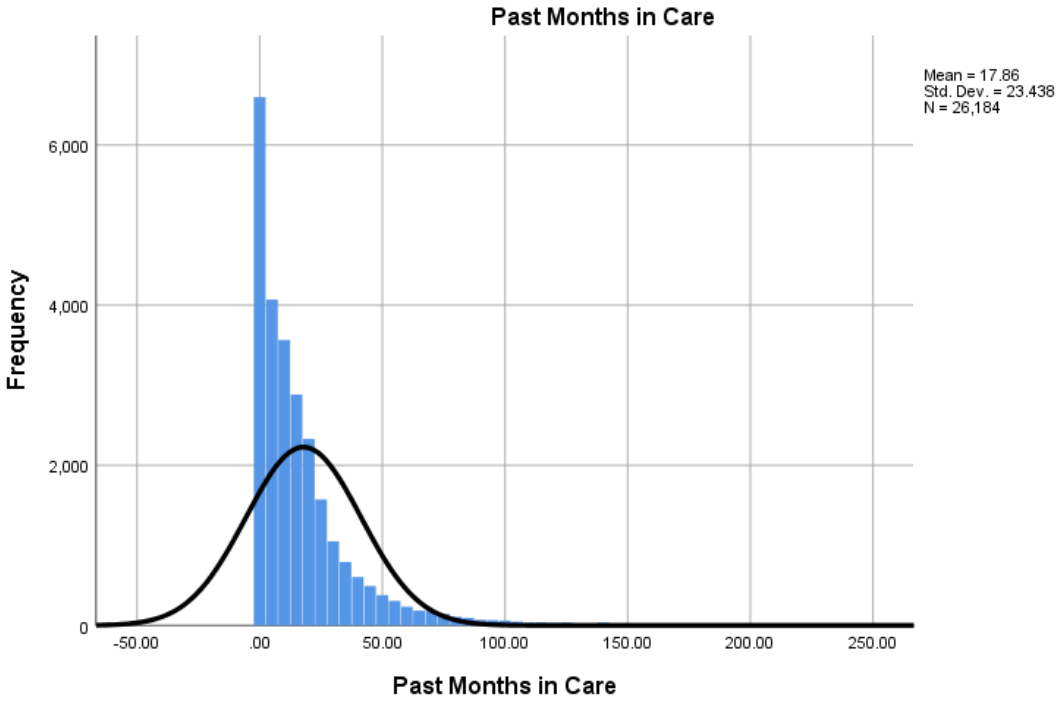

Academic support Total
No
Yes

Table Time in care variables

		Age at most removal	Previous Months In Care	Months in Care	Past Months in Care	Total months in care
N	Valid	113416	109037	109037	26184	25103
	Missing	14	4393	4393	87246	88327
Mean		12.69	12.28	12.28	17.85	29.35
Median		14.00	5.00	5.00	11.00	21.00
Mode		15.00	1.00	1.00	.00	3.00
Std. Deviation		3.63	20.75	20.75	23.43	29.86
Skewness		-1.32	4.35	4.35	2.92	2.34
Std. Error of Skewness		.007	.007	.007	.015	.015
Kurtosis		1.61	26.17	26.171	12.067	7.66
Std. Error of Kurtosis		.02	.015	.015	.030	.031




Months in Care
Mean = 12.28
Std. Dev. = 20.752
N = 109,037
Frequency
25,000
20,000
15,000
10,000
5,000
0
-50.00
.00
50.00
100.00
150.00
200.00
250.00
Months in Care


Past Months in Care
Mean = 17.86
Std. Dev. = 23.438
N = 26,184
Frequency
6,000
4,000
2,000
0
-50.00
.00
50.00
100.00
150.00
200.00
250.00
Past Months in Care

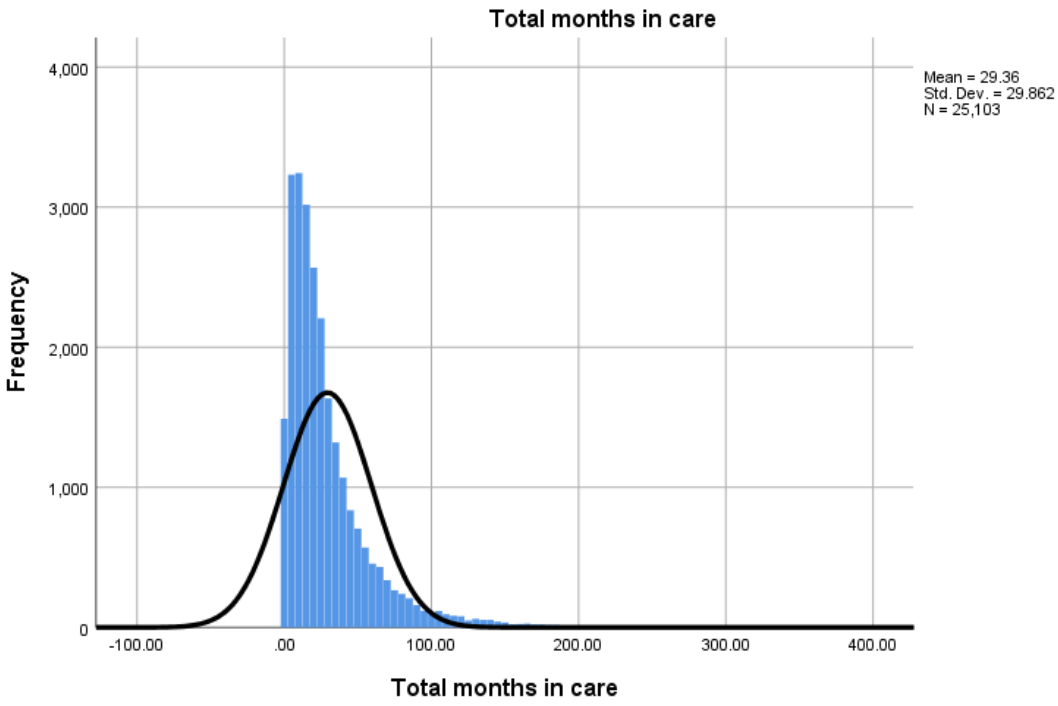
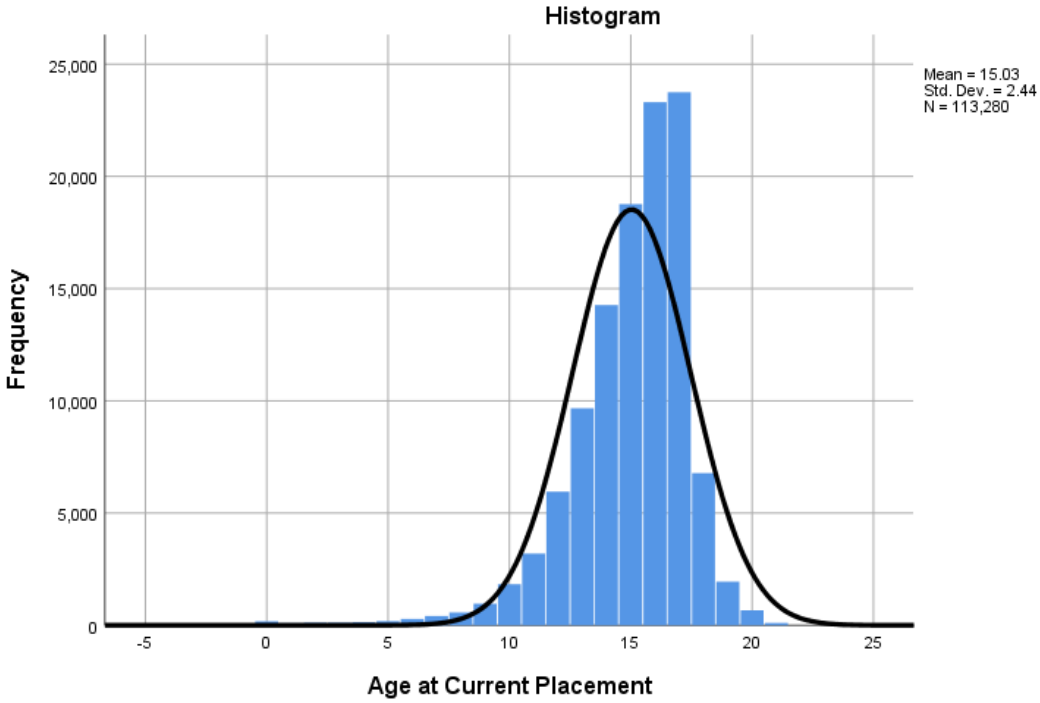
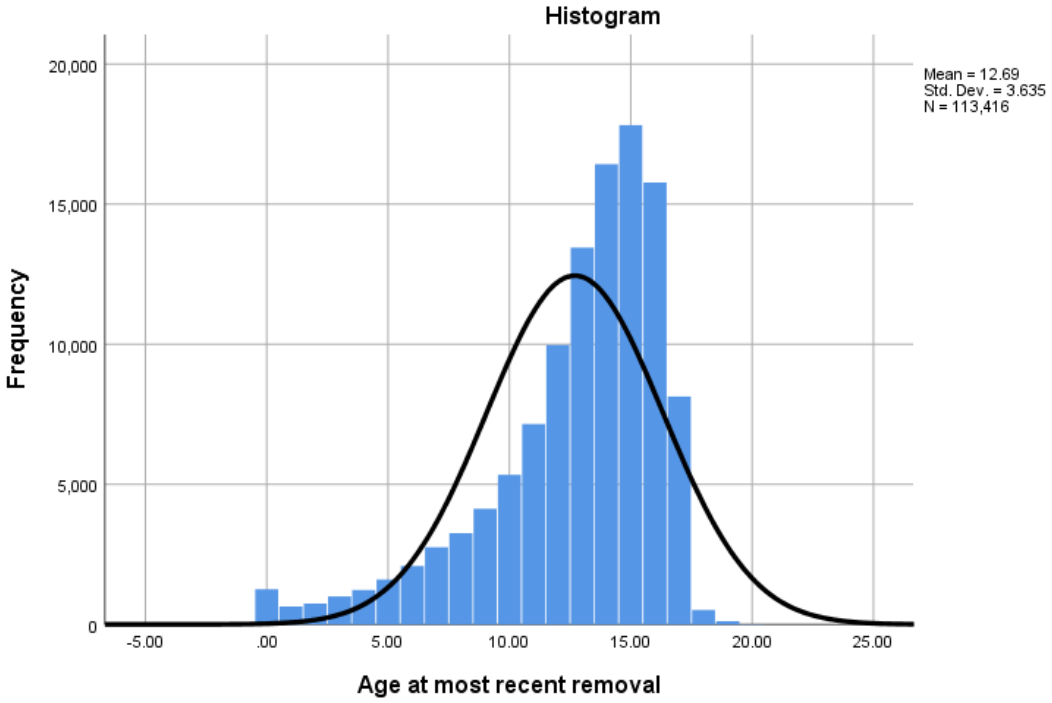


Figure XX: Histogram for age distribution




Histogram
Mean = 12.69
Std. Dev. = 3.635
N = 113,416
Frequency
20,000
15,000
10,000
5,000
0
-5.00
.00
5.00
10.00
15.00
20.00
25.00
Age at most recent removal