

ASSESSING SERVICE NEEDS FOR FOSTER CHILDREN AUTOMATICALLY ENROLLED
INTO BEHAVIORAL HEALTH SERVICES AT TIME OF REMOVAL

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ABSTRACT

The present study had an overarching objective of seeking information to better understand the service needs of children entering foster care who are universally enrolled into behavioral health services at the time of their home removal. The first specific aim was to examine how various case attributes (i.e., aspects of a child's background, personal and familial characteristics, and CPS involvement) related to behavioral health needs at entry, represented by global functioning ratings and service intensity scores. A second specific aim was to explore the existence of natural groupings of foster youth to examine if meaningful groupings occur in relation to demographic and risk and factors. Finally, this study sought to evaluate service needs of subgroups of foster children who are typically under-referred for services. Data were collected from records of 327 school-age youth who were automatically enrolled into treatment from one community-based outpatient behavioral health provider at the time of home removal.

The results of this study showed that the average school-age child entering foster care is performing in the at-risk range of global functioning (mean CGAS score of 69.23) and requires at least short-term behavioral health intervention services and/or recovery monitoring (mean CASII Composite Score of 13.1). With respect to severity of impaired functioning, the results indicated that racial background, medical history, speech problems, school grade level (e.g., <1 year, K-3,...9-12), psychological stability, and reasons for removal significantly contributed to scores of global functioning. With

regard to the intensity of service needs, the findings suggested gender, historical involvement with child welfare services, foster placement, simultaneous removal of all children, history of sexualized behaviors, and global functioning predicted level of care composite scores. Subgroups of foster youth that are typically under-referred and/or under-utilize services (i.e., preschool age children, children who did not experience physical or sexual abuse, and ethnic minorities) generally did not differ in terms of functionality or service intensity ratings from their counterpart groups; the only exception being that Caucasian/Non-Hispanic youth demonstrated lower average ratings on global functioning than children who identify with other racial backgrounds. The data showed inadequate fit for examining latent classes among youth entering foster care.

CHAPTER 1: INTRODUCTION

This chapter covers a general description of American youth in foster care and research findings that pertain to multidimensional functioning of these youth. The introduction reviews current gaps within the literature that pertain to mental health assessments for children placed in out-of-home care and methodological issues that have impeded research on service planning among foster youth. This chapter concludes with the purpose of the study, research questions with related hypotheses, and definitions of relevant terms.

Foster Care Children in the United States

Of the 3.8 million reports of child maltreatment received by Child Protective Services (CPS) in the 2012 fiscal year, the National Child Abuse and Neglect Data System (NCANDS; United States Department of Health and Human Services, 2013) reported 686,000 unique victims. This equates to nearly one-fifth of investigations or assessments found at least one child to be a victim, tied with the following dispositions: 17.7% substantiated, 0.9% indicted, and 0.5% alternative response victim (meaning that allegations were founded outside of an investigation). Still, researchers have argued that the reports of the NCANDS drastically underestimate the national prevalence of child maltreatment cases (Hussey, Chang, & Kitch, 2006) and the full burden of victimization that accompanies a history of maltreatment (Turner, Finkelhor, & Ormrod, 2010). In a recent national sample of children and adolescents, Finkelhor, Ormrod, Turner, and Hamby (2009) estimated the national rate to be one in ten

children (10.2%) who have experienced some form of child maltreatment.

Although there is a high prevalence of youth experiencing maltreatment in the U.S., only a subset of children with substantiated maltreated cases are removed from their residence and placed into foster care. Foster care can include any out-of-home placement, such as living with relatives, with a foster family, at a shelter, or in congregate care. According to the most recent report of the Adoption and Foster Care Analysis and Reporting System (AFCARS; 2014a), over 402,000 children were in foster care at a single point in time. Although an examination of foster children served throughout the fiscal year revealed appreciably higher numbers given the 255,000 children who entered and 238,000 children who exited during 2013. Therefore, a more accurate estimate of children served during that fiscal year is 641,000 (AFCARS, 2014b).

A Population “At Risk”

Researchers have demonstrated that there are often negative cognitive, neurological, and psychological effects of maltreatment present among many cases of children within foster care (Cook-Cottone, 2004; Davis, Moss, Nogin, & Webb, 2015; Gilbert et al., 2009; Lowenthal, 1998; McCrae, 2009; Pynoos, Steinberg, & Piacentini, 1999; Wulczyn, Smithgall, & Chen, 2009). While media portrayals of child maltreatment have typically focused on the physical nature of the abuse or neglect, such as bruises, burns, malnourishment, and head traumas, the literature has shown that the emotional detriments of abuse and neglect may result in the most damaging and long-term effects on the child (Toth & Cicchetti, 2004). Therefore, when

conceptualizing this pervasive societal problem, it is important to understand that the impact of maltreatment carries with a child across development and potentially into adulthood (Cicchetti, 2013; Toth & Cicchetti, 2004; Viesel & Davis, 2015). Racusin and colleagues (2005) stated that placement in foster care is both the consequence of early trauma and the preface to future adversity.

Given this longitudinal understanding of the effects of maltreatment and out-of-home placement, children in foster care are “at risk” for problems across domains of functioning, even once they are removed from their unsafe or inadequate home environment. It has been well documented that the range and difficulty of problems within the foster care population includes a higher prevalence of acute and long-term psycho-socio-emotional difficulties (Craven & Lee, 2010), increased likelihood for cumulative stress and a variety of psychiatric disorders (Cicchetti, 2013; Garland, Landsverk, Hough, & Ellis-MacLeod, 1996; Little, Akin-Little, & Somerville, 2011), and higher rates of developmental problems (Becker, Jordan, & Larsen, 2006; Fantuzzo, McWayne, & Bulotsky, 2003; McKellar, 2004; Pynoos et al., 1999; Webster & Hackett, 2007). Researchers have also demonstrated increased rates of medical conditions (e.g., chronic illnesses and chronic pain conditions) and special education services among foster care populations compared to national statistics (Altshuler & Poertner, 2003; Becker et al., 2006; Gustavsson & MacEachron, 2012; Kendall-Tackett, 2002; McKellar, 2004; Pears, Heywood, Kim, & Fisher, 2011; Scherr, 2007; Toth & Cicchetti, 2004; Stone & Zibulsky, 2015; Watson & Kabler, 2012). These additional risk factors arise

from their family of origin and home environment, as well as the disruption that comes from placement in out-of-home care.

As foster care enrollment rates increase, child welfare agencies have struggled with their ability to respond in an efficient and immediate manner (Mathiesen, Cash, Johnson, Smith, & Graham, 2006). To facilitate appropriate service delivery, researchers and child advocates have called for universal screening. Burns and colleagues (2004) urged child welfare agencies to prioritize routine mental health screening and immediate access to mental health professionals for further assessment and intervention. The American Academy of Pediatrics, Committee on Early Childhood, Adoption, and Dependent Care (2002) stated that all children in foster care need initial screenings and comprehensive assessments that include an evaluation of their mental health status. These committee members further insisted that the results of such assessments be included in court-approved social service plans and linked to the provision of care.

However, the enrollment processes in many regional areas do not include universal mental health screening for children upon removal by CPS. The determinations of service need and intensity for most foster youth are based on caseworker judgments that are founded upon initial assessments during the enrollment process. Therefore, individualized and comprehensive psychological care is typically only offered to children who have been identified with psychological problems, at enrollment, to the extent at which a referral for a mental health assessment is deemed

warranted. The problem with such a reactive system of care is that this creates a gap between those who need services and those who receive referrals. In other words, the prevalence of mental health risk factors and psychological issues in this population of youth has been repeatedly established, yet evaluations are delayed and usually only given to those who demonstrate overt service need at a level that necessitates a referral by guardians or agency workers. To add to this inattention of service needs for countless foster youth, many child welfare employees have minimal experience in assessing children's mental health needs and limited time for making referrals (Burns et al., 2004).

Gaps in Current Literature

The complications in service referral, planning, and delivery has been thoroughly examined in the literature (e.g., James, Landsverk, Slymen, & Leslie, 2004; Leslie et al., 2005; Leslie, Hurlburt, Landsverk, Barth, & Slymen, 2004; Leslie et al., 2000; Racusin, Maerlender, Sengupta, Isquith, & Straus, 2005; Ringeisen, Casanueva, Cross, & Urato, 2009; Simms, Dubowitz, & Szilagyi, 2000; Zima, Bussing, Yang, & Belin, 2000). Since it is well understood that foster care youth require a heightened level of mental health services, scholars have recently indicated the need for research examining service planning, usage, and outcomes (e.g., Arata, Langhinrichsen-Rohling, Bowers, & O'Brien, 2007; Burns et al., 2004; Landsverk, Garland, & Leslie, 2002; Taussig, 2002). In particular, there is a need for research that examines how family attributes and background characteristics relate to identified mental health needs or

engagement in services (Garland, Landsverk, & Lau, 2003). However, literature that has examined service need among clinical samples have been limited to youth whose problems have been identified and who are both able and willing to seek mental health services. Utilizing populations of foster youth who voluntarily engage in services is problematic given that the usual recipients of referrals are youth who outwardly exhibit severe manifestations (Garland et al., 1996). Therefore, outcomes on the functioning and service needs of foster care youth appear biased, especially given the underrepresentation of youth who have more internally expressed symptomatology. There are also certain subgroups of foster care children who tend to be under-referred and/or underutilize services, including those who have primarily experienced more passive types of maltreatment (i.e., neglect or emotional abuse; Burns et al., 2004; Garland et al., 1996), are of preschool age (Burns et al., 2004), and identify as an ethnic minority (Bui & Takeuchi, 1992; Garland & Besinger, 1997; Garland et al., 2003).

There have been some studies that utilized child welfare data systems and assessments to examine need. However, a survey by Leslie et al. (2003) found that 94% of child welfare agencies assessed for physical problems, while considerably fewer screened for mental health and developmental concerns (47.8% and 57.8%, respectively). Therefore, even among studies that have utilized child welfare agency intake records rather than evaluations from mental health service providers, many sources still do not incorporate comprehensive screening assessments or psychological evaluations. Within the literature, there has yet to be an examination of clinical need

among a sample of foster children who have been universally assessed and automatically enrolled in mental or behavioral health services upon removal. For that reason, an inclusive view of both the assessment of psychological functioning and treatment planning among foster youth entering care is lacking. In this regard, Craven and Lee (2010) recently highlighted the insufficient amount of literature and empirical investigations of how the risks associated with home removal can be moderated during the transition into care.

Purposes of the Present Study

As indicated, researchers have established a higher prevalence of need for mental and behavioral health services by foster youth (compared to their non-foster peers). However, the available literature has not included research on the initial functioning and assessment outcomes of youth who have been provided with immediate services as part of routine care. Such information would provide a more comprehensive view of the population and a better-informed view of service needs. Therefore, as a overarching objective, this study attempted to offer insight into the evaluation and treatment planning outcomes of children who are universally enrolled into behavioral health services at the time of their home removal. In addition, specific objectives were proposed. First, the current study aimed to examine how various case attributes (i.e., aspects of a child's background, personal and familial characteristics, and CPS involvement) relate to behavioral health needs at entry, represented by global functioning ratings and service intensity scores. This study also sought to explore

natural groupings of foster youth to examine if meaningful groupings exist in relation to demographic and risk factors. Finally, this study sought to evaluate service needs of subgroups of under-referred for services. Various factors were analyzed in the context of maltreatment attributes, child characteristics, family characteristics, and child welfare involvement. (See Appendix B for a review of collected variable domains.)

Research Questions & Hypotheses

The following research questions were proposed:

- 1) How do baseline case characteristics (child and family demographics, child characteristics, parent characteristics, and child maltreatment experiences) relate to global functioning scores at intake?

Hypotheses. The following factors will be predictive of global functioning at time of removal: Age of child (+), race/ethnicity, gender, number of medical conditions (-), number of caretakers (+), SES classification (+), number of parental risk factors (-), number of psychosocial problem areas and environmental stressors (-), number of previous CPS referrals (-), number of maltreatment subtypes experienced (-), history of developmental concern (-), school enrollment status (+), and special education status (-). (See Appendix C for an overview of hypothesized variables.)

- 2) How do baseline case characteristics (child and family demographics, child characteristics, parent characteristics, and child maltreatment experiences) relate to initial composite service intensity scores?

Hypotheses. The following factors will be predictive of the estimated level of service intensity: age (+), race/ethnicity, gender, child substance abuse (+), number of substances used (+), history of suicidal ideation or attempt (+), number of psychosocial problem areas and environmental stressors (+), number of caretakers (-), number of previous CPS referrals (+), number of medical conditions (+), special education status (+), active maltreatment (physical or sexual abuse) experience (+), and CGAS score (-). (See Appendix D for an overview of hypothesized variables.)

- 3) a. Can distinct classes of youth entering foster care be identified based on observed dimensions of clinical assessment outcomes and maltreatment history?
- b. If there are latent classes among the sample, do resulting classifications correspond to substantive differences on specific dimensions of risk within service planning?

Hypotheses. These research questions are exploratory as there has not been previous research in the area of clustering youth based on intake assessments; however, theoretical group memberships have been examined in light of service use and mental health problems, particularly dependent upon maltreatment subtype(s). Therefore, it was hypothesized that group memberships do exist and that such groups would have distinguishable patterns of service risks.

The above research questions were examined through quantitative and

explorative data analyses; information was gathered through retrospective review of behavioral health records and legal reports of foster care youth. This information was obtained via investigation of eligible records from a local community behavioral health service agency. In accordance with their Regional Behavioral Health Authority, the sponsoring agency employs immediate response teams to evaluate youth who are removed from their homes as well as routinely enrolls all children referred by CPS into behavioral health services. Intake assessments and documentation from the community agency, CPS, and family judicial services were examined and coded to identify the child and family characteristics, circumstances surrounding the child welfare investigation, clinical diagnostic profile, and estimation of service intensity needed.

The fundamental intent of this study was to contribution an essential portion to the literature by providing an examination of service need (i.e., estimations of functionality and required service intensity at the time of home removal) that was not limited to youth who are referred for behavioral health services. This research also presented the potential to fill in gaps in the field, such as determining significant predictors of poor functioning and high risk among children entering care and evaluating services needs of foster children who are typically under-referred for services.

Definition of Terms

Various relevant terms are used throughout the research paper. Based on the

literature, the main terms are defined below:

Active Maltreatment – any type of abuse that involved direct physical contact with a child (e.g., physical abuse and sexual abuse) or requires the child to engage in activities that is deemed by child welfare authorities to be unsafe or abuse (i.e., other-classified active maltreatment). A child may experience both active and passive maltreatment.

Behavioral health – mental health and/or substance abuse services which provided through managed care; separated from physical health services; the umbrella of behavioral health may include services such as case management, individual counseling, family therapy, group therapy or group workshops, family support services, medication management, social work, and substance abuse programs.

Caregiver – an adult who has legal guardianship of a child, a pseudo-guardian (e.g., step-parent), or a person whom the legal guardian has left the child in temporary custody.

Caretaker - [referred to as synonymously with *caregiver* definition.]

Child Maltreatment – maltreatment that includes the abuse and/or neglect of a child, that minimally includes “Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.” (The Federal Child Abuse Prevention and Treatment Act; CAPTA, 42 U.S.C.A. §5106g, as amended by the CAPTA Reauthorization Act of 2010)

Child Protective Services (CPS) – CPS is a division within State social services that is mandated by law to conduct initial investigations of reports of child maltreatment.

Developmental Stages – markers of childhood development that include the following categories: early childhood (ages 4 to 5 years), middle childhood (ages 6 to 8 years), preadolescence (ages 9 to 12 years), and adolescence (ages 13 to 16 years).

Direct Abuse – any type of abuse (physical, sexual, emotional, or other-specified abuse) that is directed at the identified child in record. A child may experience direct abuse and indirect maltreatment, as well as various forms of neglect.

Emotional Abuse – deprivation of an environment that supports a child emotionally or intellectually (e.g., verbally or physically rejecting a child, verbally demeaning a child, or intimidating a child with threats of physical harm or punishment); also termed *psychological abuse* or *verbal abuse*.

Episode of Care – this is the time period from a child’s enrollment into behavioral health services (intake date) and their discharge from behavioral health service (closure date).

Failure to Provide – a subtype of physical neglect that involves the caregiver’s failure to provide minimum care in meeting a child’s needs (ensuring adequate food, health care, shelter, clothing, and hygiene; Barnett, Manly, & Cicchetti, 1993).

Foster Child – a person under the age of 18 years, placed by a local child welfare agency in a household to receive parental care (United States Department of Commerce, 2006).

Foster Care – the term used for the temporary out-of-home placement of a child who has become a ward of the State; a foster home is a provisional living arrangement for a foster child in a household occupied by non-relatives.

Group Home – a foster care placement type that includes 24-hour child care for a group of five to ten children, with one staff person supervising children per every five children in the home.

Indirect Maltreatment – any type of abuse or neglect that is not directed at the identified child in record; this includes observation or knowledge of maltreatment that solely targets another child in the home (e.g., a sibling) as well as maltreatment that is does not target children, but exposes children in the home to an unsafe environment (e.g., domestic violence among caretakers and parental substance use). A child may experience direct abuse and indirect maltreatment, as well as various forms of neglect.

Kinship Care – provisional living arrangement for a foster child in a household occupied by relative; also referred to as *relative foster care* or *relative placement*.

Lack of Supervision – a subtype of physical neglect that includes a caregiver's failure to ensure the safety of a child. This would include failure to guarantee the child is engaging in safe activities (supervision), playing in a safe area (environment), provided with adequate care in caregiver's absence (substitute care), or ensuring a child with a history or harmful, impulsive, or immature behavior receives the appropriate intensity of supervision (Barnett et al., 1993).

Mental Health – [referred to as synonymously with behavioral health definition.]

Negative Presentation – provider observation of a child that includes any of the following presentation characteristics during the interview of the child: listless, disinterested, anxious, fearful, angry, labile, fussy, shocked, sad, suicidal, or homicidal.

Neglect – physical neglect by caretaker; negligent behavior by the caregiver(s) regarding a child’s mental or physical health care, nutrition, hygiene, household cleanliness or safety, and supervision or arrangement for child care.

Out-of-home placement – any time a child is removed from their living environment, they are considered to be in out-of-home placement; this may include placement within a foster home, relative’s home, group home, shelter, or hospital.

Passive Maltreatment – any type of abuse or neglect that does not involve physical contact with a child or requires physical actions of the child that are deemed by child welfare authorities to be unsafe or abuse; passive maltreatment includes emotional abuse and neglect types. A child may experience both passive and active maltreatment).

Perceived Insight at the Time of Removal – observation of the child’s level of understanding and awareness of the removal and related circumstances; insight is categorized as good, fair, poor, or other (variable/partial/intermittent).

Physical Abuse – excessive or inappropriate physical force used on a child.

Polyvictimization – this term refers to children who have experienced two or more different kinds of maltreatment; also referred to as *multi-victimization*.

Risk – any situation that exposes a child to danger or factor that increases the

likelihood of negative outcomes.

Resiliency – the ability to adapt positively and master normative developmental tasks in spite of significant adversity (Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007; Masten, Cutuli, Herbers, & Reed, 2009)

School Enrollment Status – active enrollment in an educational institution; unenrollment does not include inactive status solely due to a break in school session, such as during summer break.

Sexual Abuse – molestation, sexual activity, sexual coercion, or undesired sexual behavior forced upon a child.

Urgent Response – the emergent response of child welfare agencies to reports of alleged child maltreatment. Service entry through CPS Urgent Response indicates that the referral for services was prompted by the home removal of the child via child welfare services.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews relevant literature in the fields of foster care and child maltreatment. Theoretical underpinnings of resiliency theory, developmental psychopathology, and attachment theory are discussed, as these theories are of interest in the functioning, service need, and prospective planning of child who enter foster care. The national population of foster care youth is described in detail and an overview of investigation and assessment procedures for CPS investigations is provided. Furthermore, child maltreatment, issues surrounding re-entry and re-victimization later in life, and general economic costs to society are addressed. Next, the negative outcomes observed among foster care youth across domains of functioning (i.e., psychological, physical, developmental, and academic functioning) are reviewed, as well as population-specific risk and resiliency factors. Finally, this chapter concludes with recent appeals for universal screening measures upon home removal and a summary of the presented literature.

Theoretical Inferences: Developmental Psychopathology & Attachment

Developmental psychopathology. Although resiliency theory highlights the adaptive aspects in the face of adversity, the developmental psychopathology perspective focuses on abnormal functioning through the context of antecedents and consequences, as well as its relation to normative development (Cicchetti, 1990). The tenets of this theory surround the view that development is naturally an age-related and hierarchical progression (Cicchetti, 1989) and a holistic view of development

requires conceptualization across domains, such as cognitive, social, emotional, and biological processes (Cicchetti, 1984). Disruptions to development at early stages are therefore likely to have consequences on later age-appropriate development, possibly continuing into adulthood (Cicchetti, 1989; Ireland, Smith, & Thornberry, 2002).

Particularly when there are persistent and substantial disturbances within the parent-child-environment operations, as is often the case with child maltreatment, the child is more likely to experience the harmful consequences of the “continuum of caretaking causality” (Sameroff & Chandler, 1975). In other words, the negative consequences on a child’s development are due to disturbances within bidirectional transactions of nature and nurture. Additionally, within this perspective, maltreatment is viewed as a likely instigator for the unsuccessful resolution of major stage-related aspects of development (Cicchetti, 2004).

Attachment. Principles of attachment theory are also relevant to the population of foster youth and compliment aspects of resiliency theory and developmental psychopathology. Within attachment theory, pre-foster placement experiences play a crucial role in determining how children will mentally handle the transition into foster care (Simms et al., 2000). Bowlby’s theory of attachment contended that the relationships formed between child and caretaker, particularly during the child’s early development, significantly impact the personality traits of that child (Bowlby & King, 2004). Bowlby further speculated that deprivation of sufficient maternal care will likely cause a negative impact on a child’s physical, cognitive, psychological, and social

development (Holmes, 1993). Commonly, the experience of chronic maltreatment results in a child's insecurity, ambivalence, and/or avoidance of attachment with a caregiver (Egeland & Sroufe, 1981). Applying this notion to foster care placement, the deprivation of a secure and loving attachment among biological parents may prevent healthy relationships to be formed with out-of-home caregivers (Simms et al., 2000).

Description of the Population

A considerable number of youth are placed in foster care by child welfare agencies once CPS officials have determined that the caretaker(s) are unable or unwilling to adequately care for the child (Vandivere, Chalk, & Moore, 2003). Children in foster care can enter care for assorted reasons and reside in a variety out-of-home placements (National Survey of Child and Adolescent Well-Being, 2011). A summary of population-specific factors (i.e., national demographics, reasons for entry, duration of care, and placement considerations) are reviewed below. These factors are important to understand the individual, familial, environmental, and welfare system factors that influence the assessment for behavioral health service needs upon entry into foster care.

Demographics. While the reported ethnic breakdown of foster care children in the United States has varied depending on the various samples used by data collecting agencies, AFCARS (2014a) data collectors reported the following breakdown of foster care youth during September of 2013: 42% White; 24% Black; 22% Hispanic; 2% Alaska Native/American Indian; 1% Asian; <1% Pacific Islander; 6% Multiethnic; and 3%

Unknown. National gender statistics were about equal, with 52% males and 48% females in foster care (AFCARS, 2014). The mean age of foster children in care was 8.9 years; the mean age of entry into foster care was 7.5 years (AFCARS, 2014).

Reason for entry. CPS, a subdivision of child welfare agencies, is responsible for carrying out investigations of suspected abuse or neglect to determine if charges of maltreatment are substantiated and what agency efforts are required to prevent future maltreatment (Drake & Jonson-Reid, 2000). Consequently, children are typically enrolled into foster care when a CPS investigator removes them from their families due to maltreatment by the parents or neglect by parents who struggle with conditions such as poverty, homelessness, and substance abuse (McGuinness & Schneider, 2007; O'Hare, 2008). Additionally, youth may be removed and placed into foster care when the child is observed to have severe behavioral problems and/or a variety of parental concerns exist (e.g., abandonment, serious physical or emotional illness, incarceration, substance abuse issues, and death; American Academy of Child and Adolescent Psychiatry, 2005).

Length of stay. Children stay in foster care as long as it takes to find permanent placement (Nowak-Fabrykowski & Piver, 2008). As of September of 2013, children waiting for placement had been staying in continuous foster care for an average of 20.0 months (AFCARS, 2014); however the median length of stay in care was 13.5 months. In viewing the extremes within Time in Care, 26% of children were in foster care for less than six months, and 27% of children were in care for over three years. At the

snapshot of children in foster care during September 2013, a third (33.0%) of foster children who have were waiting to be adopted (24%), placed under long-term foster care (5%), or placed under guardianship (4%). These case plan goals signify that the children were no longer being considered for family reunification and the child was not yet eligible for emancipation (AFCARS, 2014). Only about half of the children (53%; AFCARS 2014) had a standing case plan goal of reunification with parent(s) or primary caretaker(s). While the distribution of children in waiting is generally even over the ages of 1-17, adoption rates steadily decline as age increases. Over half of the children adopted through a public agency are 5 years or younger; meanwhile, only a quarter of children who are 9 years and older are adopted (AFCARS, 2014). Older children have lower chances of adoption and a therefore a greater chance of staying in foster care long term.

Placement. Foster children might be placed with unrelated foster parents, with relatives, with families who plan to adopt them, in residential centers, or in group homes (Emerson & Lovitt, 2003). Additionally, children may be initially placed in temporary housing (i.e., shelter care) when an immediate placement cannot be established. There are four types of foster care: foster care (non-relative placement), kinship care (placement with a relative), therapeutic foster care (general foster care that includes therapeutic services), and residential foster care (congregate housing; Curtis, Dale, & Kendall, 1999). The majority of foster children are placed in a non-relative home (47%); there are approximately 4% placed in pre-adoptive homes, 5% in

trial home visits (visits back to the home of birth parent(s) to see if reunification is possible), 14% in a group home or institution, and 28% in kinship care (AFCARS, 2014).

Removal from a biological parent largely impacts a youth's psychological stability; many youth in foster care experience a variety of distress symptoms, including confusion, anger, alienation, ambivalence, and low self-esteem (McKellar, 2004). Further, when children are placed in non-relative foster care, they are removed from their home, their families, and everything residential that is familiar to them (Williams, Fanolis, & Schames, 2001). Placement within a relative's home is considered to help youth adjust to the foster care system (Shin, 2003). Accordingly, kinship placements are the preferred option when children cannot remain under the care of a parent (Vanschoonlandt et al., 2012)

Youth in kinship care are less likely to have mental health problems, behavioral problems, and placement disruptions (Dubowitz & Sawyer, 1994; Iglehart, 1994; Shore, Sim, Le Prohn, & Keller, 2002; Vanschoonlandt et al., 2012). Also, when analyzing placement experiences, adolescents in kinship foster care had significantly higher reading, writing, and math scores on standardized achievement tests than those in non-relative foster care (Scott, Perfect, & Sorensen, 2010; Shin, 2003). Shin (2003) posited that such a relationship between improved academics and kinship placement may be due to potential that placement with extended relatives helps youth adjust to their foster care status by maintaining family ties and reducing the trauma of removal. On the other hand, Vanschoonlandt and colleagues (2012) found that children in non-

kinship placements demonstrated better contact with parents and aspects of attitude toward parents than children in foster care. Vanschoonlandt et al. (2012) speculated that pre-existing interaction patterns among relatives lead to parent-caretaker boundaries, roles, and responsibilities that are not as well defined and more difficult to negotiate, which subsequently and negatively impact contact with and attitude towards biological parents. In addition, Vanschoonlandt and colleagues (2012) claimed that the number of previous out-of-home placements was more predictive of behavioral problems than type of placement (kinship versus non-kinship care).

Sibling togetherness. Siblings are not always removed at the same time. There are a multitude of reasons why a child may not enter at concurrently with their siblings. Wulczyn and Zimmerman (2005) found that simultaneous entry becomes less likely as sibling group size increases and largely reflect reasons due to family dynamics rather than service issues. Examples of reasons for individual removal include when a child is the sole victim of sexual abuse, cases of sibling-perpetrated abuse, when the child has perpetrated harm against their siblings exists, and situations in which safety concern stems from the triggering of traumatic memories during sibling contact (Herrick & Piccus, 2005; Tarren-Sweeney & Hazell, 2005). In other situations, a child's problematic behavior can directly or indirectly contribute to their entry into foster care and/or a parent relinquishes caretaking due to an inability to cope with a child's behavior (Tarren-Sweeney & Hazell, 2005). Tarren-Sweeney and Hazell (2005) have identified various parent-child or child-sibling relational factors that can contribute to

significant hostility within relationships that sometimes can prompt a child's entry into care. These factors include the biological relationship status of the child, the formation of a bond with a child, and child-specific factors such as the child's behavior, disability status, and gender (Tarren-Sweeney & Hazell, 2005).

Even when removed concurrently, sibling sets may or may not be placed together in a foster care setting. Depp (1983) observed caseworker justification for separating siblings post removal included reasons such as varying needs among individuals in a sibling set, concurrent placement potentially undermining placement stability, and problematic sibling relations perceived to produce or have the potential of producing undesirable dynamics in a home setting. From the child's perspective, Wulczyn and Zimmerman (2005) noted that when interviewing children in foster care, many youth voiced a desire to be placed with their siblings and, if separated, wanted frequent visitation maintained with their siblings.

Impact of sibling separation. Over three decades ago, Lamb and Sutton-Smith (1982) demonstrated that children who have been maltreated by their caregivers often have strong ties to their siblings. Further, recent literature has suggested that a sibling's presence can promote a child's adaptation within stressful situations and have highlighted the supportive role of sibling relationships throughout development (Hegar, 2005; Herrick & Piccus, 2005; Kernan, 2005). Subsequently, separation from one's siblings is thought to deprive children of these supportive relationships and is

associated with negative outcomes for children in foster care (Grigsby, 1994; Hegar, 2005; Leathers, 2005; Staff & Fein, 1992).

Sibling-related factors that have been found to contribute to negative outcomes include larger sibling groups, greater disparity in age among siblings, and siblings who do not enter simultaneously (Tarren-Sweeney & Hazell, 2005). In specific regard to children who were singly removed from the home while their sibling(s) remained, Boer, Westenberg, and van Ooyeen-Houben (1995) found that the individually removed youth were more likely to be removed for child-related behavior and to exhibit greater problematic behaviors once in care compared to youth whose siblings were concurrently removed.

Investigation and Assessment Procedures

Assessment is considered the foundation of effective practice with CPS-involved families (Child Welfare Information Gateway, 2011a). When considering enrollment into foster care services, each case begins with an investigation by a CPS agency that is initiated by a report of suspected child maltreatment or insufficient caretaking. Once maltreatment has been substantiated, more detailed assessments regarding the child's safety, permanency, and well-being are conducted. The subsequent course of action by the child welfare agency will depend on state policy, the severity level of abuse and/or neglect, an assessment of the child's immediate safety, the risk of maltreatment continuing or reoccurring, available family resources, and court interference (Child Welfare Information Gateway, 2011b). Therefore, having a thorough family evaluation

to understand the nature of the maltreatment and a risk assessment of the child's environment is crucial in determining the course of action that CPS will take and how services will progress. Furthermore, the accurate assessment of ongoing family-related risk factors once the child is removed is crucial for developing individualized prevention and intervention approaches for post-care (Benedict, Zuravin, Somerfield, & Brandt, 1996). Overall, assessment is viewed as one of the most critical contributors to improving outcomes of safety, permanency, and well-being among foster care youth (Cohen, Hornsby, & Priester, 2005).

It is unclear whether CPS investigators and caseworkers view themselves as assessors of mental health needs beyond their role as evaluators of safety and child well-being (Burns et al., 2004). Burns and colleagues (2004) speculated that, with the often overwhelming caseloads, CPS caseworkers have limited time to evaluate the need for mental health intervention services and/or make the necessary referrals, particularly since investigations prioritize the child's physical safety rather than psychological functioning. Moreover, it is generally understood that CPS's sole purpose is to protect children from harm, with only some states including mandates to assist children in effectively dealing with and overcoming the experience of maltreatment (Drake & Jonson-Reid, 2000). Still, many CPS agencies across the nation collaborate with various community professionals, such as health care providers, mental health professionals, educational staff members, legal system personnel, and foster care providers (DePanfilis & Salus, 2003). With the collaborative approach, child

victims are often in contact with multiple professionals who aim to provide effective services in the aftermath of home removal. Subsequently, the CPS caseworker is typically the lead agency provider (DePanfilis & Salus, 2003), yet a variety of personnel involved with the welfare case may conduct assessments regarding the safety, strengths, culture, functioning, education, etc., of the foster youth. However, Burns et al. (2004) argued that there remains a shortage of professionals who are well-trained in assessing the need for psychological intervention or existence of mental health issues. The combined shortage of comprehensive assessments and trained personnel highlights the need for research that utilizes universal and multidimensional assessments of children entering foster care by providers who are specifically trained in such an assessment. Examining such data, as outlined in this study, could provide an evaluation of widespread mental health needs and potentially draw attention to areas of assessment that are vital for child welfare evaluators to be adequately trained in.

Types, Patterns, and Costs of Child Maltreatment

As mentioned in chapter 1, child maltreatment and foster care populations heavily overlap in terms of the children and adolescents involved. As the proposed study will be examining individual and family background characteristics in relation to the youth's functioning, service needs, and general profiling upon entry into foster care, the experiences of maltreatment are a central component to this research.

Recently, researchers in the field have underscored the need to examine maltreatment as a multidimensional phenomenon (e.g., Arata et al., 2007; Pears, Kim,

& Fisher, 2008). Additionally, scholars have promoted research that includes parental risk factors, psychosocial stressors, socioeconomic status (SES), etc. in addition to maltreatment histories (e.g., Burns et al., 2004; Jaffee et al., 2007). Therefore, understanding the coexisting nature and interplay of maltreatment subtypes and chronicity of victimization pre- and post- foster care, with incorporation of familial and environmental influences, is imperative to build rationale for the multidimensional view of the proposed study. Furthermore, the section reviews the economical impact of foster care to draw attention to the effect of child maltreatment on society and the probable cost-effectiveness of early intervention for this population.

Maltreatment experiences among foster youth. Prior to their home removal, foster care children have often experienced traumatic occurrences such as abuse, neglect, domestic violence, and parental substance abuse (Chernoff, Combs-Orme, Risley-Curtiss, & Heisler, 1994; Oswald, Heil, & Goldbeck, 2010). These experiences can be acute or chronic, although chronic maltreatment has been reported as the most common background characteristic of youth entering foster care (Oswald et al., 2010).

Among the literature and within state policies, there are recognized domains of maltreatment. The four most referred to in the literature, and also declared as the central focus of CPS investigations, are physical abuse, sexual abuse, emotional abuse, and neglect (United States Department of Health & Human Services, 2003). However, some states recognize additional types of maltreatment, including specific mention of abandonment, educational neglect, medical neglect, and parental substance-abuse

(United States Department of Health & Human Services, 2003). A widely recognized method in discerning and describing maltreatment subtypes is the Maltreatment Classification System (MCS; Barnett et al., 1993), which specifies identification guidelines for physical abuse, sexual abuse, physical neglect (via failure to provide or lack of supervision), emotional abuse, and moral/legal/educational maltreatment. The most recent report on child maltreatment statistics (United States Department of Health and Human Services, 2013) estimated the following prevalence rates of unique victims in the U.S. (i.e., counting each maltreated child once, regardless of the number of reports that received a CPS response): 78.3% neglect, 18.3% physically abuse, 9.3% sexual abuse, 8.5% emotionally maltreated, and 10.6% with “other” types (e.g., abandonment, threatened abuse, and parental drug use).

Maltreated children are often raised in environments that includes a multitude of familial problems, such as poverty, interpersonal violence, parental psychopathology, substance abuse issues, insufficient access to health care, and residing in neighborhoods with a high incidence of crime (e.g., Appel & Holden, 1998; Edleson, 1999; Gelles, 1992; Jaffee, 2005; Lynch & Cicchetti, 1998; McKellar, 2004; Ruff, Blank, & Barnett, 1990; Sedlak & Broadhurst, 1996). In face of these stressors, resiliency for youth with maltreatment histories may depend on the cumulative stressors present within the child’s environment (Jaffee et al., 2007). However, personal defense mechanisms have been reported unrelated to a child’s competence in managing an appreciably heightened level of environmental risk factors (Sameroff,

Bartko, Baldwin, Baldwin, & Seifer, 1998). Although many children psychologically “survive” childhood trauma by adaptively integrating the traumatic experiences within their normal development, others manifest symptomology in a life-disrupting and/or educationally impairing manner (Cook-Cottone, 2004).

Polyvictimization. Polyvictimization refers to the victimization of a child across maltreatment subtypes or repeated subtype victimization by multiple perpetrators. Children who experience a single form of family violence or maltreatment frequently experience other forms, with neglect being the most common (United States Department of Health and Human Services, 2013). As a recent trend, researchers have been studying the concurrent rates of polyvictimization (Arata et al., 2007). Such research indicates polyvictimization to be common (Arata et al., 2007) and has indicated that 46% to 95% of child victims have experienced multiple subtypes of maltreatment (Lau et al., 2005; Ney, Fung, & Wickett, 1994). When examining maltreatment profiles among foster youth, Pears, Kim, and Fisher (2008) found that children in care had experienced an average of three subtypes of maltreatment, with histories of neglect (supervisory or physical) and emotional abuse present among each of the maltreatment profiles.

Given the likelihood of polyvictimization, the notion of victimization can be viewed as more of a ‘condition’ than an ‘event’ (Finkelhor, Ormrod, & Turner, 2007). Furthermore, the phenomena of polyvictimization may suggest that a greater number of persons and environments within a child’s life may be associated with

traumatization and interfere with normative developmental of coping skills (Finkelhor et al., 2007). Finkelhor and colleagues (2007) posited that after a multitude of victimizations, a child's defense mechanisms may become generalized to future interpersonal groupings. Moreover, given the co-occurrence of self-blame with victimization, child victims may have an increasingly difficult time rejecting personal affiliation with the traumas when the occurrences come from multiple sources (Mannarino & Cohen, 1996).

Within studies that address and/or measure polyvictimization, the effects of maltreatment have been shown to depend on the sample of youth, the subtypes of maltreatment experienced, and the outcome variables (see Arata et al., 2007). However, it had been indicated that children who have experienced multiple subtypes of maltreatment demonstrate greater psychopathology or symptomatology, especially those with a history of physical abuse, sexual abuse, and neglect (Arata et al., 2007; Holt, Finkelhor, & Kantor, 2007). Additionally, polyvicitimized youth have been shown to exhibit decreased academic achievement (Holt et al., 2007). In adolescent participants, the experience of polyvictimization has been indicative of increased emotional and behavioral problems, above and beyond the effects of a singular subtype of maltreatment (e.g., Bensley, Van Eenwyk, Spieker, & Schoder, 1999; Green, Russo, Navratil, & Loeber, 1999).

Re-referral to CPS. High recidivism (or reentry into foster care) for children who have been reunited with families is a major concern, particularly when considering

that these children were released to guardians who were deemed capable of providing adequate support and protection. Recidivism also indicates a serious problem against the aim of child welfare agencies to provide permanency for children within their care. Therefore, examining and reducing the recidivism of foster care children has been a priority of child welfare agencies, policy makers, mental health practitioners, and researchers over the years (Courtney, 1995). Although rates of recidivism vary significantly from 0% to 85% depending on age of the child and the time period for follow up (see Chaffin, Bard, Hecht, & Silovsky, 2011), Drake and colleagues observed that almost 50% of cases experienced a re-referral to CPS within 4.5 years (Drake, Jonson-Reid, Way & Chung, 2003; Jonson-Reid, Drake, Chung, & Way, 2003). The highest risk period of re-referral has been allocated to the six months following reunification (Connell, Bergeron, Katz, Saunders, & Tebes 2007).

Researchers have examined various contributors regarding the reoccurrence of maltreatment and the subsequent reentry into services (Jones & LaLiberte, 2010). English, Marshall, and colleagues (English et al., 1999; Marshall & English, 1999) examined the rates, characteristics, and correlates of child maltreatment to re-referral to CPS. These researchers identified a prior history of substantiated maltreatment as the largest factor associated with re-referral to child welfare agencies. Furthermore, there appeared to be a cumulative effect of prior reports in respect to increased rates of repeat allegations (Marshall & English, 1999). This accumulation of reports, particularly with decreasing time between reports, appears the strongest predictor of

chronic child welfare cases (Chaffin et al., 2011). Beyond prior reports, Courtney (1995) found the child's age at discharge, race, health condition, and the family's eligibility for financial aid and assistance to be associated with reentry into care. The following are child characteristics that have been related to increased likelihood for re-referral (Connell et al., 2007): younger children, White children (particularly for re-referrals for physical abuse or neglect), Native America children, and children with a developmental disability; researchers have not yet observed consistent rates relating gender and re-referral (Connell et al., 2007). Family characteristics that are associated with increased rates of re-entry include the presence of multiple or meaningful stressors (Connell et al., 2007) and having a family history of substance use or domestic violence issues (English et al., 1999). Additionally, the type of maltreatment has been linked to recidivism rates. Jonson-Reid and colleagues (2003) demonstrated the following rates of repeated allegations: 41% for physical abuse, 35% for sexual abuse, and 50% for neglect cases over 54 months.

Beyond the stressors associated with re-removal, re-engagement into judicial matters, and placement changes, Nelson, Saunders, and Landsman (1993) demonstrated poorer outcomes for youth reentering foster care than their singular entrance peers almost two decades ago. Their research also revealed that children who reenter foster care have frequent psychological, social, interpersonal, and financial problems (Nelson et al., 1993). However, given that multiple referrals to CPS may not result in multiple removals, researchers have more recently focused on the chronicity

of substantiated referrals to CPS rather than reentry into foster care. When observing outcomes based on the number of CPS referrals received, Graham and colleagues (2010) posited that the poorer outcomes observed in chronically maltreated children can vary due to developmental time period or combination of time periods in which the maltreatment occurred. Additionally, researchers have begun examining cross-type recidivism, or the report of different types of maltreatment over time (Jonson-Reid et al., 2003). Jonson-Reid and team members (2003) reported commonality of cross-type recidivism among re-reported cases of maltreatment, particularly for non-neglect cases to return with issues of neglect.

Lifetime revictimization. More recently, researchers have examined the phenomenon of increased risk for lifetime revictimization in samples of confirmed child maltreatment and family violence (e.g., Desai, Arias, Thompson, & Basile, 2002; Finkelhor et al., 2007; Noll, Trickett, Harris, & Putnam, 2009; Trickett, Noll, & Putnam, 2011; Widom, Czaja, & Dutton, 2008). Widom and colleagues (2008) examined categorizations of traumas and victimization and concluded that a history of childhood victimization specifically increased the risk for interpersonal violence in adulthood (e.g., sexual assault, sexual abuse, kidnapping, stalking, or having a significant other murdered), even when controlling for the documented case of childhood maltreatment that initiated investigation by a child welfare agency.

The literature has demonstrated relations between probability of revictimization and maltreatment subtypes (Arata, 2002; Widom et al., 2008). Arata (2002) reported

that approximately one-third of childhood sexual abuse victims reported repeat victimization after the initial report of abuse and that females with a history of sexual abuse were two to three times more likely to experience adult revictimization than females without history of such abuse. Widom, Czaja, and Dutton (2008) observed that groups of neglected children and children with a history of both neglect and physical abuse reported significantly higher prevalence of lifetime traumas and victimization as compared to sexual abuse only or physical abuse only groups. In examination of gender differences, the likelihood for revictimization in adulthood by any perpetrator (intimate or non-intimate) was increased regardless of gender, particularly for adults with a history of childhood physical or sexual abuse (Desai et al., 2002); however, females were found to be at greater risk of victimization by an intimate partner (Desai et al., 2002). The trend of revictimization, across genders and maltreatment subtypes, clearly supports the need for early intervention with maltreated children and their families to assist in preventing subsequent traumas (Widom et al., 2008).

Economical impact of child maltreatment. With child maltreatment being prevalent in our society, determining the economic impact of maltreatment is a substantial concern (Fang, Brown, Florence, & Mercy, 2012). The direct costs of child maltreatment were reported to be over \$33 billion dollars per year and the indirect costs are an additional \$70 billion dollars annually (Wang & Holton, 2007). Although a recent analysis of the total lifetime costs within the U.S., given the estimated 579,000 new substantiated nonfatal cases and 1,740 fatal cases of child maltreatment per year,

were appreciably higher at approximately \$124 billion (Fang et al., 2012). The latest estimate of overall economical burden was assessed at \$585 billion (Fang et al., 2012).

Fang and associates (2012) reported the costs per individual as follows:

The estimated average lifetime cost per victim of nonfatal child maltreatment is \$210,012 in 2010 dollars, including \$32,648 in childhood health care costs; \$10,530 in adult medical costs; \$144,360 in productivity losses; \$7,728 in child welfare costs; \$6,747 in criminal justice costs; and \$7,999 in special education costs. The estimated average lifetime cost per death is \$1,272,900, including \$14,100 in medical costs and \$1,258,800 in productivity losses. (p. 156)

Such profound economic impact is analogous to other recognized public health problems, such as the lifetime costs of stroke or type II diabetes mellitus per person (Fang et al., 2012). Obviously these medical conditions are distinct from child maltreatment; however, the comparable impacts indicate the weight of childhood abuse and neglect on our society (Fang et al., 2012), above and beyond the consequences of maltreatment on the child victims. Furthermore, the prevalent rates and high costs are expected to continue, which means expanding numbers of children being affected as well as an escalating cost to society (Nilsen, 2007) through greater costs related to health care, welfare, jails, and institutions. Furthermore, child maltreatment has been linked to lifelong financial consequences and generally decreased economic well-being as adults (Currie & Widom, 2010; Fang et al., 2012).

The public health concern surrounding maltreatment is significant (Fang et al., 2012; Jaffee et al., 2007) and highlights the need to focus efforts toward facilitating and supporting treatment and preventative measures at individual, family, and community levels.

When specifically assessing spending on foster care services, parallel increases are observed. Between the 1970s and 2000, the federal spending increased from \$200 million to around \$4.5 billion (United States Department of Health & Human Services, 2000). This figure has been consistent, with the federal spending allocated for Title IV-E Foster Care spending in the fiscal year 2011 being \$4.539 billion (Briceland-Betts, Sciamanna, Varner, & Ayer, 2010). Becker, Jordan, and Larsen (2006), posited the behavioral health service costs alone for foster care children to be eight times greater than their non-foster peers. Considering the effects of maltreatment typically extend across the life span (Wang & Holton, 2007), investment in social services children in foster care can be viewed as preventive measures toward escalated costs in adulthood. More specifically, providing this population of high-risk youth with appropriate services and assistance can be a highly cost-effective method for preventing social problems associated with academic failure, school dropout rates, health conditions, criminal activity, psychopathology, unemployment, poverty, and homelessness (Ayasse, 1995; Nilsen, 2007; Pecora et al., 2006; Schuyler Center for Analysis and Advocacy, 2009).

Population-Specific Risk Factors

General domains of risk. In 1972 and 1973, Kavalier and Swire reported that among foster care children in New York City, 45% had at least one chronic health condition, 70% exhibited moderate-to-severe psychological problems, 29% (of the preschool-age children) had developmental delays, and 55% (of the school-age children) displayed borderline-to-severe cognitive impairments (Kavalier & Swine, 1983). In the four decades since, a large amount of research has substantiated Kavalier and Swine's observation of foster children's widespread vulnerability to disruptions in multiple domains of functioning (e.g., Davis et al., 2015; Lee & Whiting, 2008; Leslie et al., 2003; Simms et al., 2000; Widom, 2000). Although the extent to which pre- versus post-removal environments contribute to these problems remains unclear given the difficulties in determining pre-removal functioning (Simms et al., 2000), researchers have widely demonstrated functional disturbances upon children's entrance into foster care (Arata et al., 2007; Becker et al., 2006; Burns et al., 2004; Combs-Orme, Chernoff, Kager, 1991; Oswald et al., 2009). In addition to the general observation of problems in foster youth, the American Academy of Pediatrics, Committee on Early Childhood, Adoption, and Dependent Care (2002) reported that the complexities of serious mental, physical, and developmental issues are increasingly observed in infants and toddlers who enter care.

Mental health. When children are removed from their home by CPS, there are multiple psychological traumas to consider. There is the emotional impact of the

maltreatment that led to investigation, but also the trauma of being removed from one's home (CWLA, 1999; Simms et al., 2000; Zlotnick, Tam, & Soman, 2012). Even though the child's home was deemed unsafe, a transition in placement includes multiple abrupt disruptions beyond family relations and home environment. For example, the removal can lead to detaching from one's neighborhood, school placement, peer relations, daily routines, and community at large (e.g., Clausen, Landsverk, Ganger, Chadwick, & Litronwnik, 1998). When foster children are placed in a new home, they are often devastated, confused, emotional, and overwhelmed (McKellar, 2004; Simms et al., 2000). The combination of pre-existing child, family, and community risk factors with the experience of home removal leads to an increased prevalence of psychological disorders, behavioral disruptions, and widespread need for mental health interventions among this population.

The prevalence of emotional and behavioral difficulties prior to home removal characterize these foster care youth as a high-risk population for mental health problems (Leslie et al., 2003; National Child Welfare Resource Center for Family-Centered Practice, 2003). Researchers have estimated that 35-50% of children entering foster care have significant mental and/or behavioral health problems (Burns et al., 2004; Leslie et al., 2003). Chernoff et al. (1994) reported that 15% of foster children four years or older were suspected of suicidal ideation, with 7% reporting homicidal ideation. Meanwhile, when examining serious mental illnesses, Becker, Jordan, and

Larsen (2006) demonstrated that youth in foster care were significantly more likely to carry a diagnosis of serious mental illness than their non-foster peers.

Overall, Takayama, Bergman, and Connell (1994) reported children in foster care to be sixteen times more likely to carry a clinical diagnosis. The most common mental health diagnoses among youth in foster care surround adjustment, anxiety, mood, disruptive behavior, impulse-control, and substance use (Blumberg et al., 1996; Halfon, Berkowitz, & Klee, 1992; Harman, Childs, & Kelleher, 2000; McMullen et al., 2004; Pilowsky, 1995; Racusin et al., 2005). However, child maltreatment and out-of-home placement have commonly been associated with a range of issues, including depression, post-traumatic stress, aggressiveness, delinquency and violent criminal behavior, promiscuity, substance abuse issues, difficulty with peer relations, and academic failure (e.g., Arata et al., 2007; Blumberg et al., 1996; Jaffee et al., 2007; Fang, et al., 2012; McMullen et al., 2004).

Physical health. Most children entering foster care are in poor physical health (Risley-Curtiss & Kronenfeld, 2001) and likely received insufficient routine medical treatment (Leslie et al., 2003). Studies of children and adolescents entering care have reported 60% to 92% of youth having at least one type of health problem, while 50% to 60% having multiple health abnormalities (Chemoff et al. 1994; Dubowitz et al., 1992; Hochstadt, Jaudes, Zimo, & Schachter, 1987; Takayama, Wolfe, & Coulter, 1998). The more common medical conditions observed in foster youth include problems with the upper respiratory system, skin disorders, migraines, physical underdevelopment, and

sensory problems (Altshuler & Poertner, 2003; Chernoff et al., 1994; Kendall-Tackett, 2002; Risley-Curtiss & Kroenfeld, 2001; Takayama et al., 1998). Greater occurrences of chronic medical issues (e.g., epilepsy, anemia, and diabetes) and chronic pain disorders compared to non-foster youth have also been reported (Altshuler & Poertner, 2003; Felitti, Anda, & Nordenberg, 1998; Kendall-Tackett, 2002). In addition, there are health risks associated with is the higher prevalence of sexual activity and substance abuse that has been observed among foster care adolescents (compared to non-foster care adolescents), further adding to their medical care needs (Becker et al., 2006; Child Welfare League of America, 1996; Moran, Vuchinich, & Hall, 2004; Schuyler Center for Analysis and Advocacy, 2009; Simpson, & Miller, 2002).

Development. The experiences leading up to child welfare intervention, as well as the experience of being in foster care, have been shown to alter a child's acute and long-term development (American Academy of Pediatrics, 2000; Kaplow & Widom, 2007; Lawrence, Carlson, & Egeland, 2006; Leslie et al., 2005; Toth & Cicchetti, 2004). In addition, youth with pre-existing disabilities are at increased risk for maltreatment as they tend to be victimized at higher rates than the general population (Wilczynski, Connolly, Dubard, Henderson, & McIntosh, 2015). Wilczynski and colleagues (2015) noted that this latter observation is partially explained by the elevated stress that is experienced by both the individual with a disability and their caretaker.

In general, children who have experienced maltreatment are at risk for number developmental problems, including attachment disorders, cognitive impairments,

neurobiological alterations, failure to thrive, neuroendocrine dysregulation and social and emotional disturbances (Davis et al., 2015; Shaw & Goode, 2005; Viesel, Freer, Lowell, & Castillo, 2015; Wilczynski et al., 2015; Wulczyn et al., 2009). This potential for harm is particularly alarming given that 48% of children entering foster care are under six years old (AFCARS, 2014), when their neurobiological and psychological development is the most vulnerable and malleable (Leslie et al., 2005; Ramey & Ramey, 1999; Toth & Cicchetti, 2004). However, even youth whose onset of maltreatment was later in childhood (post the age of five years) have demonstrated greater risk for the developing antisocial behavior or maladaptive coping techniques (Kaplow & Widom, 2007). Additionally, children entering care are more likely to have been raised in poor or violent environments and experienced inadequate parenting (Leslie et al., 2005), which can affect developmental outcomes. Reported rates of foster children exhibiting a developmental disability or delay range from 20 to 68% (Chernoff et al., 1994; Leslie et al., 2003; National Child Welfare Resource Center for Family-Centered Practice, 2003; Ringeisen et al., 2009; Stahmer et al., 2005), compared to 10% of the general population (First & Palfrey, 1994). In a sample of preschool foster care children, Stahmer and colleagues (2005) reported 50% exhibiting serious developmental or behavioral risk and almost 20% demonstrating problems in more than one developmental domain. Prevalent developmental problems observed in foster care populations include prematurity, speech, hearing, and vision impairments, cerebral palsy, and learning disabilities in addition to delays in cognitive status, behavioral

needs, adaptive behavior, language, and social skills (First & Palfrey, 1994; Leslie et al., 2003; Stahmer et al., 2005).

Education. Providing an appropriate and successful education to foster children has been a challenge; an issue stressed by the estimation that typically 70% of children in foster care services are of school age (Emerson & Lovitt, 2003). Although not all foster children experience distress preceding their enrollment into foster care, the psychological trauma and general instability that most foster children undergo significantly impacts their educational experience as well as cognition and academic potential (Scott, 2010). The influence on a youth education becomes an obvious connection when one considers how maltreatment affects children across domains of functioning (cognition, social skills, and behavior) that are required for successful functioning within the school atmosphere and learning environment. Evans (2001) studied children within the first 30 to 60 days of foster care placement and found that over three quarters of foster demonstrated more than one area of educational underachievement. This study was an important addition to the literature as it demonstrated that even before foster children experienced a lengthy stay within care, these youth were at greater academic risk than their non-foster peers.

The substantial academic difficulties often observed in foster children has far surpassed those of non-foster children (Clausen et al., 1998; Fantuzzo et al., 2003; Garland et al., 1996; Pears et al., 2011; Scherr, 2007; Stein, Rae-Grant, Ackland, & Avison, 1994; Zima, Bussing, Crecelius, Kaufman, & Belin, 1999). For example, many

foster youth fell behind academically, failed classes, and disrupted the classroom (Noble, 1997; Zetlin, Weinberg, & Shea, 2006). Researchers found that foster children typically have below average cognitive and attention skills (see Emerson & Lovitt, 2003; Noble, 1997), which has been related to grade retention (Noble, 1997). Additionally, Emerson and Lovitt (2003) demonstrated that foster children scored 15% to 20% lower on statewide achievement tests in math and reading. Jackson (1994) declared that among the various difficulties observed within the foster population, patterns of low academic achievement is likely the most significant factor in impacting their future life chances.

Regarding special education services, there has been a reported over-representation and under-identification of foster youth being served (Scherr, 2007; Scott, 2010). Zetlin (2006) proposed that over-representation in special education programs arose from attempts to counterbalance the general lack of educational support offered to these children, while identification of actual need can often be under-detected given the high residential and school mobility of these youth once in care. Accurate estimates of how many foster children indeed demonstrated learning disabilities remains unclear, as well as how many of those with need for special education services are actually receiving them (Scott, 2010). However, in reviewing national estimates of maltreated children who receive special education services, Toth and Cicchetti (2004) estimated 25% actually required these services, compared to 13.2% of children nation-wide (United States Department of Education, National Center for

Education Statistics, 2011).

Predictors of risk. General outcomes which place foster youth at risk for psychological, medical, developmental, and academic problems later in life have been examined in the literature. In addition, researchers have studied factors specific to this population (e.g., child welfare involvement and placement mobility) that place these youth at greater risk.

Maltreatment subtypes. The subtype of maltreatment, and severity among subtypes, in which the child or adolescent has been removed from their home is a significant predictor of the need for and intensity of supportive services (Garland et al., 1996; Perfect, Tharinger, Keith, & Lyle-Lahroud, 2011). Furthermore, research on particular maltreatment subtypes, or combination of subtypes, have showed associations among specific mental health outcomes and maltreatment histories (Arata et al., 2007).

Neglect. Researchers have associated neglect, in general, with the following outcomes: withdrawal, submissiveness, and depression; risk-taking behavior including prostitution, running away, and suicidal ideation; decreased gender-related self-perceptions; and elevated teacher ratings of behavioral disturbances (Kinard, 2004; Prino & Peyrot, 1994; Rosen & Martin, 1998; Widom & Kuhns, 1996). Meanwhile, various studies have been conducted on specific neglect types. For example, emotional neglect has been associated with symptoms of internalizing conditions, including lower self-worth and increased loneliness (Loos & Alexander, 1997), whereas physical neglect

has been linked to lower cognitive performance (Buckle, Lancaster, Powell, & Higgins, 2005).

Physical abuse. A history of physical abuse has been linked to increased externalizing behaviors (Arata, Langhinrichsen-Rohling, Bowers, & O’Farrill-Swails, 2005; McGee, Wolfe, & Wilson, 1997), such as anger, aggression, and acting out (Loos & Alexander, 1997). This type of abuse has also been associated with conduct disorder, suicidal ideation and attempts, legal issues, substance abuse, lower self-worth, and damaged sense of self (Bryant & Range, 1995; Cavaiola & Schiff, 1988; Fergusson, Boden, & Horwood, 2008; Green et al., 1999; Moran et al., 2004; Perfect et al., 2011). In addition, maltreated adolescents who have experienced both physical and sexual abuse are more likely to be diagnosed with depression, anxiety, and somatoform disorders (Fergusson et al., 2008; Green et al., 1999).

Sexual abuse. Victims of childhood sexual abuse have demonstrated specific difficulties in normative sexual behavior, healthy relationships, internalizing behaviors, substance abuse problems, exhibiting emotions, and discrimination between positive and negative interactions with others (Arata et al., 2005; Bensley et al., 1999; Collin-Vézina, Daigneault, & Hébert, 2013; Holt & Espelage, 2005; Kinard, 2004; Loos & Alexander, 1997; Moran et al., 2004; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Murray, 2014; Perfect et al., 2011; Silverman, Reinherz, & Giaconia, 1996; Widom & Kuhns, 1996). Additionally, a history of sexual abuse has the strongest relation to suicidality among maltreatment subtypes (Bryant & Range, 1997). While a

history of combined sexual and physical abuse are related to similar mental health outcomes, Fergusson and colleagues (2008) demonstrated that childhood sexual abuse has a stronger and more consistent association with mental health problems in adulthood.

Emotional abuse. Research on emotional abuse has been less prevalent than research on other maltreatment subtypes. However, verbal abuse may relate to anger, aggression, substance abuse, and decreased self-worth (Loos & Alexander, 1997; Moran et al., 2004; Mullen et al., 1996). Furthermore, Rosen and Martin (1998) demonstrated that exposure to both physical and emotional abuse relates to a greater likelihood of displaying negative masculinity characteristics (i.e., hyper masculine traits).

Child and family characteristics. Various child and family characteristics (e.g., age, education, SES) have been examined in relation to general outcomes for children involved in child welfare services and their placement mobility during care (e.g., Chernoff et al., 1994; Connell et al., 2007; Dozier, Stovall, Albus, & Bates, 2001). Additionally, developmental, psychological, and physical problems present at enrollment into care can further affect outcomes during out-of-home placement. In particular, a child who has issues in one or more functional domain will be more likely to have greater mobility within foster home placements and a longer length of stay in care (Rubin et al., 2004). Such trends are concerning given the increased rates of children who are admitted into foster care with complex mental health issues, medical conditions, and delayed development (American Academy of Pediatrics, 2002). When

examining specific family factors of children reentering care, Kimberlin, Anthony, and Austin (2009) examined higher rates in families that demonstrated the following: poverty, lack of parenting or social support, history of neglect, parental substance abuse, and parental ambivalence about their caretaking role. Kimberlin et al. (2009) also reported that children with mental, physical, and behavioral health problems, children who are either in infancy or adolescence, and children who are African American have been associated with higher rates of reentry into foster care.

Placement mobility. The move from home to foster placement increases the risk for adjustment concerns due to the disruption to family and neighborhood ties (Child Welfare League of America, 1999). Adding to this vulnerability is the high residential mobility that children often experience once in foster care (Zetlin, Weinberg, & Luderer, 2004). Moreover, given that residency and schooling zones are linked, residential changes often cause subsequent school transfers (Conger & Finkelstein, 2003). On average, during their time in care foster children change home placements four times (Nowak-Fabrykowski & Piver, 2008) and more than twice as likely to transfer schools three or more times by the fifth grade than their non-foster peers (Blome, 1997). Such high mobility rates have been shown to negatively impact children's social adjustment and education, including a greater risk for learning problems, disruptions to healthy development, reentry into care, and frequent use of mental health services (Christian, 2003; Clausen et al., 1998; Kimberlin et al., 2009; Rubin et al., 2004).

Resiliency among Foster Youth

Although research has shown the long-term and maladaptive outcomes of child maltreatment across domains of functioning (Jaffee et al., 2007; McGloin & Widom, 2001; Stahmer et al., 2005; Widom, 2000), the heterogeneity of outcomes demonstrates the varying effects of maltreatment on individuals (Toth & Cicchetti, 2004). To explore adaptive traits in foster youth, researchers have more recently focused their attention on the children who emerge as resilience (i.e., lacking psychopathology) in spite of the childhood victimization (Cicchetti, Rogosch, Lynch, & Holt, 1993; Craven & Lee, 2010; DuMont, Widom, & Czaja, 2007; Jaffee et al., 2007; Luthar, Cicchetti, & Becker, 2000; McGloin & Widom, 2001). Studies that define resilience in a more stringent matter, by requiring displayed competence across multiple domains and longitudinally, found that 12% to 48% of children, adolescents, or young adult victims of childhood maltreatment appear resilient despite their prior traumas (e.g., Cicchetti & Rogosch, 1997; Cicchetti et al., 1993; DuMont et al., 2007; McGloin & Widom, 2001). The incorporation of resiliency factors observed in foster youth is an important aspect of this study so that results may potentially add to an understanding of background characteristics that promote adaptive functioning (in universally assessed foster youth) as well as possibly add to the growing literature on key factors for early intervention services and preventive models of care.

Various studies examining resiliency in childhood victims found that individual characteristics and the interaction with environmental factors impact resiliency (e.g.,

Cicchetti et al., 1993; Cicchetti & Rogosch, 1997; DuMont et al., 2007; Jaffee et al., 2007; Kimberlin et al., 2009). The National Child Welfare Resource Center for Family-Centered Practice (2003) stated that beyond the experience of child abuse or neglect, a youth's resilience can be negatively affected by the community they live in (i.e., living in violent or impoverished neighborhood), their age (with ages 13 to 15 years being the most vulnerable to poor coping skills or aggression), and gender (with males observed as less resilient overall). However, regarding gender, the results have been mixed. For example Widom and colleagues (DuMont et al., 2007; McGloin & Widom, 2001) demonstrated that females are relatively more resilient to childhood victimization than males; however, Arata et al. (2007) did not observe gender differences among maladaptive outcomes and Jaffee et al. (2007) found that males were as equally likely to be resilient as females. Jaffee and colleagues (2007) also reported that individual strengths (e.g., higher IQ or overall adjustment) distinguished resilient from non-resilient children in environments of low stress; although this differentiation was absent among children living among high family and neighborhood stress. Such indications were consistent with the cumulative stressors model of children's adaptation, which posits that under severe conditions of stress, positive outcomes may not be possible even for individuals with high intrapersonal strengths (Jaffee et al., 2007). In terms of cultural aspects, DuMont and colleagues (2007) found that being Caucasian was associated with an increased probability of resilience in adolescence, yet not in adulthood. However, when specifically examining a youth's risk of reentry into care,

Kimberlin et al. (2009) found that coming from a home where the primary language is not English was related to decreased rates of reentry.

Call for Immediate and Universal Assessments

Consistent findings from decades of research have demonstrated the psychological and developmental issues of youth entering foster care (Leslie et al., 2005). Therefore, obtaining an accurate and immediate assessment of risk factors is essential for developing and implementing prevention and intervention services (Benedict et al., 1996). Clausen et al. (1998) stated the most important mental health issue for foster youth is the identification of specific needs, since the most effective treatment strategies cannot be provided without this initial assessment. Burns and colleagues (2004) contended that mental health needs assessments and access to services must be the top priorities for children enrolling into care and emphasized the clear need for universal screening. When observing the disproportionately high prevalence of poor outcomes and increased risk factors throughout adulthood for these youth, Zlotnick, Tam, and Soman (2012) concluded a clear need for a screening and treatment program that guaranteed follow-up for youth who have had contact with the foster care system. Likewise, Viesel and colleagues (2015) recently highlighted the need for comprehensive assessments of traumatized youth who have been removed from their home, irrespective of placement type or maltreatment severity, as a way to improve outcomes across domains of functioning.

Various professional organizations [e.g., American Academy of Pediatrics,

Committee on Early Childhood, Adoption, and Dependent Care (1994, 2002); American Academy of Child and Adolescent Psychiatry (2002); & Child Welfare League of America (1998)] have proclaimed the need for medical, psychological, and developmental screenings of all children in foster care within 72 hours of removal, comprehensive assessments within 60 days, and for the results of such assessments be tied to the provision of individualized treatment services. Furthermore, the federal government has recently emphasized the importance of collaboration among child welfare agencies and professional in medical, mental health, and developmental services. In 2003, the “Keeping Children and Families Safe” Act (P.L. 108–36) amended the “Child Abuse Prevention and Treatment” Act (P.L. 93–247) of 1974 to expressly address the necessity of collaboration among child welfare agencies and authorities in public health, developmental disabilities, and mental health regarding prevention and intervention services for youth in foster care.

Unfortunately, even with the outpour of calls for universal and comprehensive assessments upon entry into care and federal support for collaboration targeted at early intervention, there has been a lack of empirical research on moderating the predictable and detrimental outcomes commonly found in foster youth (Craven & Lee, 2010) as well as remaining barriers to implementing routine assessment measures in practice (Leslie et al., 2005). Besides the difficulty observed in determining who should refer a youth to mental health services, when to refer, and/or how to assess if a referral is necessary, the receptiveness and accessibility of mental health providers have come

into question (Kolko, Baumann, & Caldwell, 2003). There also appears to be a lack of adequately trained child mental health professionals on issues of childhood maltreatment, which intensifies issues in accessing evaluation and coordinating interdisciplinary care (Burns et al., 2004). These issues directly lead to the need for the proposed study, as an examination of immediate and routine assessments by trained behavioral health professionals can provide a more accurate and inclusive view of the multidimensional difficulties that our nation's foster youth characteristically face and what case characteristics place foster youth at greatest risk upon entry into care.

Summary and Conclusions

In summary, there is a wealth of research implicating the negative and long-term consequences of pre-removal experiences on children entering foster care. These outcomes and their suspected foundations appear to be multidimensional. In other words, the outcomes have been observed across domains of functioning (physical health, mental health, development, and academic) and the risk factors arise from the transactional effect of biological, social, and environmental conditions. While the negative effects of child maltreatment and out-of-home placement are often predictable and detrimental, some child victims show resiliency in the face of aversive and unsupportive parent-child-environment relations. Recently, professional organizations, researchers, and federal legislation have outlined the critical importance of immediate and universal assessments. However, little is actually known about the implications of automatic assessments on service needs and treatment planning among

subgroups of foster youth. For example, how does an individual's maltreatment profile, developmental age grouping, or overt symptomatology at the time of removal affect their predicted need for services and intensity of care? This study aimed to provide insight into how a child's personal and familial characteristics, along with aspects of the home removal process, relate to their service needs by accessing the records of a sample of youth who were automatically assessed and enrolled in behavioral health services at the time of their home removal.

CHAPTER 3: METHOD

Participants

Participants included school-age foster care children from a southwestern region who were enrolled into services at a behavioral health agency following home removal by child welfare services. Eligibility for this study was based on age, referral source, and discharge date; further details are included in the Identification of Eligible Records section.

The behavioral health agency identified an initial pool of 461 clients that met eligibility criteria. Among the 461 clients, a total of 134 clients (29%) were excluded from the study after further examination of eligibility and accessibility. Specifically, 16 clients (3%) were found ineligible upon further review; 17 clients (4%) were enrolled for less than a week and did not complete a formal intake; and 101 clients (22%) did not have on-site records located within the agency's filing system for closed cases. There are multiple reasons why a past client may have been identified by the agency as eligible for this study, yet had no physical file on-site, such as transfers to alternate agencies, enrollment period lasting less than 30 days before an intake was completed, or re-enrollment into services. The remaining 327 clients (71%) were eligible youth with accessible paper records and comprised the sample for this study.

A subset of the included 327 youth who were ages 6 years and older (265 children, 81.0% of total sample) were examined for specific data analyses, as outlined further in the Results section, due to age restrictions of certain outcome measures. The

following sample demographics and characteristics apply to the total participant pool of 327 children. See Figure 1 for a flow chart of sample size, from initial screening to the final sample and subsample utilized within specific data analyses.

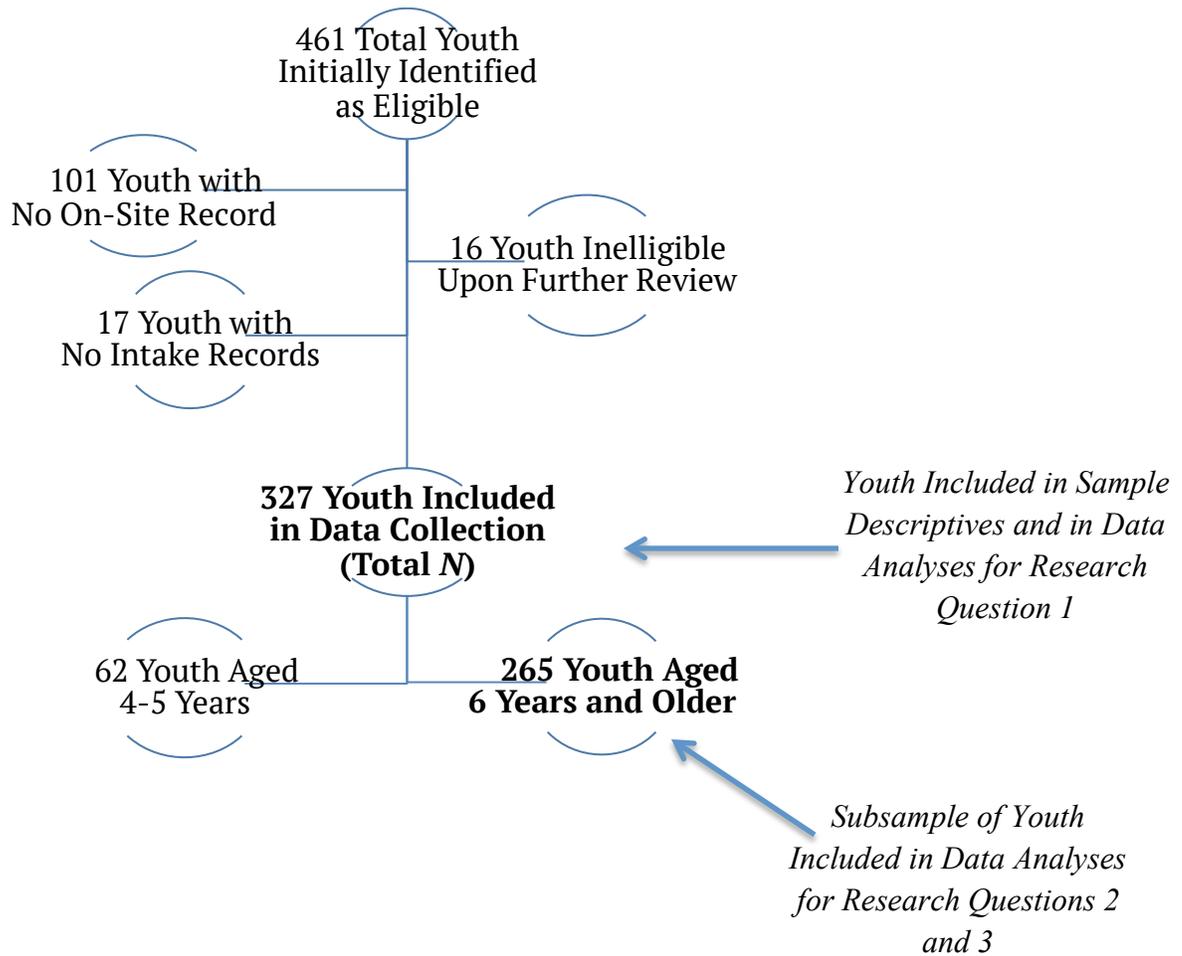


Figure 1. Sample flow chart.

Child demographics and characteristics. See Table 1 for sample demographics. The client pool within records reviewed consisted of 46.8% males (n=153) and 53.2% females (n=174) between the ages of 4.0 years and 16.92 years (mean age of 9.10 years). The racial breakdown of foster care children within this sample was as follows: 84.7% White, 5.5% American Indian/Alaska Native, 4.6% Black, 0.3% Asian,

Table 1.

Demographic Characteristics of Children in Records Sampling

| Characteristic | <i>n</i> | % / $\bar{x} \pm sd$ |
|----------------------------------|----------|---------------------------------|
| Years of Age (Age Range) | 327 | 9.10 \pm 3.48 (4.00-16.92) |
| Developmental Stage ^a | | |
| Early Childhood | 62 | 19.0% |
| Middle Childhood | 98 | 30.0% |
| Preadolescence | 105 | 32.1% |
| Adolescence | 62 | 19.0% |
| Gender | | |
| Male | 153 | 46.8% |
| Female | 174 | 53.2% |
| Ethnicity (<i>n</i> =293) | | |
| Hispanic | 139 | 42.5 % |
| Non-Hispanic | 188 | 57.5% |
| Race | | |
| White | 277 | 84.7% |
| American Indian/Alaska Native | 18 | 5.5% |
| Black/African American | 15 | 4.6% |
| Asian | 1 | 0.3% |
| Native Hawaiian/Pacific Islander | 1 | 0.3% |
| Other/Multi-Racial | 15 | 4.6% |
| Primary Language | | |
| English | 298 | 91.1% |
| Spanish | 7 | 2.1% |
| Bilingual English/Spanish | 18 | 5.5% |
| Other | 4 | 1.2% |
| General Medical Condition | | |
| 1+ Condition | 73 | 22.3% |
| No Documented Condition | 254 | 77.7% |
| Arrest History | | |
| 1+ Arrest | 21 | 6.4% |
| No Arrests | 306 | 93.6% |
| Birth Order | | |
| Only Child | 43 | 13.1% |
| Oldest Child | 130 | 39.8% |
| Middle Child | 97 | 29.7% |
| Youngest Child | 57 | 17.4% |

Note. ^aDevelopmental stages were defined as follows: early childhood = age 5 years or younger, middle childhood = ages 6 to 8 years, preadolescence = ages 9 to 12 years, and adolescence = age 13 years or older.

0.3% Native Hawaiian/Pacific Islander, and 4.6% Other/Multi-Racial. Among this sample, 42.5% of clients were Hispanic or Latino. Just over 90% of clients spoke English as their primary language. Within the BHCA intake reports, 73 children (22.3%) had a known medical condition at the time of intake and 21 youth (6.4%) had an arrest history.

Birth order within the home of origin was as follows: 43 were the only child (13.1%), 130 were the oldest child (39.8%), 97 were a middle child (29.7%), and 57 were the youngest child (17.4%) in the home. Of the 284 children with siblings in the sample, 269 (94.7%) cases had concurrent removal of children in the home. Among those children with siblings who were removed simultaneously, 111 of these children (41.3%) were placed separately from at least one sibling. As reflected in the literature (Tarren-Sweeney & Hazell, 2005), only a small portion of youth with siblings were the only child removed from the home ($n=16$; 5.6%). Qualitative review of records from this sample falls in line with previously reported reasons for removal of only one child from the home or separation of siblings who entered simultaneously (Depp, 1983; Herrick & Piccus, 2005; Tarren-Sweeney & Hazell, 2005). To reiterate, these reasons include individual removal when the safety concern or caretaking challenge is specific to that child and/or if removal of that child eliminates the potential for harm between siblings (Herrick & Piccus, 2005; Tarren-Sweeney & Hazell, 2005).

Table 2 summarizes client educational status and developmental history. Of school-age children, 5.5% ($n=18$) were not enrolled in an educational program. Of those

Table 2.

Child Education and Developmental History Characteristics

| Variable | <i>n</i> | % |
|---|----------|---------|
| Educational Level (<i>n</i> =327) | | |
| >1 Year of Schooling | 49 | 15.0% |
| Grades K-3 | 124 | 37.9% |
| Grades 4-6 | 83 | 25.4% |
| Grades 7-8 | 36 | 11% |
| Grades 9-12 | 35 | 10.7% |
| School Enrollment Status (<i>n</i> =327) | | |
| N/A – Underage | 49 | 15.0% |
| (Early Childhood Program) | (13) | (4.0%) |
| (No Early Childhood Program) | (36) | (11.0%) |
| Enrolled | 260 | 79.5% |
| Un-enrolled | 18 | 5.5% |
| Special Education Status (<i>n</i> =293) | | |
| Special Education Services | 46 | 15.7% |
| No History of Special Education | 247 | 84.3% |
| History of 1+ Developmental Delay in Childhood (<i>n</i> =327) | | |
| Yes | 124 | 37.9% |
| No | 203 | 62.1% |
| Speech Delays (<i>n</i> =169) | | |
| Yes | 32 | 18.9% |
| No | 137 | 80.1% |
| Referral to DDD Services (<i>n</i> =169) | | |
| Yes | 14 | 8.3% |
| No | 155 | 91.7% |

Note. DDD = Department of Developmental Disabilities.

enrolled, 15.7% (*n*=46) were identified as having been involved with special education services. One or more delays in developmental milestones or skill sets were identified in 124 youth (37.9%), with 14 children (8.3% of the total sample) having been previously referred for Department of Developmental Disability (DDD) services. Almost a fifth of the sample (*n*=32; 18.9%) had documented speech delays or presented with speech problems at the time of intake. Unfortunately, DSM-IV-TR Diagnostic Codes were largely generically coded within the intake assessment. To illustrate, almost nine

out of ten youth (88.7%; $n=275$) had primary Axis I codes that reflected reflect neglect or abuse of a child and Axis II codes were either left blank or missing specified no diagnosis.

Family characteristics and structure. As can be seen on Table 3, over half ($n=195$; 59.6%) of children came from a two-parent home. The majority of the sample ($n=277$; 84.7%) was split between among the following in-home caregiver types: 29.1% mother-only ($n=95$), 28.4% both mother and father in-home ($n=93$), and 27.2% living with a parent and step-parent/parent's partner ($n=89$). Caregiver risk factors were highly prevalent; about a third ($n=99$; 33.1%) of children experienced domestic violence among caretakers, almost a quarter ($n=75$; 23.1%) of children had a parent who was incarcerated at the time of removal, and 85% of clients ($n=278$) had a familial history of alcoholism, other substance abuse, or serious mental illness. Further, 36.1% of children ($n= 107$) had at least one caretaker who had been previously involved with CPS (as known at the time of removal).

Maltreatment and child welfare data. Tables 4-6 contain remaining summative information collected: foster care placement; documented maltreatment experiences; and perpetrator information. Half (50.2%; $n=164$) of clients were placed in kinship care; 23.2% ($n=76$) were placed in non-relative foster care homes, 16.2% ($n=53$) were placed in group homes, and 8.3% ($n=27$) were placed in a temporary shelter.

Only 3.7% ($n=12$) of clients had experienced active-only maltreatment types

Table 3.

Caretaker Characteristics and Risk Factors

| Variable | <i>n</i> | % |
|--|----------|-------|
| In-Home Caretakers | | |
| Single-Parent Home | 125 | 38.2% |
| Two-Parent Home | 195 | 59.6% |
| Child is Homeless | 2 | 0.6% |
| Living with Alternate Adult Figure | 4 | 1.2% |
| Primary Caretakers | | |
| Mother | 95 | 29.1% |
| Father | 24 | 7.3% |
| Both Mother and Father | 93 | 28.4% |
| Parent and Step-Parent/Live-in Partner | 89 | 27.2% |
| Grandparent(s) | 11 | 3.4% |
| Aunt and/or Uncle | 4 | 1.2% |
| Other | 11 | 3.4% |
| Primary Caretaker and/or Attachment Figure, History of | | |
| Alcoholism (<i>n</i> =287) | 106 | 36.9% |
| Other Substance Abuse (<i>n</i> =287) | 201 | 70.0% |
| Serious Mental Illness (<i>n</i> =289) | 85 | 29.4% |
| Death (<i>n</i> =323) | 18 | 5.6% |
| Incarceration (<i>n</i> =324) | 75 | 23.1% |
| Domestic Violence (<i>n</i> =299) | 99 | 33.1% |
| Prior Involvement with CPS (<i>n</i> =296) | | |
| Yes | 107 | 36.1% |
| No/Unknown at Time of Home Removal | 189 | 63.9% |

Note. CPS = Child Protective Services.

documented; 47.1% (*n*=154) had experienced both active and passive maltreatment types and 43.4% (*n*=142) of clients had experienced passive-only maltreatment. While 42 clients (12.8%) were removed primarily due to the maltreatment of a sibling, 20 (6.2%) of these clients also had recorded maltreatment experiences discovered during the intake process. Across all six maltreatment types, a single, biological parent was the most common perpetrator.

Table 4.

Foster Placement and Service Care History

| Variable | <i>n</i> | % |
|-------------------------------------|----------|-------|
| Primary Residence ^a | | |
| Foster Home/Therapeutic Foster Home | 76 | 23.2% |
| Home with Family ^b | 2 | 0.6% |
| DES Group Home | 53 | 16.2% |
| Shelter | 27 | 8.3% |
| Level I-III Treatment Setting | 1 | 0.3% |
| Kinship Placement | 164 | 50.2% |
| Other/Non-relative Placement | 4 | 1.2% |

Notes. Total $n=327$; ^a*Primary Residence* refers to the initial placement type within foster care at the time that demographic data were collected (within 24 hours of removal); ^b*Home with Family* still indicates that the child was removed from their home residence and placed in the home of another immediate family member with which they had spent partial time in the family member's household prior to removal, e.g., their other biological parent or an adult sibling; DES = Department of Economic Security.

Identification of Eligible Records

A filtering process was completed in collaboration with a community behavioral health agency to identify records of foster care youth who completed an episode of care since the agency's opening in March 2010. The agency staff identified eligible cases through their electronic record system. Initial eligibility was set by filtering the online database for clients that (a) were between the ages of four and sixteen years at time of entry, (b) entered behavioral health services through the regional CPS Urgent Response protocol, and (c) were discharged after March 2012. This latter criterion was in place due to data collection being part of a larger study examining treatment outcomes, from intake to discharge. The client list provided by the agency was further reviewed to confirm eligibility and accessibility within the agency's filing system for closed records

Table 5.

Documented Maltreatment Experiences

| Variable | <i>n</i> | % |
|--|----------|-------|
| Child-Specific Exposure to Maltreatment | | |
| No Known Maltreatment | 19 | 5.8% |
| Active-Only Maltreatment Types ^a | 12 | 3.7% |
| Passive-Only Maltreatment Types ^b | 142 | 43.4% |
| Active+Passive Maltreatment Types ^{a,b} | 154 | 47.1% |
| Direct Abuse Experiences | | |
| Physical Abuse | 120 | 36.7% |
| Sexual Abuse | 48 | 14.7% |
| Emotional Abuse | 80 | 24.5% |
| Other-Specified Abuse | 57 | 17.4% |
| Neglect-based and Indirect Types of Maltreatment | | |
| Neglect | 289 | 88.4% |
| Physical/Emotional Neglect ^c | 279 | 85.3% |
| Other Neglect Type ^d | 58 | 17.7% |
| Indirect Maltreatment – Exposure to: | 307 | 93.9% |
| Domestic Violence | 129 | 39.4% |
| Substance User | 252 | 77.1% |
| Drugs ± Drug Paraphernalia | 115 | 35.2% |
| Endangerment | 114 | 34.9% |
| No Available Caretaker/Abandonment | 37 | 11.3% |
| Sibling-Only Exposure to Direct Abuse | 22 | 6.7% |
| Removal Primarily Due to Sibling Maltreatment | 42 | 12.8% |

Notes. ^a *Active-Only Maltreatment Types* includes physical abuse, sexual abuse, and other instances of abuse that include an interaction of both perpetrator and child; ^b *Passive-Only Maltreatment Types* Includes emotional abuse, neglect, and all other types of maltreatment that do not include physical contact or actions performed by the child ; ^c *Physical/Emotional Neglect* includes neglect of physical and/or emotional caretaking needs; ^d *Other Neglect Type* includes denial of education or medical care when appropriate and/or environmental needs.

(i.e., discharged clients).

Data Collection

Data were then obtained from each client's mental health record. The standard mental health record for youth enrolled via CPS Urgent Response included the

Table 6.

Identified Perpetrator of Child-Specific Abuse or Neglect by Maltreatment Type

| Perpetrator | Maltreatment Type | | | | | |
|----------------------------|---------------------|------------------|---------------------|------------------------|---------------------------------|--------------------------|
| | Physical (n=120) | Sexual (n=48) | Emotional (n=80) | Other-Active (n=57) | Neglect ^a (n=297) | Other-Passive (n=307) |
| Bio-Parent | 43.3% | 22.9% | 42.5% | 56.1% | 59.1% | 42.7% |
| Step-Parent | 20.8% | 20.8% | 10.0% | 7.0% | 0.7% | 2.9% |
| Both Bio-Parents | 6.7% | 2.1% | 3.8% | 12.3% | 25.8% | 23.8% |
| Parent+Step-Parent/Partner | 10.0% | - | 22.5% | 15.8% | 11.1% | 23.1% |
| Other Relative | 4.1% | 18.8% | 5.1% | 1.8% | 2.5% | 2.7% |
| Multiple | 3.3% | 10.4% | 1.3% | - | 0.7% | 2.0% |
| Other | 2.5% | 6.3% | 1.3% | 3.5% | 0.4% | 1.3% |
| Unspecified | 9.2% | 18.8% | 13.8% | 3.5% | - | 1.6% |

Notes. $N = 327$; ^aThe category *Neglect* includes neglect of physical and/or emotional needs; it does not include educational, medical, or environmental neglect types.

following: Client Cover Sheet, Member Demographic Form, CPS Dispatch and/or Initial

Court Report for the Preliminary Protective Hearing, Behavioral Health Core

Assessment (BHCA), and CPS Assessment Addendum. These record components

reflected data obtained at various times following home removal:

- CPS Dispatch reports - completed at the time of removal
- CPS Assessment Addendum - completed within 24 hours of removal
- Client Cover Sheet/Member Demographic Form - completed within 48 hours of removal
- Initial Court Report for the Preliminary Protective Hearing - completed within 7 days of the removal
- Child and Adolescent Service Intensity Instrument (CASII) - completed within 14 days of enrollment (with enrollment occurring within 48 hours post removal)

- BHCA - completed within 60 days of enrollment (with enrollment occurring within 48 hours post removal)

Data coding. Records were examined and coded to identify case characteristics and assessments of the child's functioning and service needs at the time of removal. See Appendix B for an overview of data collection variables.

Three coders were involved with this project, including the named doctoral candidate and two research assistants. The research assistants were trained by the doctoral candidate on the data review and coding process; the research assistants remained blind to the hypothesized independent variables and target dependent variables of this study. The doctoral candidate and two researchers completed the first 20 eligible and available records together as part of the training process. For the next 228 records, data were dually coded by the research assistants (i.e. every record was individually reviewed and coded by both research assistants).

An interrater discrepancy analysis was completed after the first 50 records were coded; discrepancies were resolved by the doctoral candidate as necessary and results were reviewed with both research assistants. Another interrater discrepancy analysis was completed after a total of 248 records were coded and discrepancies were reviewed and resolved by the doctoral candidate with the assistance of one research assistant. At this time, allotted funding for the research assistants was expended. Therefore, the doctoral candidate completed the coding process for the remaining 79 records.

Measures

Child and family demographics. Each client's age, gender, grade, and race/ethnicity were included as demographic characteristics. In addition, developmental stages were coded as follows: (1) early childhood, age 5 years or younger; (2) middle childhood, ages 6 to 8 years; (3) preadolescence, ages 9 to 12 years; and (4) adolescence, age 13 years or older. Family size was recorded through as the total number of children and caretakers within the home.

Child characteristics. Information on the child's current enrollment status in an academic institution for school-age clients as well as current or previous enrollment in special education services was recorded. Coding for developmental information included any reference within the BHCA to any prior referrals or services received regarding developmental delays, developmental concerns, or delayed onset of meeting developmental milestones. Speech problems were coded to include assessor observations of speech or language delays and/or reference to past evaluations that found speech or language delays. Clients' birth order was coded through the youth's birth order within the home and number of siblings.

Primary caregiver characteristics. The number of primary caretakers and their relation to the child was recorded under one category: (1) single biological parent, (2) both biological parents, (3) single biological parent with partner (e.g., boyfriend/girlfriend or stepparent), (4) other relatives, or (5) non-relatives/friend. Patterns of risk by one or more caretakers were coded dichotomously as well as a

continuous summary of four categories: (1) alcohol abuse, (2) other substance abuse issues, (3) serious mental illness, and (4) arrest history. Parent arrest history, parental death, and in-home domestic violence were also recorded under caregiver risk factors.

Child welfare involvement. Family prior history with CPS, maltreatment experiences, general presentation information taken at the time of removal, and the initial placement setting of the child after removal were recorded.

Maltreatment history. CPS Addendums, CPS Dispatches, and BHCAs were reviewed and coded for allegations of maltreatment experiences related to the home removal. Dichotomous classification of maltreatment subtypes reflects the four most commonly observed maltreatment subtypes, as recently utilized in the literature (e.g., Arata et al., 2005; Buckle et al., 2005; Cullerton-Sen et al., 2008; Strathearn, O'Callaghan, Mamun, & Najman, 2009): physical abuse, sexual abuse, emotional abuse, neglect (through failure to provide or lack of supervision). Additional forms of reported maltreatment labeled as Other-Active or Other-Passive were recorded. This included sexual exploitation not meeting the definition of sexual abuse, domestic violence between child and caregiver, exposure to domestic violence, substance use, and drugs/drug paraphernalia; general endangerment, abandonment, other form of neglect (e.g., medical or educational neglect). Beyond these dichotomous recordings, the summation of total, active, and passive maltreatment subtypes experienced were logged as continuous variables.

General presentation of youth at removal. The CPS Assessment Addendum was reviewed and coded for the type of general presentation characteristics of the youth within 24 hours of the home removal. The General Presentation scale includes observations of the following, either by behavioral health professional or CPS investigator: listless/withdrawn, disinterested, anxious, fearful, angry, labile, fussy, shocked, sad, hearing voices, suicidal, and violent/homicidal. Presentation characteristics were also coded dichotomously as negative presentation characteristics (i.e., observations of one or more of the above presentation types).

Initial placement following removal. Out-of-placement types following home removal were coded as (1) foster care (non-relative)/therapeutic foster home, (2) home with family (i.e., household of an alternate primary caregiver not involved with CPS investigations), (3) group home, (5) shelter, (6) level 1-III treatment facility, (7) relative placement/kinship care, or (8) other.

Mental health functioning and service needs. The BHCA utilized the multi-axial system of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR) and various outcomes of the Child and Adolescent Service Intensity Instrument (CASII) for recording a diagnostic profile of each youth. The need for service intervention was examined through a client's initial level of functioning (specified as a score of 1-100 on the Children's Global Assessment Scale) and the intensity of services required (specified by the Composite Score of 8-40 on the CASII).

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR) diagnostic summary (America Psychiatric Association, 2000).

The DSM-IV was developed as a helpful guide to clinical practice by providing a common language and standard criteria for the classification of mental disorders. The manual is organized in a multiaxial system to cover different domains of functioning that may assist mental health providers in clinical evaluation. This type of systems helps to organize contributing factors to mental disorders and capture the complexity of clinical conditions. This tool is widely used as the first step in a comprehensive formulation for treatment planning by professionals and researchers of varying orientations and specializations.

Children’s Global Assessment Scale (CGAS; Shaffer et al., 1983). Global assessment measures allow for trained professionals to synthesize knowledge of an individual’s social and psychiatric functioning into a meaningful index of severity of disturbance (Shaffer et al., 1983). Given that Axis V of the DSM-IV-TR pertains to a Global Assessment of Functioning (GAF) for persons 18 years or older, the CGAS is utilized for an Axis V pediatric measure of functioning. The CGAS is the most commonly used measure of global impairment in children and adolescents (Hodges & Wong, 1996), and has been found to substantially correlate with the GAF scores DSM-IV Axis V (Goldstein & Naglieri, 2009). The CGAS evaluates the youth’s lowest level of functioning, on a scale of 1 to 100; higher scores indicating healthier functioning (Shaffer et al., 1983). Each range of 10 points (e.g., 1-10, 11-20 . . .91-100) includes a

description of functioning, and the rater assigns a final score within the appropriate 10 point range (Goldstein & Naglieri, 2009). Research has demonstrated that this measure is reliable between raters and longitudinally, as well as displaying discriminant validity for inpatient/outpatient scores (Shaffer et al., 1983). Shaffer and colleagues (1983) designated a score of greater than 70 to indicate normal functioning. Later on, Bird, Shaffer, and team members (1993) employed a cut-off score of 60 or lower to indicate definite impairment. Therefore, for the purposes of this study, CGAS scores were entered as continuous (1-100) and categorical: (1) normal functioning, >70; (2) at-risk functioning, 61-70; and (3) clinical impairment, ≤60.

Child and Adolescent Service Intensity Instrument (CASII; American Academy of Child and Adolescent Psychiatry, 2001). The CASII is a tool used to determine the appropriate level of care for youth ages 6 to 18 after a comprehensive clinical assessment has been conducted on the youth (Fallon et al., 2006). The CASII includes an assessment of the intensity of mental health services needed, a standardized system of ‘levels of care,’ and a matching system for the two. The trained evaluator first rates the clinical severity of an individual using six dimensions (with eight total ratings) from 1 to 5, in order of escalating impairment. Field testing of the CASII within children mental health care systems suggested that this instrument can be used reliably by a range of clinicians with relatively brief training (6 hours), with greater interrater reliability than previously demonstrated approaches for determination of level of care (Fallon et al., 2006).

The ratings produce a Composite Score, with higher Composite Scores indicating greater dysfunction. The Composite Score is then linked to a recommended level of care (Level of Service Intensity; CASII-LCI). The CASII has been extensively studied and found to be sufficiently reliable and valid among clinical settings (Fallon et al., 2006; Romanelli, LaBerrie, Hackler, & Jensen, 2008). Specifically regarding inter-rater reliability, Fallon and colleagues (2006) found that subscale intra-class correlation coefficients ranged from 0.73-0.93 (composite score coefficient of 0.89) for psychiatrists and ranged from 0.57-0.95 (composite score coefficient of 0.93) for non-psychiatrists. Furthermore, the CASII has been found to moderately correlate with the CGAS, particularly with sub-scales measuring clinical perception (ranging 0.41-0.26; Fallon et al., 2006); however, sub-scales surrounding environment rather than the child directly (e.g., environmental support, parent acceptance) had correlations close to 0. For analysis purposes, the CASII individual dimension ratings, Composite Score (CASII-CS), and Level of Service Intensity Score (CASII-LSI) were collected.

Dimensions. There are six dimensions for clinical severity on the CASII, with a total of eight ratings on a scale from 1 to 5. Sample descriptive anchors of various dimension ratings are included in Appendix E. The Risk of Harm dimension assesses a youth's risk of harming themselves or others, as well as the potential of victimization. The Functional Status dimension measure impact of a youth's primary condition on their ability to function in an age-appropriate manner within everyday life tasks (e.g., eating and sleeping) and roles (i.e., family member, friend, and student). The

Comorbidity dimension assesses the existence and interaction of disorders across medical, substance abuse, development disability/delay, and psychiatric domains. The Recovery Environment dimension includes ratings for both environmental stress and environmental support. The Resiliency and Treatment History dimension measures the youth's internal strength and ability to adapt while also taking into consideration whether the youth has successfully responded to treatment in the past. The Acceptance and Engagement dimension includes ratings for both the youth and their caretaker's attitudes of acceptance and engagement toward treatment.

Missing Data

No youth records had all 185 variables available, due to variability in provider documentation, including incomplete items or vague qualitative descriptions within the intake records. For example, the intake record may have identified a history of physical abuse within an individual record, but had no identification of the perpetrator. In addition, portions of standard intake documentation were sometimes missing from the record, particularly in the case of short-term referrals, meaning that behavioral health records were transferred or closed within 30 days of referral. After analyzing missing data, only 23 variables (12.4%) included identifiable values for all 327 participants. Overall, missing data rates ranged from 0%-94.2% missing, with a median of 18.3% missing. One-third of variables (33.7%) had 50% or more of values missing. Missing values were not replaced with a single-value imputation such as variable means since replacing missing data changes the distribution of a particular variable and

subsequently decreases the present variance (Pigott, 2001). The specific number-per-variable are reported via sample size (n) in the Results section and throughout tables within this dissertation.

Data Analyses

The collected data were examined through quantitative and explorative data analyses. First, the univariate nature of each baseline case characteristics was examined (see Appendix B for a broad overview of collected variables, including predicted and exploratory variables). Following descriptive and univariate analysis, various data analysis procedures were utilized to address the research questions. Given the potential correlation between predictor variables and the inclusion of variable sub-components, multicollinearity was evaluated in all models and reported in the Results section.

Multiple regression analyses. To examine direct and indirect effects of collected variables on the selected criterion of service need indicators (CGAS and CASII-LSI), multiple regression analyses were conducted using a backward elimination method (Draper & Smith, 2014), with missing cases being excluded listwise. See Appendices C and D for a flow chart of variables that were hypothesized to be predictors of CGAS scores and CASII Composite Scores, respectively. Multiple regression analysis is an explanatory procedure approximating the unique and combined effects on an outcome variable (Keith, 2006). Backward elimination is a manual, stepwise procedure that begins with all predictors in the model; in this case,

'predictors' are the pretested variables that were significantly correlated with outcome variables at the bivariate level. Within this process, the least significant variable in the regression model (i.e., the variable with the largest p value) is removed and the model is refitted (Dallal, 2012); subsequent steps follow until all variables within the model have individual p values less than or equal to 0.10. An advantage of backward elimination over other stepwise procedures (i.e., forward selection and stepwise regression) is the opportunity for a set of variables to have collective predictive capability even though a subset of them may not (Dallal, 2012).

In order to create a multivariate prediction model for global functioning (aim 1) and for service need (aim 2), first the univariate nature of each sociodemographic data and case file variables (age, gender, race/ethnicity, and child/family/maltreatment-related factors; see Appendix B) were observed. Next, the bivariate relations between baseline case characteristics and global functioning (CGAS; aim 1) or service need (CASII-LSI; aim 2). While utilizing a single dataset, the analyses examined two samples as the data for CASII-LSI were limited to clients who were ages six years to sixteen years at the time of intake, and therefore, represented a subset of the original sample.

Following the identification of significant bi-multivariate relationships for each criterion through established analyses, linear multiple regression analyses were used to further examine how the child/family background characteristics and maltreatment histories jointly contributed to both global functioning scores and level of service intensity scores. Since both sets of independent variables significantly predicted the

respective dependent variables at $p \leq .05$, variables that did not predict the criterion at $p \leq .10$ were manually removed from the regression model.

Latent class analysis (LCA). LCA was conducted in order to assess theoretical correlates of group membership that arise when examining the clinical multidimensional profiles of youth entering care. (See Figure 2 for an overview of the planned analysis indicator variables and covariates.). LCA is a model-based method that classifies individuals by using observed variables as indicators of a latent categorical variable that represents mutually exclusive subgroups within the data (Keller, Cusick, and Courtney, 2007; Romano, Zoccolillo, & Paquette, 2006). LCA was deemed a suitable cluster analysis model for this data as LCA allows for both categorical and continuous indicator variables. This analytic approach draws from previous data on latent class analysis on this population, specifically the work of Keller, Cusick, and Courtney (2007), McCrae, Chapman, and Christ (2006), Pears, Fisher, and Kim (2008), and Romano, Zoccolillo, and Paquette (2006). Given the exploratory agenda of LCA results, prior distribution or structure assumptions are not required in advance (Shao, Liang, Yuan, & Bian, 2014). However, adequate model fit is a prerequisite for LCA class selection, before specific classes can be evaluated. Model fit is demonstrated by chi-square tests of independence; significant p-values ($\leq .05$) indicate a significant misfit between the model and the data (Vermunt & Magidson, 2005).

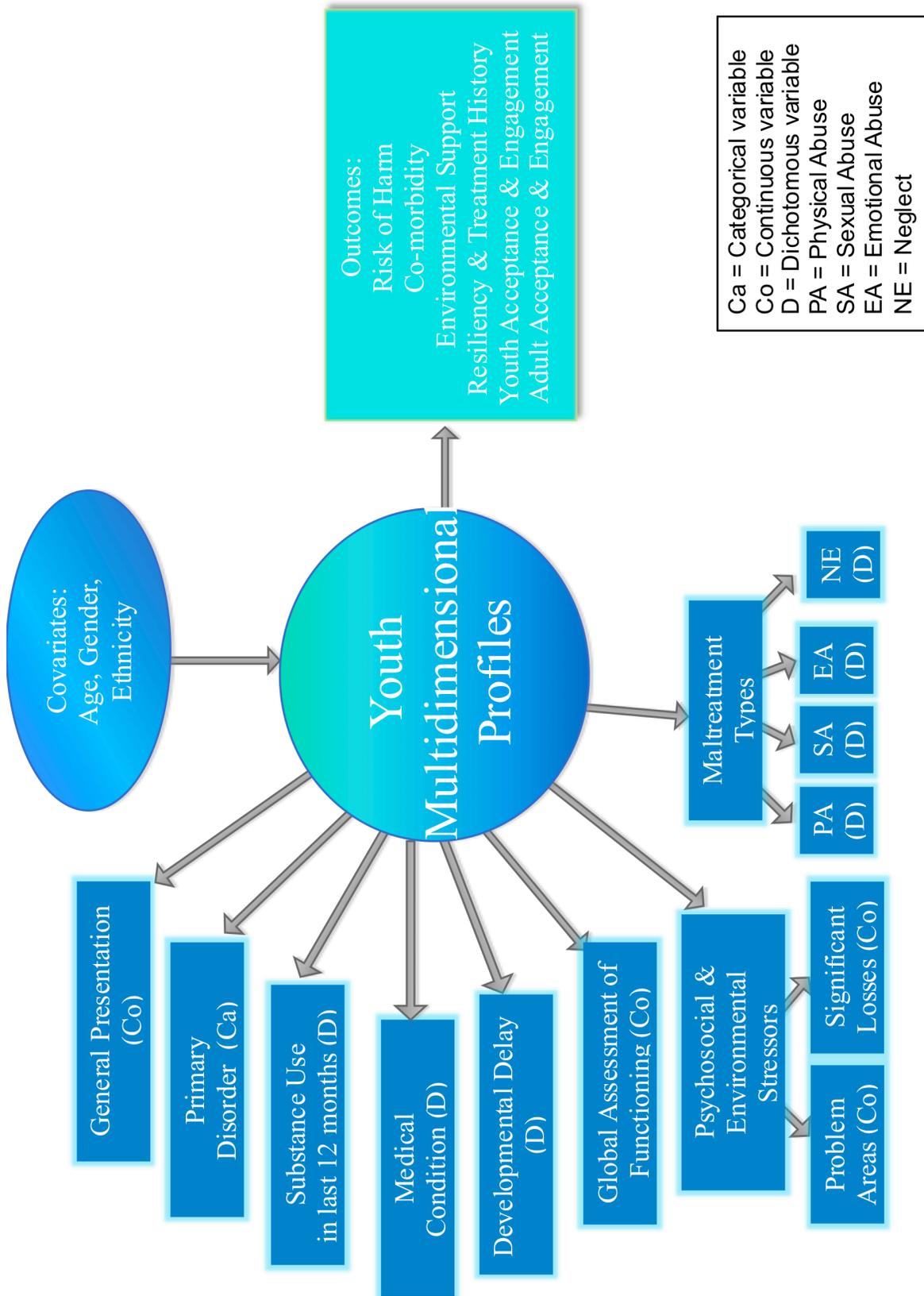


Figure 2. LCA prediction model: indicators, covariates, and outcomes

CHAPTER 4: RESULTS

Altogether, records were reviewed and coded for a total of 185 variables representing child/family/maltreatment background characteristics and outcome measures (see Appendix B for an overview). In the original proposal, a combined total of eighteen postulated predictor variables and two outcomes variables were named within hypotheses 1 and 2; an additional nine indicator variables and seven outcomes variables were specified within hypothesis 3. The other 149 coded variables included exploratory variables (e.g., concurrent sibling removal, sexualized behavior, and birth order), as well as alternate views or further break down of hypothesized variables (e.g., maltreatment was recorded as individual subtypes experienced, total number of subtypes experienced, active-passive categorizations of maltreatment experienced, and direct abuse experienced). The following results include hypothesized and exploratory variables.

Research Question 1: How do baseline case characteristics (child and family demographics, child characteristics, parent characteristics, and child maltreatment experiences) relate to global functioning scores at intake?

Intake CGAS scores were available for 256 youth (78.3% of selected cases), with scores ranging from 45 to 91. The mean global functioning score was 69.23, with a standard deviation of 7.73; this is in the range of at-risk functioning and suggests presence of an emotional/behavioral problem (Bird et al., 1993; McCabe et al., 2003). When looking at the predefined categorical cut-off scores, 90 youth (35.2%) fell within

normal functioning with scores >70; 135 youth (52.7%) fell in the at-risk range of functioning with scores 61-70; and 31 youth (12.1%) had scores \leq 60, placing them in the clinical impairment category.

For hypothesis 1, to identify factors that impacted ratings of functionality at the time of home removal, coded intake variables were pre-tested for significant relations to a youth's CGAS scores. Among continuous and dummy-coded child/family/maltreatment/intake variables there were pre-tested, fifteen variables significantly correlated with continuous CGAS scores: race/ethnicity (Caucasian, non-Hispanic; -), having one or more general medical conditions (-), special education status (-), speech problems (-), history of maltreatment (self and/or sibling; +), history of direct abuse (self-only; -), direct history of sexual abuse (-), self and/or sibling history of sexual abuse (-), history of other-classified abuse (-), total number of active maltreatment types experienced (-), total number of psychosocial/environmental problems (-), past ideation of harm to self or other (-), past attempt of harm to self or other (-), negative emotional presentation at time of removal (-), and the perceived risk level of harm to self or other (-). See Table 7 for a list of significant correlations between CGAS scores and pre-tested variables. In addition, six categorical variables with three or more subgroups showed significant CGAS score discrepancies within one or more subgroup pairings.

These included developmental stage groups, school grade levels, formal schooling placement (school level combined with enrollment status), primary residence

Table 7.

Correlational Relations Between Potential Predictors to CGAS Scores and CASII Composite Scores

| Variables | Spearman's Rho Correlation | |
|--|----------------------------|----------|
| | CGAS | CASII-CS |
| Gender | – | -.16* |
| Race/Ethnicity (Caucasian, Non-Hispanic) | -.18** | – |
| Special Education Status | -.17** | – |
| Speech Problems/History of Speech Delay | -.27** | – |
| Known Prior Family Involvement with CPS | – | .18* |
| Concurrent Sibling Removal | – | -.17* |
| Negative Presentation at Time of Removal | -.18** | .18* |
| <i>History of</i> | | |
| General Medical Condition | -.22** | – |
| Maltreatment (Self and/or Sibling) | .13* | – |
| Direct Abuse (Self) | -.19** | .21* |
| Sexual Abuse (Self) | -.15* | – |
| Other-Active Abuse (Self) | -.19** | – |
| Past Suicidal/Homicidal Ideation | -.17** | .17* |
| Past Suicidal/Homicidal Attempt(s) | -.18** | – |
| Sexualized Behaviors | – | .24** |
| <i>Total Number of</i> | | |
| Active Maltreatment Subtypes Experienced | -.19** | – |
| Psychosocial Problems Areas/Significant Losses | -.17** | – |
| Currently Perceived Risk Level of Harm to Self/Other | -.28** | .18* |
| CGAS Score | – | -.48** |

Notes. CGAS = Children's Global Assessment Scale; CASII = Child and Adolescent Service Intensity Instrument; CASII-CS = CASII Composite Score; * $p \leq .05$; ** $p \leq .01$.

post-removal, perceived youth insight at the time of removal, and classification of active/passive maltreatment histories. See Table 8 for a list of significant group differences within these categories. When all aforementioned, pre-tested significant variables were entered into a regression model, these variables significantly predicted

Table 8.

Significant Categorical Group Differences Between Potential Predictors to CGAS Scores and CASII Composite Scores

| Variables | CGAS | | CASII-CS | |
|--|----------|-----------|----------|-----------|
| | <i>t</i> | <i>df</i> | <i>t</i> | <i>df</i> |
| Developmental Stage | | | | |
| Early Childhood<Middle Childhood | 1.98* | 96 | – | |
| School Grade Levels | | | | |
| Grades 4-6<Grades 9-12 | 1.96* | 47 | – | |
| Grades 7-8<Grades 9-12 | 2.72* | 50 | – | |
| School Placement (Level/Enrollment) | | | | |
| Enrolled Middle School<Enrolled High School | 2.29* | 43 | – | |
| Un-enrolled Middle School<Enrolled Elementary School | 2.69* | 11 | – | |
| Un-enrolled Middle School<Enrolled High School | 3.23** | 10 | – | |
| Enrolled High School< Un-enrolled Middle School | – | | 2.32* | 12 |
| Primary Residence (Post-removal) | | | | |
| Foster Home<Relative Placement | 2.48** | 113 | – | |
| Foster Home<Group Home | – | | 2.34* | 43 |
| Relative Placement<Group Home | – | | 2.56* | 30 |
| Perceived Insight at Time of Removal | | | | |
| Poor<Good | 2.51* | 50 | – | |
| Fair<Other | 2.15* | 61 | – | |
| Poor<Other | 3.02** | 57 | – | |
| Active/Passive Experience-Types (Self) | | | | |
| Active and Passive<Passive Only | 3.04** | 243 | – | |

Notes. Results based on equal variances not assumed; CGAS = Children's Global Assessment Scale; CASII = Child and Adolescent Service Intensity Instrument; CASII-CS = CASII Composite Scores; *df* = degrees of freedom; * $p \leq .05$; ** $p \leq .01$.

CGAS scores, $R^2 = .44$, $F(20, 106) = 4.21$, $p < .001$. After manually removing predictors

with p values $> .10$ one-at-a-time (in order of highest p value) through a backward

elimination stepwise procedure, seven predictor variables remained (see Table 9):

race/ethnicity ($\beta = -.25$, $p < .00$) having one or more general medical conditions ($\beta = -.21$,

$p = .10$), speech problems ($\beta = -.27$, $p < .00$), school grade levels ($\beta = .12$, $p < .00$), history

Table 9.

Multiple Regression Analyses Predicting Behavioral Health Level of Need as Measured by CGAS Score and CASII Composite Score as Designated at Intake

| Regression Model | <i>B</i> | <i>SE B</i> | β | <i>p</i> |
|--|----------|-------------|---------|----------|
| Predicting CGAS values ^a | | | | |
| Race/Ethnicity (Caucasian, Non-Hispanic) | -3.90 | 1.08 | -.25 | .00** |
| History of a General Medical Condition | -3.8 | 1.30 | -.21 | .10 |
| Speech Problems | -5.59 | 1.44 | -.27 | .00** |
| School Level | .86 | .51 | .12 | .00** |
| History of Maltreatment (Self and/or Siblings) | 4.06 | 1.89 | .15 | .03* |
| Negative Presentation at Time of Removal | -1.88 | 1.11 | -.12 | .09 |
| Risk Level of Self/Other Harm | -8.10 | 1.77 | -.33 | .00** |
| Predicting CASII-CS values ^b | | | | |
| Gender | -.92 | .43 | -2.16 | .03* |
| Prior Family Involvement with CPS | .89 | .43 | 2.10 | .04* |
| History of Sexualized Behaviors | 2.30 | .80 | 2.87 | .01* |
| Sibling Removal | -1.22 | .51 | -2.39 | .02* |
| Primary Residence (Post-removal) | .15 | .07 | 1.98 | .05* |
| CGAS Score | -.18 | .03 | -6.42 | .00** |

Notes. ^a $F(7,142) = 11.64$ ($p < .001$), $MSE = 6.43$, $R^2 = .37$; ^b $F(6,113) = 11.22$ ($p < .001$), $MSE = 2.28$, $R^2 = .37$; CGAS = Children's Global Assessment Scale; CASII-CS = Child and Adolescent Service Intensity Instrument – Composite Score; *B* = unstandardized coefficients; *SE B* = standard error of *B*; β = standardized coefficients; * $p \leq .05$; ** $p \leq .01$.

of maltreatment (self and/or siblings; $\beta = .15$, $p = .03$), negative emotional presentation at the time of removal ($\beta = -.12$, $p = .09$), and perceived risk level of harm to self or other ($\beta = -.33$, $p < .00$). All overlapping variables related to maltreatment experiences and school level excuse one in each category (self and/or sibling maltreatment history and school grade levels) were dropped during the backward elimination procedure; accordingly, there was no evidence of multicollinearity in the final model. Together these predicted CGAS scores, $R^2 = .37$, $F(7,142) = 11.64$, $p < .001$, with race/ethnicity,

medical conditions, speech problems, maltreatment history, and risk level contributing unique variance in predicting a CGAS scores.

Research Question 2: How do baseline case characteristics (child and family demographics, child characteristics, parent characteristics, and child maltreatment experiences) relate to initial composite service intensity scores?

Of the 265 age-eligible youth (refer to Figure 1), 141 youth (53%) had available CASII scores within their client records. The CASII Composite Scores within this sample ranged from 7 to 19, with a mean of 13.05 and a standard deviation of 2.83. In observing how these scores translate into levels of care, the sample distribution of Level of Service Intensity (CASII-LSI) scores was as follows: 22 youth were at Level Zero – Basic Services for Prevention and Maintenance (15.6%), 44 youth were at Level One – Recovery Maintenance and Health Management (31.2%), 65 youth were at Level Two – Outpatient Services (46.1%), and 10 youth were placed at Level Three – Intensive Outpatient Services (7.1%). No youth within this sample received CASII-LSI scores at Levels Four through Six. See Table 10 for an overview of CASII rating statistics for this sample.

The same potential child/family/maltreatment intake variables in addition to CGAS scores were pretested to assess the bivariate relations to CASII Composite Scores. A total of nine variables significantly related to CASII Composite Scores (see Table 7): gender (female; -), prior family involvement with CPS (+), concurrent removal of siblings (-), negative emotional presentation at the time of removal (+), direct abuse

Table 10.

CASII Outcomes.

| CASII Score | Range | | \bar{x} | sd |
|---|---------|---------|-----------|------|
| | Minimum | Maximum | | |
| Dimension Ratings | | | | |
| 1. Risk of Harm | 1 | 5 | 1.51 | .68 |
| 2. Functional Status | 1 | 4 | 1.70 | .63 |
| 3. Co-Morbidity | 1 | 3 | 1.40 | .56 |
| 4. Recovery Environment | - | - | - | - |
| a. Environmental Stress | 1 | 4 | 2.30 | .78 |
| b. Environmental Support | 1 | 4 | 1.89 | .65 |
| 5. Resiliency and Treatment | 1 | 3 | 1.89 | .60 |
| 6. Acceptance and Engagement | - | - | - | - |
| a. Child/Adolescent | 1 | 5 | 1.90 | .67 |
| b. Parents/Primary Caretaker | 1 | 5 | 2.25 | .98 |
| Composite Score ^a | 7 | 19 | 13.05 | 2.83 |
| Level of Service Intensity ^b | 0 | 3 | 2.04 | .84 |

Notes. $n = 141$; CASII completed only on children within the samples that were ages 6 years and older; CASII = Child and Adolescent Service Intensity Instrument; ^a Composite Scores are based on the summation of dimensions 1, 2, 3, 5, and the higher of the two scores with dimensions 4 and 6, combining a total of six sub-scores; ^b Level of Service Intensity determinations are based off of Composite Scores.

experienced (+), past ideation of harm to self or other (+), history of sexualized

behavior (+), perceived risk level of harm to self or other (+), and intake CGAS score (-).

Two additional categorical variables (having three or more subgroups; see Table 8)

showed significant discrepancies on average CASII Composite Scores within one or

more subgroup pairings: formal schooling placement (school level combined with

enrollment status) and primary residence post-removal. These pre-tested, significant

variables were entered into a regression model and significantly predicted CASII

Composite Scores, $R^2 = .42$, $F(11, 100) = 6.51$, $p < .001$. Once variables that did not

predict the criterion at $p \leq .10$ were manually removed in a stepwise fashion, the

following six predictor variables remained (see Table 9): gender ($\beta = -2.16, p = .03$), prior family involvement with CPS ($\beta = 2.10, p = .04$), history of sexualized behavior ($\beta = 2.87, p = .01$), concurrent removal of siblings ($\beta = -2.39, p = .02$), primary residence post-removal ($\beta = 1.98, p = .05$), and CGAS score at intake ($\beta = -6.42, p < .00$). Combined, these variables significantly predicted CASII-LSI, $R^2 = .37, F(6,113) = 11.22, p < .001$. All variables within the final regression model made a unique contribution to the overall model; there was no evidence of multicollinearity in the final regression model.

Research Question 3: Can distinct classes of youth entering foster care be identified based on observed dimensions of clinical assessment outcomes and maltreatment history?

Latent class analysis was used to explore the concept of naturally occurring clustering of youth entering foster care based upon key background and demographic identifiers. The subset of youth entering foster care, ages 6-16 years, with available intake CASII ratings equaled 141 (53.2% of cases) clients. The indicator variable youth substance use was dropped from the model due to only three youth (<2%) having record of substance use within the past year in their intake report. The remaining hypothesized indicators (primary disorder, general presentation, number of psychosocial/environmental stressors, CGAS scores, and history of a medical condition, a developmental delay, physical abuse, sexual abuse, emotional abuse, and neglect) were entered along with demographics (age, gender, and ethnicity).

LCA models were run by concurrently testing for a one- through eight-class

models, beginning with testing for goodness-of-fit. Goodness-of-fit testing was conducted to assess the probability of mistakenly rejecting the null hypothesis; the null hypothesis of the independence assumption is to be rejected if the p -value is less than the significance level for α (.05). See Table 11 for model fit information for each exploratory class model.

Table 11.

Model Fit Information for Latent Class Analysis

| Number of Classes | Model Output | | | | Chi-Square Statistics | | |
|----------------------|--------------|----------|---------|----------------|-----------------------|------------------|---------|
| | Npar | LL | BIC | Class. Err. | L ² | df | p-value |
| 1 | 20 | -1112.11 | 2323.19 | .00 | 1828.12 | 121 | <.0001 |
| 2 | 43 | -1048.24 | 2309.27 | .04 | 1700.39 | 98 | <.0001 |
| 3 | 66 | -1000.71 | 2328.05 | .04 | 1605.35 | 75 | <.0001 |
| 4 | 89 | -978.80 | 2398.03 | .06 | 1561.51 | 52 | <.0001 |
| 5 | 112 | -948.04 | 2450.34 | .04 | 1499.99 | 29 | <.0001 |
| 6 | 135 | -918.55 | 2505.19 | .04 | 1441.02 | 6 | <.0001 |
| 7 | 158 | -896.61 | 2575.13 | .03 | 1397.14 | -17 ^a | – |
| 8 | 181 | -886.18 | 2668.08 | .05 | 1376.27 | -40 ^a | – |

Notes. Npar = number of parameters; LL = log likelihood; BIC = Bayesian information criterion based on LL; Class.Err. = proportion of classification errors; L² = likelihood-ratio goodness-of-fit value; and df = degrees of freedom; ^aA negative degrees of freedom indicates that the model contains more parameters than cell counts.

Models with one through six classes had significant test statistics ($p < .001$). This suggested that the latent classes within these models inadequately account for heterogeneity across individuals in this sample (Lanza & Rhoades, 2013). Models with seven through eight classes resulted in negative degrees of freedom, indicating that the model contains more parameters than cell counts. As this fails to meet a necessary requirement for identification of the parameters of a latent class model, p -values were

not identified for these models and a model with fewer latent classes should be used (Vermunt & Magidson, 2005). Hence, across all models, chi-square tests indicated a substantial misfit between the model and the data (van Kollenburg, Mulder, & Vermunt, 2014); therefore, model fit for the collected data were inadequate.

As this analysis was conducted to address an exploratory aim, and given unexpected challenges with the data – (a) diminished sample size due to missing CASII outcome data and (b) one of the two continuous variables (number of psychosocial and environmental stressors) having less than the preferred range of 20 values – alternate approaches to LCA that were proposed in the manufacturer’s Latent GOLD tutorials were conducted. The first included a shift from a mixed model of categorical and continuous variables to exploration of a simple LC cluster model using categorical data only (i.e., continuous input variables transformed to categorical options; see Table 12). Second, a weighted model of the original data (based upon frequency of report patterns, with demographic and background variables combined) was entered. Neither alternative pathway produced a model with adequate fit, as *p* values of the chi-square tests of independence remained significant. Since these explorative results indicated inadequate fit for the data, the analytic process was concluded.

Table 12.

*Transformation of Continuous Variables Into Categorical Data for Alternative LCA Model**Approach*

| Variable | Continuous Measure | Categorical Transformation |
|---|---|---|
| Age | Continuous measure in years, ranging 6-16 | Categorized by developmental stage group: early childhood = ages 4-5 years middle childhood = ages 6-8 years preadolescence = ages 9-12 years adolescence = age 13+ years |
| Psychosocial/ Environmental Stressors | Continuous measure of sum total, ranging from 1-8 stressors | Total number clustered based on frequency to best represent quartiles of distribution: 1-2 stressors 3 stressors 4 stressors 5-8 stressors |
| CGAS | Continuous scale, ranging 1-100 | Predefined categories of: ≤60 = Clinical Impairment 61-70 = At-Risk Functioning >70 = Normal Functioning |

Notes. CGAS = Children's Global Assessment Scale; CASII = Child and Adolescent Service Intensity Instrument.

CHAPTER 5: DISCUSSION

In this study, correlates of behavioral health service need indicators (namely, providers ratings on global functioning and level of service intensity need within 60 days of home removal) were examined from mental health records of a sample of 327 children entering the foster care system. This investigation differed from the previous literature in that more thorough background, presentation, and maltreatment information was obtained via mental health enrollment records and the data were collected from a southwest region that automatically enrolls children into behavioral health services upon home removal by child welfare services. Hence, this study offers a more in-depth and inclusive view of children entering foster care and their behavioral health service needs. In addition, having standardized intake forms that included a measure of global functioning (CGAS) and a level of care determination instrument (CASII) allowed for a more objective view of mental health needs upon entry into foster care. This chapter presents a summary of the findings of this study and a discussion about the implications of those findings, focusing on the hypothesized variables and significant exploratory variables. This chapter also addresses limitations of this study, practical implications of the data, and recommendations for future research.

Overview of Findings

The findings of this study support that a variety child and family background characteristics and maltreatment history, along with the child's presentation at the time of removal, contribute to a youth's service needs at the time of intake

(represented by youth's global functioning and service intensity scores). Mainly, these findings highlight the roles of child factors, maltreatment, and presentation at the time of removal in relation to global functioning and the roles of gender, removal circumstances, and preexisting risk factors in relation to service intensity needs at intake. Specifically regarding hypothesis 1, results demonstrated that school-age youth had lower global functioning at the time of intake if they were Caucasian, had past or present speech problems noted at intake, had at least one known general medical condition, were perceived by intake evaluators to have a higher risk of potential harm to self or other, and were removed for reasons outside of direct abuse. Educational groupings based upon grade level also played a role in global functioning ratings. With regard to hypothesis 2, the study found that being male, being the only child removed among a sibling set, demonstrating sexualized behaviors, having lower CGAS scores, having a past family involvement with CPS, and foster placement predicted higher CASII Composite Scores within the initial 60 days of removal. Results did not support the existence of naturally occurring clusters of youth entering care based upon observed dimensions of clinical assessment outcomes and maltreatment history.

Global Functioning at Intake

While a continuous scale ranging from 1-100, CGAS global functioning scores are described in groupings of ten points. The mean CGAS score of 69.23 for this sample falls within the 61-70 range, which is defined by the authors as follows:

Some difficulty in a single area but generally functioning pretty well (e.g.,

sporadic or isolated antisocial acts, such as occasionally playing hooky or petty theft; consistent minor difficulties with school work; mood changes of brief duration; fears and anxieties which do not lead to gross avoidance behavior; self-doubts); has some meaningful interpersonal relationships; most people who do not know the child well would not consider him/her deviant but those who do know him/her well might express concern” (Shaffer et al., 1983; pp. 1229).

Hence, the average child entering foster care is showing some difficulties within or across domains and, while generally functioning well during this transition, this range reflects persistent mild symptoms that are beyond expectable reactions to psychosocial stressors (Florida Department of Children and Families, 2004).

Child demographics. Caucasian/non-Hispanic youth were more likely to have lower ratings of global functioning. Other demographic variables were not significant, including age, gender, and primary language spoken. Hence, global functioning generally appears to be distributed equally across school-age children entering foster care.

Age. In line with previous findings (Green et al., 1994), this study found no significant correlation between CGAS and age were found in this study. This finding was consistent regardless of viewing age as a continuous variable or categorizing age by developmental stages of childhood. However, school level, which typically parallels age groupings as it views youth according to their grade level (K-3, 4-6, 7-8, 9-12), was found to significantly contribute to CGAS scores. Within school level groupings, youth

within grades 9 through 12 had the highest CGAS means. The trend for the middle-aged children (grades 4-6 and 7-8) having significantly poorer ratings of functionality compared to their high-school age counterparts is somewhat of a surprise in light of the literature on age-related resiliency for youth in foster care. Specifically, the National Child Welfare Resource Center for Family-Centered Practice (2013) found that youth ages 13 to 15 years were the most vulnerable age group of foster youth regarding poor coping skills and aggressive tendencies.

Gender. The findings of this study did not reflect significant differences on CGAS scores of functioning. As reviewed in detail in the literature review section, observations of gender-based outcomes among foster youth has been mixed. Within the realm of resiliency, some researchers observed males to be overall less resilient (DuMont et al., 2007; McGloin & Widom, 2001; and National Child Welfare Resource Center for Family-Centered Practice, 2003) while others found males and females who have experienced maltreated youth to be equally resilient (Arata, 2007; Jaffee et al., 2007). In addition, while not specific to the foster care population, Steinhausen and Metzke (2001) found that females demonstrated greater functional impairment than males among a subset of their sample of Swedish adolescents who were recently engaged in psychiatric guidance clinics. Hence, Steinhausen and Metzke (2001) concluded that the females who are symptomatic at a level warranting a psychiatric diagnosis may present with more severely disturbed functionality. When viewing the above research observations in light of having inadequate data on specific mental

health disorders for this sample, there may be an interaction between maltreatment history, gender, and psychiatric diagnosis. Therefore, future research should continue to examine gender-based differences in functional outcomes for youth in foster care. Particularly, it would appear to be beneficial if global functioning and related service needs could be studied in a sample of foster youth who have primary DSM diagnoses that reflects psychiatric symptomology rather than diagnostic codes specific to being a victim of maltreatment.

Race/Ethnicity. This study found that being Caucasian/non-Hispanic was a predictor of decreased rates of functioning on the CGAS. The outcomes of this study are concurrent with Hernandez's (2002) finding that both Caucasian and Hispanic youth entering foster care received CGAS scores that merited mental health treatment, but that Caucasian youth demonstrated significantly lower CGAS scores than Hispanic youth. However, other studies have found mixed results when observing cultural aspects and risk or resiliency factors in this population. For example, adolescent Caucasian youth have previously been shown increased resiliency over their non-Caucasian counterparts (DuMont et al., 2007), yet coming from a home where English was not the primary language has been associated with decreased rates of reentry into care (Connell et al., 2007; Kimberlin et al., 2009). Hence, additional research is needed to better clarify trends among racial background and function-based service needs among foster care youth, especially when recidivism is taken into account.

Family characteristics. Regarding family-related variables, both the total

number of psychosocial/environmental problems in the home environment and previous family involvement with CPS were significantly correlated with CGAS scores at the bivariate level. Unexpectedly, the specific occurrences and total number of parental risk factors as well as the number of caretakers were not found to have a significant relationship with CGAS scores.

Parent- and community-based risk factors. Beyond maltreatment experiences, additional parental risk factors were observed in this sample including parental alcohol abuse, substance abuse, serious mental illness, domestic violence, and parental incarceration. Although hypothesized, the total number of risk factors per child examined in this study did not significantly relate to the functionality of youth in this sample. These findings are not in line with previous research that has demonstrated a link between parent criminal history and the number of accumulative parental risk factors to lower CGAS scores (Hernandez, 2002) or poverty, alcohol and violent behavior of the parent with increased maladaptive behavior in children and adolescents (Lahey, Walman, & McBurnett, 1999). One potential issue that could have impacted the observations of associations between parental risk factors and functional ratings is the source of report, given that data in this study was provided through CPS investigative documents and youth self-report. Still, research pertaining to the impact of parental risk factors on general functioning and psychopathology among children in foster care is very limited and should be further evaluated in the future, particularly when parent report can be obtain in addition to other sources.

It is important to consider the possibility that additional risk factors unexamined within this study could better predict or further contribute to predicted ratings of functionality in foster care youth. For example, the inability to collect specific information pertaining to the home of origin (e.g., SES, parental support, community violence, and family and community stress levels) may have stilted results as these family characteristics have been shown to relate to general outcomes and recidivism of youth involved in child welfare services (Connell et al., 2007; Dozier et al., 2001; Kimberlin et al., 2009). These findings may also reflect the incompleteness of data known about a child at intake. For example, an intake conducted with a child and their foster parents may provide extremely limited information pertaining to a parent's criminal background, caretaker psychiatric and substance use history, family income. Hence, further research is needed to identify the specific risk factors relating the parents, family-unit, and communities of origin so that child welfare investigators and other potential informants can work to obtain and provide that information to any provider evaluating a child's risk and service needs.

Psychosocial/environmental stressors. The total number of psychosocial problems and environmental stressors (recorded under Axis IV within intake DSM-IV diagnostic summaries) was found to significantly correlate with CGAS scores at the bivariate level. This variable takes into account additional and broader problem areas than the above stated parental risk factors such as educational problems, job loss, housing problems, interaction with legal system, and divorce. Taken together with the

above study outcomes on parental risk factors, the findings appear to suggest that the cumulative effect of family-based, parental, community, and individual stressors better predict deficits in functioning compared to the evaluation of singular stressors or risk factors specific to parental action and circumstances. This would align with conclusions by Jaffee and colleagues (2007) that resiliency for maltreated youth likely depends on the collective stressors present within a child's environment.

Interestingly, Feeny et al. (2009) did not find family functioning or conflict variables reported by the teenage sample or their parents to be meaningfully associated with CGAS scores. An important distinction between the work of Feeny et al. and this study is that the sample examined in this study included of a greater age range of youth, broader areas of conflict or tension within a family unit, and data from multiple informants beyond self- and parent-report (e.g., CPS investigative documents and foster parent interviews). This suggests that having information beyond first-hand reporting of family stressors and having a wider lens of contributing family stressors may better identify the cumulative effect of family and environmental stressors. More research is needed to help clarify this issue and can potentially help to identify if specific psychosocial stressors more severely impact a child's functionality.

Number of caretakers. Coming from a single parent home was hypothesized to relate to functional ratings given the research that children in the general population from single parent homes demonstrate poorer schooling and treatment outcomes and more maladaptive behavior than their counterparts from two-parent homes (e.g., Lahey

et al., 1999; Lundahl, Riser, & Lovejoy, 2006; Musick & Meier, 2010). However, the number of caretakers was not found to differentiate CGAS scores. This may suggest that the impact of multiple additional risk factors and environmental stressors that are commonly present in the lives of children prior to entering foster care negate the impact of coming from a single parent household. In other words, the differentiation may become absent among children living with one or two caretakers for youth entering foster care when there has been a generally high level of family and household stress. More research should be conducted, particularly to examine the longitudinal impact of having one versus two caretakers present in homes of origin as well as foster homes on global functioning, while taking into account the length of time in foster care and placement mobility.

Prior CPS involvement. Although the number of previous CPS referrals was unable to be collected as originally planned, having a known history with CPS was collected and significantly related to CGAS scores. The majority of available research on prior involvement pertains to contributors of re-entry versus the impact of re-referral, re-involvement, or re-entry on a youth's general functioning. Still, past literature has indicated that children with multiple entries into foster care demonstrated poorer outcomes while in foster care and increased psychological, social, and interpersonal problems later in life (Graham et al., 2010; Nelson et al., 1993). This research has added to that research by demonstrating a difference in global functioning specifically during the intake period and further identifying children re-entering foster

care as a high risk group. Still, additional research that could look at global functioning in light of the specifics of re-entry may better identify which components of recidivism into care place a child at greater risk for poorer outcomes. Research examining cross-type recidivism has begun to emerge in the literature (Graham et al., 2010; Jonson-Reid et al., 2003), yet remains minimal. It would be beneficial to understand the impact of factors such as the number of past CPS reports and home removals, whether returning home included the original caretaker or another adult (e.g., the other biological parent), developmental stage at each time of removal, and the specific reasons per removal (e.g., founded maltreatment types) on a child's functioning and related service needs.

Maltreatment experiences. An unexpected finding was the differentiation among children removed from their homes due to any form of maltreatment versus those removed for reasons that did not involve suspected abuse or neglect of themselves or their siblings. That being said, various maltreatment attributes were significantly and negatively correlated with ratings of global functioning at the bivariate level.

Attributes of maltreatment experiences. A history of sexual abuse (self and/or sibling) and other-classified abuse experiences were related to CGAS scores at the bivariate level. The relationship between sexual abuse and CGAS scores has previously been reported (Hernandez, 2002). That same study also found a relationship, although relatively weak, between physical abuse and CGAS scores, which was not replicated in

this study. Results of this study did not replicate past findings that link physical abuse, emotional abuse, and neglect to poor outcomes or impaired functioning at a singular subtype level (Arata et al., 2005; Hernandez, 2002; Kinard, 2004; Prino & Peyrot, 1994; Loos & Alexander, 1997; McGee et al., 1997; Moran et al., 2004; Mullen et al., 1996; Rosen & Martin, 1998; Widom & Kuhns, 1996). Looking at the number of subtype experiences did paint a different picture. Specifically, the total number of both active maltreatment and direct abuse subtypes were significantly related to CGAS scores at a bivariate level. This is in line with findings that youth who have endured polyvictimization demonstrate greater psychopathology or symptomatology (Arata et al., 2007; Holt et al., 2007).

Maltreatment experiences versus inadequate caretaking. Having experienced any form of maltreatment was positively correlated with CGAS scores, both at the bivariate level and within the linear regression model. In other words, those who entered care due to reasons outside of maltreatment had significantly lower CGAS scores than children who were at least partially removed due to maltreatment experiences. Examples of removal without a history of maltreatment would include entry into care due to the lack of an available caretaker who is willing and able to care for the child. For example, a caretaker may have been unable to care for child due to a significant medical condition, a serious mental illness, or incarceration. There may be unsafe conditions present within these cases that added to the decision to remove a child, such as domestic violence or parental substance use, but no record of known or suspected

incidents of abuse or neglect of the child or their siblings. Although a relatively low correlation and counterintuitive, these findings might reflect that youth who are solely removed due to inability of the caretaker to provide an adequately supervised and safe environment appear less able to cope during the initial period within foster care. This also might reflect that children who did experience one or more forms of maltreatment demonstrated higher general functioning early into foster care as they were removed from the environment (and possibly the perpetrator) of abuse or neglect. Meanwhile, children who did not experience maltreatment demonstrated lower functioning after being removed from their family of origin. Future research may need to examine risk factors that may be influencing the coping abilities of children removed solely due to parental inability to provide care.

Domains of functioning. Researchers have previously demonstrated functional disturbances upon children's entrance into foster care (Arata et al., 2007; Becker et al., 2006; Burns et al., 2004; Combs-Orme et al., 1991; Oswald et al., 2009). This study furthered the literature by identifying speech problems, having a general medical condition, and emotional presentation at removal as predictors of global functional impairment in a sample of youth entering foster care.

Mental health. Unfortunately, sufficient diagnostic data were not available within the intake records due to the overwhelming assignment of maltreatment-victim codes for DSM-IV Axis I diagnoses. Given the association of maltreatment with an expansive range of mental health issues (e.g., Arata et al., 2007; Blumberg et al., 1996;

Jaffee et al., 2007; Fang et al., 2012; McMullen et al., 2004), it would be beneficial if further research could clarify if meaningful associations exist between specific diagnoses or symptomatology and global functioning among foster care youth.

Outside of psychiatric presentation or diagnostic categories, aspects of a child's psychological presentation at intake were found to have implications for ratings of functional impairment. Specifically, being perceived as having a negative emotional presentation, decreased insight of removal circumstances, and potential for future harm to self or other were significantly and negatively related to CGAS scores at the bivariate level. This suggests that child observations and child report during evaluation have a notable impact on how an evaluator rates their overall level of functioning.

Physical health. The hypothesized variable of total number of general medical conditions was not significantly correlated with CGAS scores. However, having a known medical condition was indeed a significant predictor of global functioning. Past research has described a greater prevalence of chronic medical conditions and general health problems in foster care populations (Altshuler & Poertner, 2003; Chemoff et al. 1994; Dubowitz et al., 1992; Felitti et al., 1998; Hochstadt et al., 1987; Kendall-Tackett, 2002; Risley-Curtiss & Kronenfeld, 2001; Takayama et al., 1998) and have linked physical problems with higher placement mobility (Rubin et al., 2004) and reentry into foster care (Kimberlin et al., 2004). This study advances knowledge one step further by demonstrating a connection between having a known general medical condition and impaired general functioning. That being said, it is noteworthy that the biological

parent of youth were very rarely present for intake evaluations and hence medical history was typically limited to information provided via self-report, medical records from a physical examination conducted after entry into care, or CPS investigative data. It would be valuable to see if these findings are replicated in other samples of youth in foster care as well as to evaluate whether having access the youths' primary caretakers before home removal to obtain medical history and treatment from a more direct informant would impact findings.

Development. Having a developmental concern and the total number of known developmental problem areas were not correlated with CGAS scores, although this information again relied on child self-report or secondary sources. Interestingly, specifically having speech problems (past-noted or observed during the intake process by evaluating care coordinator) was a significant predictor. This is helpful in adding to previous data that has identified speech problems among the most common types of developmental problems observed in foster care populations (First & Palfrey, 1994; Leslie et al., 2003; Stahmer et al., 2005). As Green et al. (1994) demonstrated a link between global functioning and social competence, this finding also adds to the very limited data within this population by identifying a link between communication problems and impaired functioning.

Education. As hypothesized, having identified special education needs was correlated with scores of overall functioning at the time of enrollment, which is in line with previous research (Green et al., 1994). However, this relationship did not

ultimately contribute to the final regression model. This would suggest that the variance accounted for by special education status at the bivariate level is better explained by or counteracted when taking into account additional factors, such as possibly the impact of speech problems on global functioning. It is also possible that special education status is not readily available to providers during the initial entry period into foster care as may require school consultation or access to comprehensive school records, and hence, is not as heavily influential on initial ratings of functioning and the related behavioral health needs. Given that Evans (2001) found the majority of foster children demonstrated educational underachievement within the first 2 months of home removal, it may be that the identification of broader-based academic struggles is the more pertinent data to obtain rather than distinguishing between students who have demonstrated a need for special education evaluation and services.

Service Intensity Scores During Enrollment Period

When looking at CASII structure, the composite score is designed to pull for needs surrounding a youth's safety risk, functionality, co-morbidity, environmental impact, constitutional emotional strength, and service involvement. Innately, these outlined risk domains make sense for the purpose of evaluating service intensity needs and determining a corresponding level of care that will ideally meet those needs. The bivariate correlation analyses and multiple regression results of this study reflect varying components of these domains. More specifically, regression outcomes highlight that being male, having a known medical condition, having prior family history with

CPS, foster care placement (particularly placement in a group home), having observable sexualized behaviors, having significant problems functioning in at least one environment, and being the only child removed from home within a family unit increase the likelihood of having more intensive service needs. In other words, these indicators more readily predict youth who need higher levels of care within behavioral health services.

This sample of school-age youth entering the foster care system on average showed functional ratings in the at-risk range and had service intensity scores that landed on the cusp of the Recovery Maintenance/Health Management level of care and Outpatient level of care. When taking a whole perspective of this data, it indeed reflects a population in need, yet many of these youth would not likely have received behavioral services if not located in a region that requires mental health intake assessments within 60 days of home removal and automatic entry in behavioral health services. As covered in the research, mental health referrals are typically only offered to youth who are referred by a provider or voluntarily initiate services. Further, preschool-age youth, those who do not have histories of sexual and/or physical abuse, and ethnic minorities are under-referred and/or underutilize behavioral health services. Data from this study clearly do not exclusively highlight age, maltreatment types experiences, racial/ethnic identify, or behavioral presentation as contributors to service needs.

This sample represented an outpatient population, with CASII Composite Scores placing youth at the level of basic prevention and maintenance services through

intensive outpatient services. As noted in the Results section, this sample did not include youth placed at higher levels of care. Such higher levels reflect care needs that include more intensive integrated services than can be provided by outpatient mental health services and possibly 24-hour psychiatric monitoring. The lack of children with LSI scores for Levels Four through Six does not necessarily reflect an absence of such higher level needs within the population, but rather an absence within the youth who are directly referred for outpatient services as opposed to higher-level integrated or inpatient services during the intake process.

Child demographics. Males were more likely to have score that was commensurate with a higher service intensity level upon intake. Outside of gender, other demographic variables were not significant. Hence, service level determinations generally appear to be distributed proportionately across school-age children who are removed from their homes of origin.

Age. No significant relations were found between CASII Composite Scores and age-related variables. In a previous pilot study by the Minnesota Department for Human Services (2008) that examined children in the general population involved in mental health services. In contrast to this study, the authors of the pilot study reported a slight trend for older adolescents to have higher composite scores. Relatedly, research on the general youth population has observed that once involved in mental health services, older children use a greater number of services and are assigned to more restrictive levels of care (Foster, Saunders, & Summerfelt, 1996; Hodges, Doucette-

Gates, & Kim, 2000; Patrick, Padgett, Bums, Schlesinger, & Cohen, 1993; Realmutto, et al., 1992). As these previous findings reflect general population of youth in treatment programs ranging from outpatient to residential, it may be that foster care enrollment and/or exclusion to outpatient-level cases mitigate the association between age and service intensity needs.

Gender. The aforementioned statewide pilot study examining CASII scores in a population of youth in mental health services also found that males had higher scores (Minnesota Department for Human Services, 2008), which is paralleled in the current study. This is also in line with the findings of Holtberg (2014), which indicated that adolescent males in the general population had higher levels of externalizing at the outpatient level. However, Holtberg (2014) also found that adolescent females presented with greater internalizing problems at both outpatient and residential treatment settings. Holtberg (2014) concluded that problems among females may go unnoticed for a longer period than males, which leads to a greater severity of disturbance within presentation once these issues begin to emerge in an observable format. Given that the current study examined school-age youth specifically during the enrollment period into both foster care and mental health services, similar gender-specific trends could be occurring at this early stage of assessment. In such case, it could be expected that intra- and inter-group level of care needs would fluctuate over time during foster care placement.

Race/Ethnicity. Although CASII Composite Scores were not associated with

racial background in this sample, previous research among general youth in mental health services suggest otherwise. Specifically, the above pilot study (Minnesota Department for Human Services, 2008) found that youth in the general population that identified as Black and Native American tended to have higher CASII scores than youth who identified as White or Other. As reviewed in the limitations section below, the sample in the current study was mostly comprised of youth identifying as White or Hispanic; therefore, the distribution of racial backgrounds among this sample of foster care youth may have impacted the ability to discriminate differences in level of care determination by race and ethnicity. Further research should be conducted in this area, particularly given the observed trend in the literature that ethnic minorities underutilize or are under-referred for mental health services (Bui & Takeuchi, 1992; Garland & Besinger, 1997; Garland et al., 2003).

Family characteristics. Unfortunately, there is a scarcity of literature that has evaluated the predictive power or role of family characteristics into level of care determination or child-driven service needs. Hence, this study examined family-related factors in relation to level of care ratings. As hypothesized, prior family involvement with CPS services was correlated with intake CASII Composite Scores. However, other hypothesized family-specific variables were not significant; this included the number of caretakers and total number of psychosocial environmental stressors. Estimates of family socioeconomic statuses were not able to be collected given limitations of the data. Given that SES has been linked with general outcomes and re-entry rates for

youth involved with foster care (Connell et al., 2007; Kimberlin et al., 2009), the specific impact of poverty on level of care determinations should be explore in future research.

Psychosocial/environmental stressors. The lack of a bivariate connection between the number of psychosocial/environmental stressors (DSM-IV-TR Axis IV) and CASII Composite scores is interesting in itself. An a priori hypothesis of this study was that a relationship would exist between these two variables given how the CASII tool is designed to factor in the overall level of environmental stress as part of the combined rating score. Further, Jaffee et al. (2007) had previously reported that individual strengths distinguished resilient youth from non-resilient youth except in cases where children lived among high family and community stress. Given this link between environmental stress level counteracting personal strengths that promote resiliency, it seemed intuitive that a greater number of stressors present would relate to a higher dimension rating of environmental stress, which would then elevate composite scores.

There are several possible explanations as to why the accumulative effect of family and community stressors did not relate to CASII composite scores. Beyond simply discounting a relationship, one might consider the challenge in measuring these abstract variables for the purposes of research. It may be that the summative number of individual problems and stressors identified via the DSM-IV-TR Axis IV may not capture the concept of ‘environmental stress’ (i.e., a combined view of individual stressors does not necessarily capture the overall level of stress present in a youth’s

family and community). It may also be that ratings of environmental support and environmental stress in this population interplaying within the Recovery Environment dimension impacting the CASII Composite Score (i.e., the level of support present in a youth's environment counterbalances the level the stress). Finally, the lack of relationship may also reflect the mediating impact of variability within an evaluators' ability to identify the total number of psychosocial problems and environmental supports in a child's life and, hence, skewing observations of potential relationships. Ideally, future research in the arena will contribute to a clearer understanding of present psychosocial/environmental stressors to service intensity levels.

Number of caretakers. As mentioned previously in regard to CGAS-related outcomes, single-parent households have been linked to greater impairment and poorer school and treatment outcomes (e.g., Lahey et al., 1999; Lundahl et al., 2006; Musick, & Meier, 2010). As was the case with CGAS scores, CASII Composite Scores was unrelated to the number of caretakers at bivariate level. It would appear that the impact of having only one caretaker in the home are either absent, reduced, or overshadowed by the multitude of risk factors present, elevated presence of psychosocial-developmental difficulties, and high stress environments that are characteristics of this population (Becker et al., 2006; Cicchetti, 2013; Craven & Lee, 2010; Fantuzzo et al., 2003; Garland et al., 1996; Little et al., 2011; McKellar, 2004; Pynoos et al., 1999; Webster & Hackett, 2007).

Prior CPS involvement. Having a family history with child welfare services was a

significant predictor of service intensity ratings. Again, past researchers have observed poorer outcomes for youth who have endured multiple entries into foster care and/or experienced chronic maltreatment (Graham et al., 2010; Nelson et al., 1993). Although there is overlap between prior involvement and re-entry (e.g., any child who was previously removed would have a family history of involvement with child welfare services), there is an important distinction between the two. Prior CPS involvement includes any known history of substantiated CPS reports, child welfare referrals, or child removals within the immediate family. Hence, this factor encompasses a greater range of historical events and focuses on the family rather than the child. This finding has made an important contribution by suggesting that youth with a known family history with CPS are viewed as needing more intensive services than children whose families have no known prior involvement.

Maltreatment experiences. As youth with more active maltreatment experiences (i.e., a history of physical and/or sexual abuse) are referred for mental health services at higher rates than youth who experienced passive-only maltreatment (i.e., emotional abuse and/or neglect; Burns et al., 2004; Garland et al., 1996), it was hypothesized that having experienced active maltreatment subtypes would be correlated with a greater intensity scoring for service planning. However, there were no significant group differences between youth who experiences active-only, passive-only, or both active-passive maltreatment. In fact, when looking at the distribution of group sizes among maltreated children, only 4% had experienced active-only maltreatment

with the remaining 96% being approximately split between those with passive-active experiences and those with passive-only experiences given that neglect was so highly prevalent among this sample. Therefore, it would appear that children with physical and/or sexual abuse histories have experienced polyvictimization rather than distinguishing between active and passive maltreatment histories.

That being said, a notable distinction exists when examining an alternate categorical view of maltreatment subtypes, direct abuse histories. Direct abuse examines abuse that specifically targets a child as opposed to experiencing neglect in caretaking and emotional support or more indirect experiences of maltreatment (e.g., observing domestic violence or parental substance abuse). To clarify, direct abuse differs from active abuse in that the term direct abuse includes other types of abuse than physical and sexual (e.g., emotional). Although this broader inclusion of abuse experiences did not ultimately contribute to the regression model, it suggests that child abuse in general, even if not in a physical or sexual manner, can be tied to service intensity ratings. Given the research mentioned in the previous section that supports that greater polyvictimization is associated with increased psychopathology or symptomatology (Arata et al., 2007; Holt et al., 2007), further exploration is warranted to view what additional factors may be moderating or suppressing the impact of direct abuse on service needs.

Removal factors. Factors related to the removal process (e.g., placement and sibling togetherness) were collected as exploratory variables; directional hypothesis

were not made a priori as there is a paucity of research in this area (Wulczyn & Zimmerman, 2005). Interestingly, concurrent sibling removal was negatively correlated with higher levels of care while having siblings placed separately was not. In addition, placement type was a significant predictor of level of care determination.

Placement type. The type of foster care placement, particularly placement in a group home, was significantly associated with CASII Composite Scores. This finding is in line with Iglehart's (1994) statement that children in group homes often reflect groups with special needs, more so than youth in foster homes or kinship care. Further, this findings is supported by previous research that indicated children in residential group placements demonstrate higher average levels of externalizing and internalizing problems and lower levels of adaptive skills than their peers in foster homes (Gabrielli, Jackson, & Brown, 2014).

It is possible that the limitation of not knowing the full extent of placement history during the initial 60 days of care (including number of placement changes, transitions between placement types, and length of stay at current placement in relation to intake assessment date) could have influenced observation of the full impact of placement type on CASII scores, particularly given the available research associating decreased placement mobility with better outcomes in foster care youth (Christian, 2003; Clausen et al., 1998; Kimberlin et al., 2009; Rubin et al., 2004).

Concurrent sibling removal and placement. Although the separation of siblings is thought to deprive children of these supportive relationships and is associated with

negative outcomes for children over the course of foster care placement (Grigsby 1994; Hegar, 2005; Leathers, 2005; Staff & Fein, 1992), only the separation of a child when one of more siblings remained in the home were found to impact levels of care within this study. In other words, the immediate impact of concurrent removal from the home but separate placement in foster care was not observed regarding levels of care. Still, the implications of single child removal on levels of care during the enrollment period is intuitive given findings that the separation of siblings during any point in foster care is linked to greater demonstration of emotional and behavior problems and poorer school functioning (Herrick & Piccus, 2005; Leathers, 2005). Furthermore, this finding is in line with the conclusions of Boer and colleagues (1995) that children who were singly removed from the home exhibited greater behavioral problems than children whose siblings were concurrently removed. As there are no additional known studies that have evaluated the presentation or service needs of youth who enter foster care while their sibling(s) remain in the home, this is an important contribution to the literature and highlights a particular risk group.

Domains of functioning. Youth in foster care characteristically present with an excess of challenges across domains of functioning and day-to-day health (Cook-Cottone, 2004; Davis et al., 2015; Lowenthal, 1998; Pynoos et al., 1999; Stone & Zibulsky, 2015; Viesel et al., 2015; Wulczyn et al., 2009). Separating out the longitudinal impact of home removal and foster placement, researchers have demonstrated functional disturbances upon children's entrance into care (American

Academy of Pediatrics, 2002; Arata et al., 2007; Becker et al., 2006; Burns et al., 2004; Combs-Orme et al., 1991; Oswald et al., 2009). Even so, the presentations within and across those domains vary greatly depending on the individual. Therefore, it was anticipated that variations and aspects of behavioral, mental, physical, and educational factors would relate to changes in the intensity level of behavioral health services required. Furthermore, the CASII tool specifically incorporates key aspects of cross-domain functioning within the Composite Score. These aspects include the following: ability to maintain personal safety and safety among others (Risk of Harm dimension), capability of performing at an age-appropriate level across roles in everyday life (Functional Status dimension); co-existence of disorders across medical, substance abuse, developmental disabilities/delays, and psychiatric domains (Co-morbidity dimension); and level of constitutional emotional strength and capacity for successful adaptation (Resiliency and Treatment History dimension; American Academy of Child and Adolescent Psychiatry, 2001). In other words, youth who maintain day-to-day functioning, continue appropriate developmental progress, are relatively healthy, and pose no or minimal threat to themselves or others are expected to score lower on the CASII and theoretically require less intensive services compared to children with impaired functioning in one or more of the aforementioned areas. After analyzing child background characteristics, this study identified CGAS ratings and a history of sexualized behavior as significant predictors of CASII Composite Scores. Having a medical condition, placement in special education, past thoughts of harm, and

substance use were hypothesized to relate to level of care scores given the assumption that these variables represented medical, educational, and substance-related needs which would relate to a ratings of a child's overall service intensity needs. However, youth substance abuse information was unavailable, suicidal/homicidal ideation was only significant at the bivariate level, and having a medical condition or special education needs were not significantly related to overall CASII scores.

Mental health. Youth in the general population with psychological disorders and functional impairments are more likely to use mental health services (Brannan, Helfinger, & Foster, 2003). Therefore, it was anticipated and shown with the findings of this study that CGAS scores, representing ratings of global functioning from a psychiatric viewpoint, were a significant predictor of CASII Composite Scores. This finding contributes to the field as past research has linked functionality and problem severity with increased service use, but not level of care determination (Dore, Wilkinson, & Sonis, 1992). Unfortunately, the lack of differential psychiatric diagnoses within the intake DSM-IV-TR diagnostic profiles (i.e., youth commonly having a primary code that reflected abuse or neglect rather than psychiatric symptoms) limited the ability to examine how mental health diagnoses might relate to CASII Composite Scores or the associated levels of care.

Sexualized behavior. Lanktree et al. (2008) demonstrated an association between child traumatic abuse and sexualized behavior (e.g., sexual symptoms and age-inappropriate sexual behavior). This study furthered this information by adding that

children who have been removed from their homes and display sexualized behavior are likely to need more intensive behavioral health services upon removal. In combination with previous research that has shown guidance on behavior management of sexualized behaviors to be an effective treatment when administered early in foster placement (Fisher, Gunner, Chamberlain, & Reid, 2000), it appears imperative to extend services immediately to youth with a history of sexualized behavior when entering care, both in order to meet their service needs and to implement effective timing within intervention.

It is noteworthy that the sample from this sample was primarily composed of White and Hispanic youth and that McCrae (2009) previously suggested a higher commonality of sexual behavior in these two groups compared to youth of other racial backgrounds from within the child welfare system. However, Friedrich and colleagues (Friedrich, Davies, Feher, & Wright, 2003; Friedrich, Fisher, Broughton, Houston, & Shafran, 1998; Friedrich et al., 1992) did not find racial differences in rates of sexualized behavior. Still, the generalizability of this finding can be questioned and additional research examining the association of sexualized behaviors and level of care determination among children in foster care representing different national regions and samples that include greater variability within race and ethnicity. McCrae (2009) also observed a decline in sexual behaviors over a 36-month period. Therefore, it is important to highlight that the finding of this study indicates sexual behavior as a predictor of higher service intensity ratings upon entry into care and that the predictive

quality of sexualized behaviors may diminish over time in foster care or time since maltreatment last occurred.

Physical health. As were the results with aim one, the total number of general medical conditions was not significantly correlated with CASII Composite Scores. This is surprising given the aforementioned inclusion of medical problems in the CASII Co-morbidity dimension, which contributes to the overall Composite Score. It would appear that neither the knowledge of a general medical condition nor the number of known medical conditions are not good indicators of service intensity needs at the time of home removal. As many youth entering foster care are in poor health and have likely have received insufficient routine medical care in the past (Leslie et al., 2003; Risley-Curtiss & Kronenfeld, 2001), this finding may more aptly reflect barriers to obtaining full medical history details at the time of intake. In illustration, given that many of the youth in this sample had medical screenings around the time of intake (during the enrollment period into care) and that the child's primary caregiver is typically absent from such meetings, this process could lend itself to a delay or absence of medical information being known at the time of intake. Alternatively, the lack of a relations may reflect that the number of general medical conditions does not necessarily reflect overall physical health or the perceived co-morbidity of medical problems in the multi-domain view of health that is incorporated into the CASII. Although behavioral health services and the related levels of care within services do not necessarily comprise medical care outside of care related to psychotropic medication management on a case-

by-case basis, the impact of medical frailty and health complications can impact a youth's mental health needs and psychological state of mind. Hence, including knowledge of a child's physical health and medical history remains an important part of the information gathering process for behavioral health care, even if it does not predict the level of care a child may need.

Education. While hypothesized to feed into portions of the CASII viewing multi-systemic needs and impaired functioning, special education placement was not a significant contributor to CASII Composite Scores at the bivariate level. Unlike medical conditions, education is not one of the four domains outlined within the CASII Co-Morbidity dimension. Even so, one could argue that the type of disabilities meeting criteria for special education services under the Individuals With Disabilities Education Act of 2004 (IDEA) would encapsulate children with medical, developmental, and psychiatric conditions which are targeted domains within this CASII risk dimension. Further, under CASII definitions, the term "school difficulties" is included as an example of disruption in family/social milieu within the Environmental Stress dimension. However, the only actual reference to "special education" lies within the Environmental Support dimension as an example of successful involvement in systems of care. This could be placing a positive association with special education status as a form of engagement in a system of care and evidence of services already in place that target a child's needs.

Overall, the inclusion of academic struggles and special education needs within

the CASII seems obscure at best. The lack of a relationship between special education status and CASII Composite Scores may represent the restraints of this measure, as the CASII does not appear to specifically promote consideration of educational needs within level of care determination. Alternatively, it may be that the umbrella of educational issues covered within a special education classification is too broad for the detection of risk factors relative to level of care determination. It would be beneficial if future research examining academics among foster care youth could differentiate outcomes among types of eligible diagnoses for special educational or the type of services received within individualized education programs. For example, future researchers could compare outcomes among youth within foster care receiving special education services who differ according to classifications of learning disabilities, emotional disturbances, speech or language delays, or health impairments.

Class Distinctions Upon Entry

Exploration analyses for latent classes were unable to be fully executed given the initial misfit between the data and model structures. However, this paralleled the disparities between the data collection plan and the actual data available for collection, as further described within the Limitations section below. It is suspected that the combination of data analysis design and diminished sample size due to missing data contributed to the inappropriate fit between data and hypothetical model classes. Therefore, while significant cluster analysis results were not discovered, it is believed that results were hindered by data collection limitations (see Limitations section).

Hence, group memberships based upon intake assessment data may still exist, potentially even within this sample.

Evaluation of Subgroups with Lower Referral Rates for Behavioral Health Services

Younger children, youth who experienced passive-only maltreatment, and non-Caucasian youth have been associated with lower referral rates for mental health services (Burns et al., 2004; Bui & Takeuchi, 1992; Garland & Besinger, 1997; Garland et al., 2003). Research has also demonstrated a link between kinship placement and reduced mental health problems among youth in foster care (Dubowitz & Sawyer, 1994; Iglehart, 1994; Shore et al., 2002; Vanschoonlandt et al., 2012). However, these variables were not found to significantly account for variance across indicators of service needs within this sample. Specifically, this study found that (1) age and active maltreatment experiences were not significant contributors to global functioning ratings and (2) age, maltreatment type, and racial background were not significant contributors to service intensity composite scores. This study also demonstrated, at the bivariate level among placement types, no significant differences in CASII Composite Scores between kinship and non-kinship foster care placement.

The bottom line appears to be that these children as a group are in need - not just those are old enough to comprehend the abuse or communicate their problems, have experienced what society views as horrendous or physically damaging maltreatment, are of certain cultural backgrounds, are placed with relatives once they

enter state care, or any other generalized exclusion. That being said, there appear to be certain background and removal characteristics largely unrelated to demographics that place school-age youth at risk for more extensive behavioral health needs. As outlined above, this study identified key variables that improve the accuracy of predicting service needs (through the lens of functionality ratings and service intensity placement scores) within a subpopulation of youth entering foster care. Clearly, the population of children entering foster care is vulnerable and requires their community's utmost assistance in helping them utilize inner resilience to combat the experiences that led them to home removal.

Limitations

Several limitations of the current study suggest caution be applied to the interpretation of findings. First, the data were from a retrospective study design, which lends itself to multiple disadvantages. This includes the reliance on secondary data sources from multiple providers, which can limit the accuracy and availability of information that can ultimately impact the validity and reliability of the results (Gearing, Mian, Barber, & Ickowicz, 2006; Kimberlin & Winterstein, 2008). Care coordinators who completed the intake forms received equivalent training through their Regional Behavioral Health Authority on intake and documentation procedures and research coders received equal training and conducted multiple analyses of inter-rater discrepancies for dually coded data. Still, it is important to recognize the impact of having multiple data collectors and coders on the reliability of data given the still-

existing potential for variations in clinical accuracy and data recording (Kimberlin & Winterstein, 2008). Further, even though the secondary data source included original mental health records, it should be recognized that the original aim for data collection was not for research purposes (Kimberlin & Winterstein, 2008). Therefore, the data were guided by an amalgamation of agency policies, provider training, provider preference, and reimbursement-driven codes and billing requirements

The restrictions of incomplete documentation within the records pool for this study presented barriers during data collection and coding and ultimately impacted the completeness of data gathered (Burns et al., 2004; Gearing et al., 2006). Restrictions included missing charts, unrecorded information within standard intake forms, and varying quality of information recorded by providers. For example, socioeconomic status and child substance use are two variables in particular that were sought after within this investigation as they have been previously linked to impact functioning and mental health outcomes. However, quantitative and qualitative data on these variables were essentially unavailable within the records despite being prompted for in aspects of the intake form. Further, some variables were inconsistently recorded within the logical order and/or location of intake records; this included prior involvement with CPS services, developmental concerns, general presentation characteristics, DSM-IV-TR Axes I and IV (clinical syndromes and psychosocial stressors), maltreatment experiences, and medical history. Lastly, CASII forms were missing within the paper records for almost half of the age-eligible clients, reducing the sample size for

hypotheses surrounding service intensity needs and potential latent classes presenting upon enrollment into foster care. Included within this limitation, is the nature of behavioral health intake records to be largely inclusive of self-reported information (by child or caregiver) and individual recall of historical data (e.g., a child's medical and developmental history), which can lend to recall bias within results.

While not necessarily a limitation per se, it is notable that the most recent revision of the DSM (from version IV-TR to version 5) discontinued the multi-axial system, which included Global Assessment of Functioning (GAF) scores (or CGAS scores for pediatric populations) under Axis V. Hence, it could be viewed that the use of CGAS scores within this study represents an outdated version of assessment. According to the American Psychiatric Association (APA, 2013), the GAF scale was removed from the DSM-5 due to a perceived lack of reliability and poor clinical utility. It is important to recognize that the CGAS is a separate scale, although still representing global assessment of functioning among youth. While interrater reliability has been demonstrated among appropriately trained professionals (e.g., Shaffer et al., 1983; Lundh et al., 2010), researchers have observed interrater reliability to be dependent upon rating experience, training and available data sources (Dyrborg et al., 2000; Lundh et al., 2010). Still, trained professionals understand that the *DSM* diagnostic method is one part of a comprehensive mental health evaluation (Kress et al., 2014). Further, APA (2013) as encouraged practitioners to utilize alternate means for evaluation and notation of distress, suicidal/homicidal risk, and functional impairment,

and to continue use of available standardized assessments for measuring symptom severity.

Another limitation was that the data were collected from a singular region within the State of Arizona, which comprised records on a largely Caucasian and Hispanic sample of youth. Regionally restricted data can impact the generalization of results and could have confounded results related to race and/or ethnicity and associated information such as primary language spoke in the home of origin.

An additional limitation surrounds the lack of sibling identification. Kinship data can be useful in analyzing psychometrics and in psychological research (Jensen, 1980). Sibling pairs did exist within this sample; however, the de-identification of records prior to data coding restricted the ability to examine siblings within this population. When available, the use of sibling data can serve a variety of purposes, such as being used as a covariate in statistically controlling for family background, for analyzing intra- and inter-family correlation, and detecting cultural variance among assessment tools between groups of siblings (Jensen, 1980). Further, the limitation of being blind to siblings within the sample means that certain family information (e.g., family size, sibling removal and placement, prior CPS involvement, and parental risk factors) was coded for each child within a family group. This is not to say that all family and maltreatment data would be the dually entered. For example, individual factors such as birth order, maltreatment experiences, biological relation to multiple in-home caretakers, and perpetrators of abuse vary even among children from the same home.

Still, the inclusion of family members presents a potential problem regarding a lack of statistical independence given that some responses by any linked participants (i.e., siblings) might be more similar to one another than from others in the sample (Knapp, 1998).

Finally, this study utilized backward elimination during a stepwise approach to regression modeling with listwise exclusion of missing cases. Given that this regression approach bases initial selection of input variables on having significant bivariate associations with the dependent variable, there is a heightened possibility of finding a larger magnitude within regression coefficients (Dallal, 2012). In addition, the nature of listwise exclusion combined with backward elimination means that an individual participant inclusion with the regression model may have fluctuated during the elimination process. Hence, participants may be dropped in the early elimination stages, but then re-entered in the final model after variables were selectively eliminated, or vice versa. This then would mean that the final model sample sizes (n) were based upon individuals that had data points for each variable included in the final regression models.

Practical Implications

The current doctoral project sought to examine the evaluation and treatment planning outcomes of children who are universally enrolled into behavioral health services at the time of their home removal. If results should be replicated within this population and combined with same-aimed research in other regions of the nation,

there are several practical implications for the behavioral health assessment among school-age children entering foster care.

The amount of recorded information within intake records, as variable as it was from record to record, was viewed as being valuable data in its own right. Although missing data are inconvenient for the purposes of population-based data collection and analyses, this information was originally collected for individual behavioral healthcare and not for research purposes. In a way, regardless of the impact of missing values, the completeness of records represent fluctuation in the amount of information available via child informants in combination with variations in a provider's assessment and documentation skill level. Ultimately, the amount of available data within the records reflects the basis for which intake evaluators were determining clinical impressions and treatment planning for a child. Data collection reports will be provided to the behavioral health agency, which can be valuable information regarding important contributors to service needs among the population they serve. The collection site will also receive information on the extensiveness of missing data and item-specific completion rates. Such information could potentially illuminate training needs, inform future documentation revisions, or impact decisions on alterations in future data collection approaches during the intake process.

The multi-axial system, which included global assessment of functioning, was discontinued during the latest update of the Diagnostic and Statistical Manual of Mental Disorders (DSM 5). However, the use of a multi-method, comprehensive

evaluation is still recommended in diagnostic profiling (APA, 2013; Kress et al., 2014). Hence, the CGAS and CASII instruments as well as other standardized assessments of impairment and level of care needs remain useful tools for helping providers assess impairment, risk, and severity of symptoms across a youth's environments and societal roles. Although maltreatment experiences have an intricate impact on youth and the individual consequences are not always readily understood or observable for the first-responding and early-evaluating providers, the discussed contributors to global functioning and service intensity scores can be identified through a throughout behavior health intake assessment. To express this in another way, collecting data on a youth's background (including medical history, educational history, and past suicidal or homicidal ideation or attempts) and making physical observations (such as functional communication and general emotional presentation) are important factors in understanding a child's immediate needs when entering the foster care system. Such data collection and observations take time and cannot feasibly be expected of providers who are untrained in psychological assessment, have extensive caseloads, and are primarily focused on establishing physical safety of a child versus their emotional recovery. Therefore, the call for adequate mental health assessments is valid and will provided the necessary persons with information, which this study demonstrates, is related to a youth's functionality and related service needs. That being said, adequate training on the use of standardized tools of assessment is key to reliable utilization (Dyrborg et al., 2000; Lundh et al., 2010).

Conclusions

Horowitz and colleagues (2000) concluded that community providers identify medical and educational needs of youth during enrollment periods into foster care, yet these providers fail to recognize their psychological and developmental needs. What appears to be the most illuminating study finding is that the average child automatically enrolled in outpatient behavioral health services at the time of removal showed functional ratings indicating impairments in at least one domain and level of care place requiring basic maintenance or brief counseling services. This highlights the need for support of these youth and suggests to involved persons (e.g., CPS caseworkers, behavioral health providers, schools personnel, child legal advocates, and foster parents) that children are vulnerable during the enrollment period into foster care and need both support in coping with their circumstances. Such support can be provided by utilizing assessment tools to obtain greater background information covering major domains of functioning: mental health, physical health, education, child development, and social relations. The CGAS and CASII instruments, along with a comprehensive behavioral health intake assessment, are just some of the tools that can assist involved personnel in learning more about the unique needs of a child entering care and how to best approach treatment and support services in order to address those needs.

There are considerable challenges presented within research that aims to access and examine children in the foster care system, yet continued research is demanded if

we are to adequately serve this vulnerable population (Craven & Lee, 2006). This is the only known study that has examined initial assessment outcomes of youth who have been universally provided with immediate services as part of routine care. As noted throughout this Discussion section, many gaps and mixed findings exist within the literature on service needs of youth in foster care. Because of the vast reports of risk factors and service utilization among this population, researchers need to continue the search for information that will educate community systems on the unique needs of this population, how individual and family-based characteristics impact life outcomes for youth removed from their homes, and how these youth present clinically. Further, while a daunting and complex responsibility on society, it is the duty of both Child Protective Services and community providers to take action in assisting youth entering foster care to recover from past traumatization and to achieve safety and general stability.

APPENDIX A.
UNIVERSITY IRB DETERMINATION.



Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://orcr.vpr.arizona.edu/irb>

HSPC Correspondence Form

Investigator: Roxanne Scott, Graduate Student **Department:** Disability & Psychoeducational Studies
Advisor: Michelle Perfect, Ph.D.
Project No./Title: 12-0793-16 Universal intervention for school-age foster children: How pre-removal characteristics predict behavioral health services.
Expiration Date: No Expiration

IRB Committee Information

Administrative Action **Administrative Review – New Project**
FWA Number: FWA00004218

Documents Reviewed Concurrently

F203 (signed 2012-09-16; revised 2012-09-20)
F107 (version 2012-09-20)
Site Authorizations:
 Casa
Data Collection Instruments:
 Abstraction

Determination

Not Human Subjects Research as defined by 45 CFR 46.102(f): As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that “human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, *or* identifiable private information.”

cc: Scientific/Scholarly Reviewer

Reminders: No changes to a project may be made prior to IRB approval except to eliminate apparent immediate hazard to subjects.

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T106: HSPC Correspondence Form
Form version: 09/14/2012



APPENDIX B.

OVERVIEW OF DATA COLLECTION VARIABLE DOMAINS.

| Child/Family Demographics | Child Characteristics | Caregiver(s) Characteristics | Child Welfare Involvement | Indicators of Service Need |
|----------------------------------|------------------------------|-------------------------------------|----------------------------------|---|
| Child | Education | Relation to Child | Prior CPS Involvement | Diagnostic Summary |
| Age (years/months) | Current Enrollment Status | Patterns of Risk* | Maltreatment* | Psychiatric Diagnoses |
| Gender | Education Level* | Alcohol Abuse | Subtypes Substantiated | Medical Conditions* |
| Race | Special Education Status | Substance Abuse | Polyvictimization | Psychosocial Stressors |
| Ethnicity | Developmental Issues* | Domestic Violence | Active/Passive Subtypes | Problem Areas |
| Family | Prior DDD Referral/Services | Serious Mental Illness | Direct/Indirect Subtypes | Significant Losses |
| Number of Children | Early Childhood Delays | Arrest History | Perpetrator(s) | Global Functioning (CGAS) |
| Number of Caretakers | Developmental Concerns | Death of a Parent | Child Presentation at Removal* | Service Intensity Estimate [†] |
| | Speech Problems | | Primary Residence | Risk of Harm |
| | Birth Order* | | Sibling Removal | Functional Impairment |
| | Arrest/Detention History | | Sibling Placement | Comorbidity |
| | Suicidal/Homicidal Behaviors | | | Recovery Environment |
| | Past Thoughts | | | Resiliency/Treatment History |
| | Past Attempts | | | Engagement & Acceptance |
| | | | | Total Rating Score (CASII) |
| | | | | Level of Care Placement |
| | | | | Risk Level of Harm to Self/Other |
| | | | | Mental Status* |

Notes. DDD = Department of Developmental Disability; CPS = Child Protective Services; CGAS = Children’s Global Assessment Scale; CASII = Child and Adolescent Service Intensity Instrument. A total of 185 variables were collected for this sample in addition to date references. Variables were obtained from the Demographics Form, Behavioral Health Core Assessment, Assessment Addendums, and CPS dispatch report. *These variables were coded dichotomously or categorical in addition to coding for subcomponents of the specified variable. [†]Measures of service intensity are only available for children six years of age or older.

APPENDIX C.

OVERVIEW OF HYPOTHESIZED VARIABLES FOR THE MULTIVARIATE REGRESSION
MODEL FOR GLOBAL FUNCTIONING.

Predictor Variables

Age of child (continuous; +)

Race/Ethnicity (categorical)

Gender (dichotomous)

Number of medical conditions (continuous; -)

Number of caretakers (categorical; +)

SES classification (categorical; +)*

Number of parental risk factors (continuous; -)

Number of psychosocial problem areas and environmental stressors (continuous; -)

Number of previous CPS referrals (continuous; -)*

Number of maltreatment subtypes experienced (continuous; -)

History of developmental concern (dichotomous; yes -)

School enrollment status (dichotomous; yes +)

Special education status (dichotomous; yes -)

Dependent Variable: Global Functioning

CGAS Score (range 1-100)

*These variables were unable to be examined due to being unavailable within the records despite being prompted for in aspects of the intake form.

APPENDIX D.

OVERVIEW OF HYPOTHESIZED VARIABLES FOR THE MULTIVARIATE REGRESSION
MODEL FOR SERVICE INTENSITY NEED.

Predictor Variables

Age of child (continuous; +)

Race/Ethnicity (categorical)

Gender (dichotomous)

Child substance use (dichotomous; yes +)*

Number of substances used (continuous; +)*

History of suicidal ideation or attempt (dichotomous; yes +)

Number of psychosocial problem areas and environmental stressors (continuous; +)

Number of caretakers (categorical; -)

Number of previous CPS referrals (continuous; +)*

Number of medical conditions (continuous; +)

Special education status (dichotomous; yes +)

Active maltreatment (physical or sexual abuse) experience (categorical; +)

CGAS Score (continuous; -)

Dependent Variable: Service Intensity Need Indicator

CASII Composite Score (possible range 8-40)

*These variables were unable to be examined due to being unavailable within the records despite being prompted for in aspects of the intake form

APPENDIX E.

SAMPLE DESCRIPTIVE ANCHORS FOR CASII DIMENSION RATINGS
(American Academy of Child and Adolescent Psychiatry, 2007).

| Dimension | Rating Score (1 through 5) | Descriptor | Anchor Points |
|---|---------------------------------------|-------------------|---|
| Risk of Harm | 1 | Low Risk of Harm | (a) No indication of current suicidal or homicidal thoughts or impulses, with no significant distress, and no history of suicidal ideation; (b) No indication or report of physically or sexually aggressive impulses; (c) Developmentally appropriate ability to maintain physical safety and/or use environment for safety; (d) Low risk for victimization, abuse, or neglect. |
| Recovery Environment (Environmental Support Subscale) | 3 | Limited | (a) Family has limited ability to respond appropriately to child or adolescent's developmental needs and/or problems, or is ambivalent toward meeting these needs or addressing these problems; (b) Community resources only partially compensate for unmet material and emotional needs and/or child or adolescent has limited or inconsistent access to network; (c) Family or primary care takers demonstrate only partial ability to make necessary changes during the course of treatment. |
| Involvement in Services (Child/Youth Subscale) | 5 | Absent | (a) Unable to form therapeutic working relationship with clinicians or other care providers due to severe withdrawal, psychosis, or other profound disturbance in relatedness; (b) unaware of problem r its consequences; (c) Unable to communicate with clinician due to severe cognitive delay or speech/language impairment. |

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