

THROUGH THE LENS OF RESILIENCE THEORY: IS LEVEL OF FUNCTIONING  
ACROSS BEHAVIORAL, SOCIAL, AND/OR ACADEMIC DOMAINS  
ASSOCIATED WITH LONG-TERM FOSTER CARE?

by

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Doctor of Social Work

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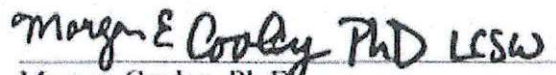
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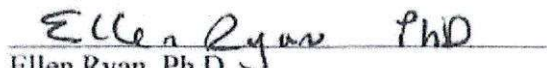
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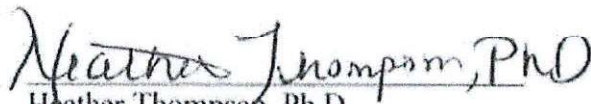
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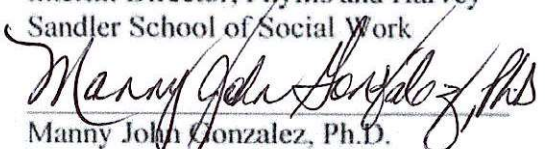
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## ABSTRACT

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Is Level of Functioning Across Behavioral, Social,  
and/or Academic Domains Associated with  
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The purpose of this study was to analyze potential relationships between the domains of behavioral outcomes, social skills, and academic performance for youth in foster care and remaining longer in care. This study utilized data from three waves in the NSCAW II dataset, including youth ( $N=296$ ) between the ages of 11 and 17 years. Multiple linear regression was utilized to assess the association between the three domains and the number of days spent in foster care. Findings were not significant, exposing the need for more studies on contextual variables that might be consistent with children living in out of home care. Limitations of the study were reviewed. Potential research and practice implications of the results were considered.

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## **CHAPTER 1**

### **Introduction**

There are more than 4.1 million referrals made to child protection agencies each year in the United States, involving more than 7.4 million children, as an individual referral can include multiple children (Child Welfare League of America [CWLA], 2017). The national estimate of children who received a child protective services investigation response or alternative response increased 9.5 percent from 2012 (3,172,000) to 2016 (3,472,000), a troubling trend (CWLA, 2017). In 2016, there were an estimated 702,000 victims of abuse and neglect nationally, resulting in a rate of 9.4 victims per 1,000 children in the population (USDHHS, 2016). Youth who experience child maltreatment are at risk of entering the foster care system, and indeed the number of children in foster care has increased in recent years, having risen to 437,000 in 2016 from the historic low of 397,000 in 2012 (Child Trends, 2018), with the largest proportion of children exiting care having spent one to two years in the foster care system (Child Trends, 2018). With this large incidence and prevalence, child maltreatment and foster care should be considered a serious public health concern, as it encumbers significant public resources (Bonami et al., 2008). The child welfare system requires additional research to identify the specific subpopulations at risk of remaining in long-term foster care (LTFC), the barriers that interrupt progress towards permanency, and proven methods to achieve better outcomes (Akin et al., 2013). Thus, this study examined the

association between behavioral, social, and academic outcomes of youth in care and the length of time youth spend in LTFC.

### **Costs to Society**

The costs of investigation, removal, and ongoing care of children who have experienced maltreatment from their birth families is significant, particularly for children with higher or more severe needs (Barth et al., 2006). Title IV-E of the Social Security Act (SSA) addresses major components of child welfare, focusing on providing safe and stable out-of-home care for children who are in out-of-home care due to child maltreatment or other circumstances. This care occurs until the youth is able to achieve permanency through being safely returned home, placed permanently with adoptive families, or placed in other planned arrangements (ACF, 2010). The annual cost of removing youth from their birth families and caring for them in foster families, group homes, or institutions are substantial, and annual state and federal expenditures for foster care total more than nine billion dollars under Title IV-E of the Social Security Act (ACF 2010). Then one must consider the costs incurred because of the risks associated with child maltreatment and family disruption, such as homelessness and poverty (ACF, 2010). For example, the financial and societal impact of child maltreatment and foster care on public health is even more marked when one considers the potential for intergenerational transmission, as there is an increased risk among the offspring of foster care alumni to experience similar adverse events (Rebbe et al., 2017).

Additional economic considerations should be made when examining the length of time that a child spends in foster care. For example, if one were to compare the per-child cost of subsidized adoption from foster care with the cost of maintaining a child in

foster care for example, it is evident that a child adopted from foster care costs the public only 40% as much as the child who remains in foster care (ACF, 2010). In fact, Cheng's (2010) results indicate that seven of 10 youth remaining in LTFC for over one year are likely to "age out" of the child welfare system before they can be reunited with their families or adopted. The high financial cost of youth remaining in LTFC can be impacted by decreasing use of LTFC, which may increase the availability of system resources to better address prevention programming targeting those factors positively associated with remaining in LTFC. The fiscal cost is thus important to consider, while also acknowledging the additional impact on children and youth.

### **Impact on Children and Youth**

Child maltreatment can have a significant negative impact on youth at the individual level (Cicchetti, 2005). Children placed in foster care may experience deleterious effects on their eventual opportunities due to the negative psychological, somatic and social consequences that can affect their experience of childhood, which can extend into their adult development and old age (The St. Petersburg-USA Orphanage Research Team, 2008). Additionally, the presence of a mental health condition in a child who has experienced maltreatment and has been placed in foster care can complicate reunification or delay the adoption process (Gonzalez, 2014). As such, researchers should consider risk factors for these youth. Risk factors related to resilience in children can be assessed over several domains, specifically behavioral outcomes, social skills, and academic performance (Afifi & McMillan, 2011).

For youth who have been abused or neglected, removal from their home, no matter how necessary, is also traumatic, and can have negative effects that may last a

lifetime (Bruskas, 2008). Triseliotis (2002) stated that it is preferable to secure a placement with a relative or with a non-relative who already knows and has a relationship with the child in order to lessen the impact of change and removal on vulnerable youth. Unfortunately, of the approximately 7.4 million youth suspected of having been abused or neglected in 2016, an estimated 437,465 youth were placed in foster care (CWIG, 2017).

Historically, youth in foster care have been identified as having higher rates of behavioral problems (Burns et al., 1995) and greater use of mental health services as compared to youth in the general population (Farmer et al., 2001). More recent studies have indicated this high prevalence of behavioral problems in youth in foster care (Oosterman et al., 2007; Konijn et al., 2019). Youth in foster care are sixteen times more likely to receive psychiatric diagnoses and eight times more likely than their peers to take psychotropic medications (Landsverk et al., 2009). Additional psychosocial concerns, such as family problems, depression, anxiety, substance abuse, sexual abuse, and violence typically identified in youth who enter foster care can go on to pervade their lives (Cheng, 2010). As they get older, those can present as severe social problems, including high rates of teen pregnancy, substance abuse, and arrests (Cheng, 2010). In comparison to adults who had not experienced foster care, those with this history identified significant and consistently higher prevalence rates of morbidity, including asthma, diabetes, hypertension, epilepsy or seizure disorder, and being a current smoker (Slotnick et al., 2012).

### **Length of Time in Care**

Even more concerning than placement in foster care is the length of time that youth may remain in care. In 2016, 28% of the youth in foster care had been there for 12 months or longer, which is considered to be long term foster care (LTFC; Child Welfare Information Gateway, 2018). Federal outcome data indicate that LTFC is common and widespread (Cheng, 2010), in fact, nearly one in four youth have remained in foster care for three years or longer (U.S. Department of Health and Human Services, 2010). LTFC is correlated with greater risk for youth staying in foster care until maturation, as literature has indicated for some 60 years now that remaining in care past a year and a half increases that child's chances of remaining in care until the age of maturation (Mass & Engler, 1959; Ringeisen et al., 2013). The literature also indicates that youth remaining in LTFC can be emotionally insecure, have a serious emotional disturbance (SED), and/or have poorer outcomes across all permanency and well-being domains (Triseliotis, 2002). Because of the deleterious impact of LTFC to society, to the family, and to the youth impacted, understanding factors that relate to longer stays in foster care becomes important at the micro, meso, and macro level.

### **Purpose of the Study**

The purpose of this study was to extend upon prior literature by examining which youth in the child welfare system are potentially most at risk of remaining in LTFC. Resilience theory provided a framework for understanding more about how to effectively target youth at increased risk for remaining in LTFC placements based on their behavioral outcomes, level of attainment of social skills, and academic performance in comparison to those achieving other permanency outcomes such as adoption or reunification, with the goal of promoting resilience while in this context. This study

examined how level of functioning, assessing for behavioral outcomes, social skills, and academic performance, was associated with remaining in LTFC in the child welfare system.

Resilience develops when environmental, social, and individual factors such as competence, coping skills, and self-efficacy, interrupt the trajectory from risk to pathology (Fergus & Zimmerman, 2005). These assets, or positive factors inherent to an individual, are called protective factors, and can help one to overcome adversity (Fergus & Zimmerman, 2005). Through this analysis, identified risk factors can be targeted, and the development of protective factors can be supported, and work can be done towards developing practice and policy recommendations designed to prevent youth from remaining in LTFC.

Youth remaining in LTFC are at risk of poor behavioral outcomes, social skills attainment, and academic performance based on trauma that they have experienced as well as the impact of their experiences in the child welfare system (Fernandez, 2008; Jones Harden, 2004; Leve et al., 2012). The prevalence of youth in LTFC is relatively high compared to the number of youth in foster care overall (Cheng, 2010). Because of the negative outcomes identified among youth in foster care, additional research to identify the specific subpopulations at risk of remaining in LTFC, the barriers that interrupt progress towards permanency, and potential methods to achieve better outcomes is needed (Akin et al., 2013). It should be assessed if higher functioning youth (based on their behavioral outcomes, social skill attainment, and academic performance) spend less time in foster care. Additionally, it may be critical to examine whether one or more domains is of particular importance in understanding the length of time spent in care.

## **CHAPTER 2**

### **Literature Review**

The purpose of this chapter was to review previous research on various domains of youth functioning. This chapter begins with an overview of resilience theory, which provided a theoretical framework for this study. Next, research on youths' experiences of long-term foster care (LTFC) was presented. Research related to the three domains of functioning, behavioral outcomes, social skills, and academic performance, were reviewed to indicate the current state of research and how these domains could potentially be connected to how long a youth remains in foster care. Finally, conceptual definitions, for the purpose of this study, are presented.

#### **Theoretical Perspective**

The concept of resilience has evolved and expanded over the past forty years. Resilience is broadly defined as the ability to “bounce back” or rebound from stressful or adverse events while also maintaining a stable or even a strengthened level of well-being across psychosocial domains (Cornum et al., 2011; Reivich & Shatte, 2002). Most scholars now agree that the development of resilience is evidenced by youth displaying adaptive or competent functioning despite exposure to high levels of risk or adversity (Vanderbilt-Adriance & Shaw, 2008). In addition, resilience cannot occur without the presence of two factors - adaptive functioning and exposure to risk or adversity (Vanderbilt-Adriance & Shaw, 2008). Prior literature established that resilience has been



defined in different ways at various times, clearly dependent upon the social, cultural, and historical context within which it is defined, perceptions and perspective of the researcher, and upon the characteristics of the sample population (Fletcher & Sarkar, 2013; Lee et al., 2013). Two factors appear to be consistent throughout the theory of resilience, the presence of adversity and an adaptation response, which could be either an individual's return to normal functioning or even flourishing to a degree not noted prior to the adverse event. This study considered if the level of behavioral, emotional, and academic functioning was directly related to the length of time a youth spends in foster care. It is possible, through this theoretical lens, that identification of these risk factors could buffer the impact of trauma and support human resilience across multiple domains (Luthar & Brown, 2007; Masten, 2006; Rutter, 2008).

This study applied a developmental theoretical perspective to assess variables that might relate to youth remaining in LTFC. Conceptually, resilience is grounded in developmental psychology as a construct built over time. Noam Garmezy, an important pioneer in the study of resilience, viewed development as the unifying concept in the study of psychopathology, considering it to be the most important tenet in the field of developmental psychopathology (Rutter, 2008; Rutter & Garmezy, 1983). As Fraser (2004) stated, "there is remarkable variability in the reactions of children to adversity," and some children "manifest positive rather than pathological adaptation in the face of hostile environments and significant personal disadvantage" (p. 13).

Prominent scholars involved in the birth of the concept of resilience research have included Norman Garmezy (1974), Emmy Werner and Ruth Smith (1982, 1989), and Michael Rutter (1987, 1999). Based on their scholarship, the concept of resilience has

developed from a limited and specific nominal list of indicators into a more dynamic and holistic conceptual framework that sees the child within his or her wider familial and community context. Thus, research requires an analysis of a much broader range of risk and protective factors, those considered as a collective picture of the context in which the child is nested, as well as careful consideration of how those layers of factors at differing levels are related and how they interact.

Basic assumptions of the concept of resilience (Fraser, 2004) indicate that resilience is a biopsychosocial and spiritual phenomenon, involves a dynamic process of person-environment exchanges, and encompasses an adaptational process of goodness of fit. Resilience is considered to occur across the life span, with individuals, groups, families, and communities all following their own unique path of development (Green, 2002). The development of resilience can be impeded by life stress and one's own coping strategies and skills, as it is related to competence in daily functioning and occurs along a continuum with the polar opposite being risk. Resilience is potentially interactive and dynamic, affecting or being affected by other risk factors, and it can be enhanced by connection and relationships (Rutter, 2008). For example, resilience can be affected by attachments to family, school, peers, neighborhood, and society; thus, diverse individuals may demonstrate resilience in diverse ways. Finally, resilience is impacted by the depth of environmental resources available (Rutter & Garmezy, 1983).

Resiliency theory provides a conceptual framework for understanding how promoting and enhancing the development of behavioral, social, and academic abilities can buffer the impact of trauma and support human development. Specifically, it is assumed that youth who are more resilient in these domains are subsequently more likely

to exit foster care. This theoretical perspective also allowed for the consideration and incorporation of assessment and analysis of the inner and outer worlds of youth remaining in LTFC, while incorporating a psychosocial and developmental approach. As articulated by Rutter (1999), the complex synthesis of individual characteristics plus external family and environmental factors influences cycles of negative and positive experiences. Several researchers have indicated the importance of analyzing resilience for youth in care (Isakov & Hrcic, 2020; Gomes Pessoa et al., 2020). In fact, one study found that youth in foster care might have the ability to develop resilience and adaptive functioning through their time in care (Humphreys et al., 2018). Van Breda and Dickens (2018) explored how various resilience factors could relate to better outcomes for youth in care. While they did not identify individual resilience factors as most predictive of outcomes, authors noted that additional research into how resilience and adaptive functioning can influence various outcomes for youth in care is needed. Bell and colleagues (2015) analyzed behavioral resilience as an indicator of adaptation to time in care. For this study, behavior, social skills, and academic performance were conceptualized as areas of potential adaptive functioning (i.e. protective factors) and thus can be explored as ways to protect against the risk of spending longer time in foster care.

### **Long Term Foster Care**

By examining which youth in the child welfare system are most at risk of remaining in LTFC, this study intended to determine how level of functioning, when assessing for behavioral outcomes, social skills, and academic performance, was associated with length of time in foster care. Federal outcome data indicate that many youth who have experienced maltreatment remain in LTFC, and that this is relatively

common and widespread (Cheng, 2010). In fact, nearly one in four youth have been in the foster care system for three years or longer (U.S. Department of Health and Human Services, 2010). On average, youth spent 20.8 months in foster care in FY 2014 (USDHHS, 2015).

Historically, LTFC is correlated with a greater risk for remaining in foster care until maturation (Mass & Engler, 1959). The literature also indicates that youth who remain in LTFC can experience emotional insecurity, serious emotional disturbances (SED), and/or have poorer outcomes across other permanency and well-being domains (Triseliotis, 2002). At the systems level, providing LTFC to youth who have experienced maltreatment can be expensive and cumbersome, using extensive resources in a strained system (Barth et al., 2006). If protective factors can be identified, the potential of prevention and intervention strategies being developed and designed specifically to decrease this risk and promote the ongoing development of resilience is possible (Rutter, 2008). The literature indicates that risk factors related to resilience in youth can be assessed over several domains: behavioral outcomes, social skills, and academic performance (Afifi & McMillan, 2011). This review of the literature will thus be organized around these domains.

### **Behavioral Outcomes**

Both internalizing and externalizing behavior problems are relevant when assessing for behavior problems. Internalizing behaviors include a lack of control of emotions. These can include increased demand for attention, feelings of inferiority or worthlessness, social withdrawal, and dependency (McCulloch et al., 2000).

Externalizing behavior problems can be defined as, “overt behaviors that are aggressive,

hostile, destructive, or defiant in nature” (Keil & Price, 2006, p. 764). The literature indicates that youth in foster care exhibit higher scores on the externalizing, internalizing, and total scales of the Child Behavior Checklist (CBCL; Achenbach, 1991) compared to youth outside of the child welfare system (Carbone et al., 2007).

Behavioral problems are prevalent in youth residing in foster care, and impact placement disruptions, which may then lead to the experience of spending more time in LTFC. Burns et al. (1995), using data from the Great Smoky Mountains Study of Youth, found that youth in foster care have higher rates of behavioral problems than youth not in foster care. Additionally, in a study analyzing a sample of youth in LTFC, four years after removal, 35% of youth with clinical levels of behavioral problems were still in foster care placements as compared to 19% of youth who were in foster care without a clinical level of behavior problems (Walsh & Mattingly 2011). Bell and colleagues (2015) analyzed the prevalence of resilience and specifically behavioral adaption for youth in care. While it was noted that the majority of youth developed resilience against both internalizing and externalizing behaviors, it is noteworthy that approximately one third of youth in their study had challenges with behavioral adaption to time spent in care.

Behavior problems among foster youth have been considered both as a result of their time in foster care as well as a contributor to the success or failure of placements, as behavior problems have been shown to dramatically increase the risk of placement breakdown (Chamberlain et al., 2006; Oosterman et al., 2007; Konijn et al., 2019). Placement breakdowns have been found to be more common among youth who have been in foster care 36 months or more, supporting the claim that there is a relationship between placement breakdown and the experience of LTFC (Ringeisen et al., 2013).

Indeed, children living in LTFC were found to have experienced five placement changes compared to the median of three changes for children who lived in foster care for fewer than 36 months (Ringeisen et al., 2013). Thus, the relationship between behavioral problems, placement breakdowns, and LTFC is important to consider.

### **Social Skills**

Youth in the child welfare system, as a result of maltreatment, have poorer social skills compared to youth who have not been maltreated, which may result in an increased risk of remaining in LTFC (Khambati et al., 2018). Social skills are described as a combination of abilities and behaviors that promote positive social engagement and experiences (Lum et al., 2018), and they are understood as a dynamic and interactive process between the individual and their environment (Oshri et al., 2017). Research identifies early relationships between children and their caregivers as the mechanism through which we support social skills formation (Carlo et al., 2007). Children who had experienced maltreatment were found to have significantly poorer skill in initiating interactions with peers and maintaining self-control, as well as a greater number of problem behaviors, suggesting that the experience of maltreatment has a negative impact on children's developing interpersonal skills (Darwish et al., 2001).

Specific to this study, it is important to note that a recent review of empirical articles identified that increased social skills are associated with resilience following child maltreatment at every developmental stage (Yoon et al., 2019). Overall, there has been limited research on the connection between the social skills of youth in foster care and how this may relate to the length of time spent in care. Merritt and Snyder (2015) noted that social skills are rarely seen as a potential protective factor for youth in care.

However, their study did find that youth who demonstrated stronger peer relationships did in fact have fewer behavioral problems. It may be that improved social skills can serve as a protective factor against the experience of LTFC by reducing externalizing behaviors and increasing the quality of the youth's relationships.

### **Academic Performance**

Youth with maltreatment histories often experience impairments in their academic performance, such as placement in special education, grade retention, and lower grades (Romano et al., 2015). These impairments appear to be particularly pronounced among youth who have experienced maltreatment in out-of-home care. Youth who have experienced maltreatment often exhibit impairments in their academic performance, as evidenced by involvement in special education interventions, poor performance across a range of school subjects and on standardized achievement measures, lower grade point averages, higher grade retention, and frequent school absences and/or changes care (Romano et al., 2015). Herbers et al. (2012) examined early reading skills of over 18,000 students from the Minneapolis Public Schools system as a predictor of and potential protective factor for future achievement. Low achievement in first grade had negative implications for their later achievement, and youth who struggle early on may become discouraged and disengaged, increasing the risk of academic failure (Herbers et al., 2012).

Youth in foster care often have deficits when compared to youth not in foster care in their academic achievement across subject areas and grade levels (Clemens & Tis, 2016). Barrat and Berliner (2013) purported that students in foster care have a significant academic achievement gap when they are compared to youth not in foster care. Students

in foster care tend to be older than their non foster youth peers in their grade level, and they are more likely to have been retained, an additional risk factor for dropping out (Barrat & Berliner, 2013). Additionally, research has found that youth in foster care were consistently among the lowest performing subgroups academically in math and English when compared to youth not in foster care, and that youth in foster care demonstrated higher dropout rates and lower graduation rates than youth not in foster care (Barrat & Berliner, 2013).

Experiences of maltreatment, high mobility, family instability, domestic violence, and poverty, all prevalent for child welfare-involved youth, are also associated with low levels of academic achievement (Topitzes et al., 2010). This represents risk for youth in foster care as related to short- and long-term academic failure, school dropout, involvement in criminal activity, incarceration, dependency on welfare programs, and homelessness (Snow, 2009; Trout et al., 2003) without intervention. Without achieving competence in their mastery of basic academic skills, youth who have experienced maltreatment may then be at increased risk for short- and long-term academic failure, school dropout, involvement in criminal activity, incarceration, dependency on welfare programs, and homelessness (Snow, 2009; Trout et al., 2003).

While there has been limited research on a direct connection between academic performance and length of time spent in care, there does appear to be a connection between academic performance and the other domains in this study. One study identified potential consequences of time spent in care as more school mobility, which can impede youths' ability to develop socioemotional competence (Pears et al., 2015). Furthermore, it has been found that youth in foster care are more likely to experience disciplinary issues



in their academic settings (Kothari et al., 2018). However, it is also important to consider how youth who have lower academic achievement might also be at risk for remaining longer in care.

### **Levels of Functioning Across Domains**

Prior research conducted on foster youth has indicated that associations exist among behavioral outcomes, social skills, and academic performance. For example, Wentzel (1993, 1998) identified a strong link between prosocial behavior (e.g., helping, sharing, cooperating) and academic achievement. In a more recent and large-scale study, Gerbino and colleagues (2018) also demonstrated that prosocial behavior is a significant predictor of academic performance, when controlling for other variables such as IQ and personality factors. Additionally, problems with peers, indicative of poorer social skills, are correlated with lower academic achievement (Wentzel & Caldwell, 1997), and Malecki and Elliot (2002) determined that poorer social skills predicted worse performance on achievement tests. Askell-Williams and Lawson (2015) identified that children with peer problems are more likely to have lower academic motivation and additional school-related difficulties. Humphreys and colleagues (2018) noted that deficits in one area of functioning (e.g. social skills, behaviors, academic performance) is often indicated with deficits in another area. Analyzing the various risk factors described in this literature review (behavioral outcomes, social skills, and academic performance) also allows for the reflection of potential protective factors if we can promote resilience in these youth. As resilience occurs across the life course with each individual experiencing their own unique path, the identification of risk and protective factors is important and urgent.

## **Study Purpose and Research Questions**

The purpose of this study was to extend the literature by examining domains of functioning that might to the length of time youth in foster care remain in LTFC through the lens of resilience theory. The researcher examined whether behavioral outcomes, social skills, and academic performance were associated with length of time in foster care in the child welfare system. It is hoped that this research could support the development of practice and policy recommendations to enhance the well-being of youth in LTFC.

This study thus aimed to address the following research questions (RQ):

**RQ 1:** Is level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance related to length of time in foster care at Wave 2?

**H<sub>0</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 2.

**H<sub>a</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are related to length of time in foster care at Wave 2.

**RQ 2:** Is level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance related to length of time in foster care at Wave 3?

**H<sub>0</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 3.

**H<sub>a</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 3.

## **Conceptual Definitions**

To explore the connection between these domains and length of time spent in foster care, under the lens of Resilience theory, the following conceptual definitions will be utilized in this study.

***Behavior*** is conceptually defined as “something that a person does that can be observed, measured, and repeated.” (Cooper et al., 2007). Clearly defined behaviors are specifically described actions as opposed to including attention to personal motivation, internal processes, or feelings. Internalizing behaviors include a lack of control of emotions. These can include increased demand for attention, feelings of inferiority or worthlessness, social withdrawal, and dependency (McCulloch et al., 2000). Externalizing behavior problems can be defined as, “overt behaviors that are aggressive, hostile, destructive, or defiant in nature” (Keil & Price, 2006, p. 764).

***Social skills*** references experience, expression, and management of emotions, as well as assessing their ability to engage in rewarding relationships with others (Cohen, 2005). This conceptual definition included both intra- and interpersonal processes. The important concepts of emotional development include the ability to identify and understand one’s own feelings, to accurately read and comprehend emotional states in others, to manage strong emotions and their expression in a constructive manner, to regulate one’s own behavior, to develop empathy for others, and to establish and maintain relationships (National Scientific Council on the Developing Child, 2004).

***Academic performance*** is conceptualized by Choi (2005) as the successful completion of course activities by students coupled with grades and GPA. York et al. (2015) found that the bulk of the literature focused on academic achievement when defining or measuring academic success or performance.

**Risk** is understood as a statistical concept originating in epidemiology, as “influences that increase the probability of onset, digression to a more serious state, or maintenance of a problem condition” (Kirby & Fraser, 1997, pp. 10–11). Risk factors then are characteristics of an individual, a family, or a community that, when present, relate to a higher probability of a negative outcome. Research suggests that it may be that cumulative risk that is more important than any one individual risk factor, with youth experiencing the highest levels of risk being significantly less likely to show positive outcomes than those experiencing lower levels of risk (Luthar, 2006; Vanderbilt-Adriance & Shaw, 2008), potentially relating to who is more likely to exit foster care.

**Vulnerability** refers to the theoretical tenet that some individuals are more likely to experience an undesired outcome, like remaining in LTFC. “A vulnerability factor is a characteristic of an individual that makes that person more susceptible to a particular threat to development” (Masten, 1994, p.7).

**Protective factors** are those variables that might “reduce or mitigate the negative impact of risk factors” (Kim-Cohen, 2007). Developed from Bronfenbrenner’s (1979) social ecology model, protective factors in the literature are identified at differing levels across the social environment: individual-level: child prosocial skills; relationship- level: positive parent–child relationships, satisfaction in peer relationships; community-level: neighborhood safety. These operate in opposition to risk factors and can inform the design of intervention by defining strategies to enhance protective factors, protecting youth from the risks associated with remaining in LTFC. These factors moderate the effects of risk and support healthy adaptation and may buffer the impact or interrupt the pathway to the deleterious outcome.

As the construct of resilience evolved, both Rutter (1987) and Garmezy (1991) shifted their focus from the identification of risk factors to the examination of common protective factors among those who developed resilience in the face of adversity. Resiliency theory thus identifies and addresses these protective factors, defined as “positive contextual, social, and individual variables that can interfere with or disrupt the developmental trajectories leading from risk to problem behaviors, mental distress, and poor health outcomes” (Fergus & Zimmerman, 2005). Those factors that are most contributive to resilience among youth are positive temperament, a supportive family milieu, and an extrafamilial social environment that rewards competence (Garmezy, 1991; Werner, 1989). Other individual level correlates of resilience in youth are that they are perceived as more cuddly and affectionate, they have a higher level of intelligence, they are skilled relationally, they are achievement oriented in and out of school, and they are internally oriented, with an internal locus of control (Greene, 2002). This study aims to analyze particular domains of functioning related to protective factors at the individual level; i.e. behavior, social skills, and academic achievement. These will be analyzed as potential protective factors against remaining in long-term foster care. These appear to be most related to personal disposition, such as positive temperament, social responsiveness, academic ability, and self-esteem.

*Adaptive Functioning* is seen as a key indicator of resilience and is best assessed over a range of domains. This measure is individual to the person being assessed and can thus be defined and assessed based on that individual, although the literature does identify correlates to resilience (Greene, 2002). Masten et al. (1994) included competent performance ("close to average or better", p. 145) on three different tasks appropriate to

age and development: academic achievement, conduct, and peer social competence. Thus in this study, protective factors related to resilience in youth will be assessed over these domains; behavioral outcomes, social skills, and academic performance, (Afifi and McMillan, 2011) as these domains may relate to the length of time spent in foster care (i.e. who is more likely to exit foster care and achieve another permanency outcome).

## **CHAPTER 3**

### **Methods**

The purpose of this chapter is to present an overview of the dataset utilized in this study, as well as specific information related to the sample and data collection methods utilized. First, the National Survey of Child and Adolescent Well Being II (NSCAW II) study is presented. Sampling procedures, data collection methods, and the specific sample utilized in this study are described and demographic characteristics are provided. The measurement tools and assessments were considered. Thirdly, the statistical analysis plan was described.

#### **Description of Dataset and Sampling Procedures**

This study utilized secondary data from the National Survey of Child and Adolescent Well-Being II (NSCAW-II, 2011), a national longitudinal study designed to identify and categorize the experiences and service needs of youth and families that interact with the child welfare system. The entire dataset included 5,872 children from birth through age the age of 17.5 at the time of initial data collection in 2008, across 83 counties in the United States. Data collection continued for youth beyond age 18 to follow them through young adulthood. Each of the children had interactions with the child welfare system through allegations and subsequent investigations of child maltreatment. NSCAW II utilized multiple informants who are surveyed in regard to each sampled child so that the richest possible depiction of that child is developed.

The children studied in NSCAW II were identified through the use of a two-stage combined stratification and cluster design (Dowd et al., 2012). The United States was divided into nine strata in the first stage. The majority of the children served by the child welfare system reside in eight states, which constitute the first eight strata, while the ninth stratum consists of the remaining 42 states and the District of Columbia. Individual areas served by a single child welfare agency constituted the primary sampling units (PSUs) within each stratum. These areas correlated to counties or contiguous areas of two or more counties in most cases. NSCAW II survey analysis weights at Waves 1 and 2 were developed according to the stages of the sample design, accounting for the probability of PSU selection and the probability of each child's selection within his/her PSU (Dowd et al., 2012). Weights were then again adjusted by NSCAW II researchers in order to account for more or fewer population members than expected in the frame, deviations from the original plan that occurred during sampling, for nonresponse and for replacement PSUs.

All analyses presented in this research employ NSCAW II survey weights, and non-weighted cell sizes are often presented as well to provide detail about the amount of data upon which analyses are based. As described below, in addition to NSCAW II survey weights, this research also applies propensity score weights to control for selection bias into treatment. While the NSCAW-II is described as a nationally representative sample of child welfare investigated cases, some agencies were excluded because of state laws requiring that the state must first receive consent from their clients before giving their information to researchers (Casanueva et al, 2012). Additionally, while the response rate was 55.8% for the baseline of the NSCAW-II, which was



collected from March 2008 to September 2009, sampling weights do adjust for differential sampling probabilities (Casanueva et al, 2012).

### **Participant Characteristics**

To be eligible for the study, children must have been referred to and investigated for child maltreatment between February 2008 and April 2009 (Dolan et al., 2011). The population thus includes both substantiated and unsubstantiated allegations investigated within the study period and includes analysis of whether or not the children and families received any child welfare services. Data from Wave 1, 2, and 3 of NSCAW II were utilized in this study (NSCAW, 2014). Although there was a total of 1,664 youth between 11-17 included in Wave 1, this study sample included 296 youth in the final sample who identified as being in an out of home placement at the time of initial data collection in Wave 1.

Table 1 displays frequencies and percentages for categorical demographic variables in the present study. The subsample consisted of 148 girls (50%) and 148 boys (50%). Of the 296 participants, 37 (12.5%) were American Indian, 13 (4.4%) were identified as being Asian/Hawaiian/Pacific Islands, 116 (39.2%) were Black, 118 (39.9%) were White, and 12 (4.1%) respondents did not report information on their racial background. Participants reported the following types of abuse/maltreatment, in order of most common: 49 (16.4%) experienced physical abuse, 34 (11.4%) experienced sexual abuse, 14 (4.7%) experienced emotional abuse, 72 (24.5%) experienced neglect, 25 (8.4%) experienced parental substance abuse, 20 (6.7%) experienced abandonment, 6 (2%) experienced domestic violence, 25 (8.7%) were noted as “other,” and data was missing for 51 participants (17%). Participants in the present sample experienced two

types of placement: 175 (59.1%) participants were placed into foster homes and 114 (38.5%) participants were placed into kin-care settings. Information for the type of placement variable was not available for 7 (2.4%) participants. The data for the dependent variable, length of time in foster care, was drawn from Wave 3. Wave 3 included interviews with 4,143 youth and 3,942 caregivers. Table 2 provides descriptive statistics on youth ages, which ranged from 11 to 17 years with a mean of 14.11 ( $SD = 1.86$ ). Days in out of home care at Wave 2 ranged from 8 to 851, with a mean of 446.58 ( $SD = 196.94$ ). Days in out of home care at Wave 3 ranged from 8 to 1547, with a mean of 668.03 ( $SD = 411.09$ ).

Table 3 provides descriptive statistics of placement settings at Wave 1, Wave 2, and Wave 3. At Wave 1, 175 youths (58.7%) were placed into foster homes, and 114 (38.3%) were placed in kin-care settings. The remaining participants had an unknown placement type (2.4%). At Wave 2, 83 (28 %) were placed in foster care, 77 (26.01%) were placed in kin-care settings, and 45 (15.2%) were home with their biological families. The placement setting for 86 (28.9%) of the youths was unavailable. At Wave 3, 38 youth (12.8%) are placed in kinship care, 36 (12.6%) in foster care, 30 (10.13%) were home with their biological families, and 7 (2.36%) were in an adoptive home. There were 185 youth (62.4%) missing from the data.

### **Data Collection**

Data was collected through face-to-face interviews and assessments with children, parents, nonparent adult caregivers (foster parents, kin caregivers, group home caregivers), investigative caseworkers, child welfare managers, and teachers (Dolan et al., 2011). Baseline data collection began in March 2008 and was completed in

September 2009. The second wave of the study, 18 months after the close of the NSCAW II index investigation, began in October 2009 and was completed in January 2011. Children and families were re-interviewed approximately 36 months after the close of the NSCAW II index investigation for Wave 3.

## **Measures**

### *Internalizing and externalizing behavioral outcomes*

This study utilized the Child Behavior Checklist (CBCL), a 118-item caregiver and teacher report questionnaire on which the child is rated on various behavioral and emotional problems (Achenbach, 1991). The internalizing subscale includes 31 items related to anxious and depressed behavior, social withdrawal, and somatic complaints. The externalizing subscale consists of 33 items related to rule-breaking and aggressive behaviors. In the NSCAW study, caregivers completed the CBCL (Achenbach, 1991). Internalizing behavior can comprise somatic complaints, withdrawn, and anxious/depressed behavior (e.g., nervous, high-strung or tense, unhappy, sad, or depressed). Externalizing behavior can comprise aggressive and rule-breaking behavior (e.g., temper tantrums or hot temper, destroys things belonging to others). The responder, in this study the caregiver, indicates how well the behavior describes the child, either now or within the past six months on a three-point scale (0 = not true, 1 = somewhat/sometimes true, and 2 = very/often true). The higher the score on the scale, the more negative behaviors are being reported. Scores less than 60 are in the normal range, and scores greater than 63 are in the clinical range (Achenbach, 1991).

The CBCL is documented in the literature as a valid measure to assess the clinical status of behavior problems occurring in youth (Heflinger et al., 2000; Nakamura

Adriance, 2009). The measure has acceptable internal consistency and test-retest reliability (Achenbach, 1991). The reliability for the internalizing and externalizing subscales for the NSCAW sample was good ( $r = .85$  and  $r = .84$ , respectively). The CBCL is widely used in both research and clinical practice to screen children and adolescents for emotional, behavioral, and somatic disorders, and this measure has been utilized in multiple studies of child welfare populations through the utilization of the NSCAW II datasets (Casanueva et al., 2012; Feeley, 2016; McCue-Horwitz et al., 2013).

### *Social Skills.*

The Social Skills Rating System (SSRS) and social skills subscale was administered in NSCAW II (Gresham and Elliott, 1990). Caregivers completed the social skills subscale of the SSRS (Gresham and Elliot, 1990). There were 39 items administered to caregivers, with questions such as “How often does [CHILD] invite others to your home?” An additional 30 items were administered to teachers, with questions such as “How often does [CHILD] attend to your instructions?” Responses were scored from 1 (never) to 3 (often), with scores greater than 84 being indicative of moderate to high social competence (Gresham & Elliot, 1990).

The constructs assessed by the social skills subscale of the SSRS include children's cooperation, responsibility, assertion, and self-control. While the SSRS can be utilized for youth ages 3 to 18 years old, the sample utilized for this study is youth 11 years and older. This measure has been used successfully to assess level of social skills in populations of youth who were subjects of child abuse and neglect investigations (Stahmer et al., 2005), and Austin (2010) recommends its use with child welfare

populations because of the comprehensive nature of the assessment provided by multiple raters.

### *Academic Performance*

The Woodcock-Johnson III Tests of Achievement includes two subscales, the Letter-Word identification and Applied Problems subscales, utilized to assess youth 11 years of age and older (Woodcock et al., 1989). The Letter-Word identification subscale includes 69 items and is collected through a one on one assessment of the child. This is an oral test of reading skills and pronunciation, as the child reads words aloud from an increasingly difficult vocabulary list. The Applied Problems (mathematics) subscale assesses the child's ability to analyze and solve word problems, and it is delivered orally. The child must analyze the information, identify the correct operation, and identify the numerical information before solving the problem. An example might be: "Sally has 11 blocks. Mary has 10 blocks and gives 3 to Sally. How many blocks does Sally have now?". Standardized scores are based on a mean of 100, with a standard deviation of 15. The higher the score on this assessment, the more skilled in word identification. Timothy and Donald (2003) asserted that reliability estimates for the subscales were in the acceptable range of .80 or above. Extensive research supports the reliability and construct validity of the Woodcock-Johnson III Tests of Achievement (Woodcock et al., 1989; Grenwelge, 2009).

### **Control variables**

The demographic variables of age of youth, gender of youth, and race will be included as control variables, which is consistent with previous studies (Darmish et al., 2001; Farmer et al., 2001).

## **Data analysis**

SPSS V. 26 was used to complete all analyses and check for data entry errors and outliers before beginning this secondary data analysis.

### *Data cleaning procedures*

The distribution of responses within the data set were examined in order to discover potential errors (Rubin, 2017). The sample was filtered for age in order to ensure all participants were over the age of 11 years. The following variables were extracted from the dataset:

**Wave 1.** From Wave 1, the variables of NSCAW ID Number, child age in years, child gender, child race, child welfare setting, and child type of abuse were extracted from the dataset. All variables were recoded to condense missing data. For the descriptive variable of child welfare setting, output was recoded to clearly identify those in out of home care, whether that be foster care or kinship care.

**Wave 2 and Wave 3.** From Wave 2 and Wave 3, the variables of cumulative number of days in out of home care, the dependent variable, was extracted.

This study used listwise deletion, which excludes all respondents with missing data from the statistical analyses, as a missing value necessitated the removal of the case from the study. One can assume that missing data is missing completely at random and typically rare (Rubin, 2017).

### *Checking assumptions of normality.*

Prior to conducting analyses, data were examined for normality for linear regression using graphical tests (P plots, scatterplots, histograms) and score-based tests (skewness, kurtosis). They demonstrate that the majority of variables appeared to be

normally distributed or relative normally distributed, and that the data appears homoscedastic. An examination of the histograms, stem and leaf, and the normal distribution Q-Q Plot identified that the dependent variables of days in out of home care at Wave 2 and days in out of home care at Wave 2 revealed bi and trimodal histograms respectively, and skewed stem and leaf plots. Based upon the score-based assessments of skewness and kurtosis, the only non-normal variable was the W-J Applied Problems Standard Score (see Table 4 for specific scores; Kim, 2013).

#### *Preliminary analyses*

Prior to running the final analyses, a number of correlation analyses were performed to examine relationships between study variables. Additionally, analysis of variance (ANOVAs) were conducted to assess for any differences in the means of the independent and dependent variables, based on the control variables of age, gender and race of youth. Although age can be assessed as a continuous variable, given that there were only a limited number of ages in this study (e.g. age 11-17 years), and to further assess any differences across age groups, one-way ANOVAs were calculated to assess for any differences across the independent and dependent variables based on age.

#### *Final analyses*

In order to address the research questions, two multiple linear regressions were conducted to test the relationships identified previously and assess if the independent variables (behaviors, social skills, and academic performance) demonstrated a significant relationship with the dependent variables (length of time in foster care at Wave 2 and Wave 3). This allowed for an assessment of the relationship among and within a set of interval/ratio variables (level of functioning across domains) on an interval/ratio criterion

variable (length of time in foster care). The independent variables included level of functioning in the domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance and the dependent variables were length of time in foster care at Wave Two and length of time in foster care at Wave Three as measured by number of days. The following control variables were included in each analysis: age of youth, gender of youth, and race/ethnicity. The following regression equation (main effects model) was used:  $y = b_1*x_1 + b_2*x_2 + b_3*x_3$ ; where  $Y$  = estimated dependent variable,  $c$  = constant (which includes the error term),  $b$  = regression coefficients and  $x$  = independent variables.

Standard multiple linear regression analyses were used, entering all independent variables (predictors) simultaneously into the model. Variables were evaluated by what they added to the prediction of the dependent variable which is different from the predictability afforded by the other predictors in the model. The  $F$ -test was used to assess whether the set of independent variables collectively predicted the dependent variable.  $R$ -squared—the multiple correlation coefficient of determination—was reported and used to determine how much variance in the dependent variable can be accounted for by the set of independent variables. The  $t$  test was conducted in order to determine the significance of each predictor, and beta coefficients were calculated to determine the extent of prediction for each of the independent variables under consideration. For significant predictors, every one unit increase in the predictor, the dependent variable will increase or decrease by the number of unstandardized beta coefficients. The assumptions of multiple regression—linearity, homoscedasticity and absence of multicollinearity—was assessed. Linearity assumes a straight-line relationship between the predictor variables and the criterion variable, and homoscedasticity assumes that scores are normally



distributed about the regression line. Linearity and homoscedasticity were assessed by examination of a scatter plot, stem and leaf plot, and histogram. The absence of multicollinearity assumes that predictor variables are not too related and were assessed using Variance Inflation Factors (VIF). VIF values over 10 suggest the presence of multicollinearity.

### **Human Subjects/ Ethical Considerations**

This study utilized deidentified secondary data, and thus ethical considerations are related to potential harm to individual subjects. Written informed consent was obtained by the NSCAW taskforce (Dowd et al., 2012). This researcher was added as a research personnel to the dataset by the principal investigator of this project. This project was exempt from the Florida Atlantic University Institutional Review Board because the secondary data was deidentified. However, the NSCAW data management team required an expedited review and approval process. The original approval letter (Appendix A) and most recent approval letter (Appendix B) are included as appendices.

## CHAPTER 4

### Results

The purpose of this chapter is to present the Results of the study. First, descriptive statistics of the independent and dependent variables are presented. Next, results of the preliminary analyses are included. Finally, the results of multiple linear regressions that were conducted are presented and analyzed for significance.

#### **Descriptive statistics**

Prior to running analyses, descriptive statistics were computed to examine the range, minimum, maximum, mean, standard deviation, skewness and kurtosis of each independent and dependent variable. Table 4 displays means and standard deviations for scores from three different tests: the CBCL internalizing and externalizing standard score, the SSRS social skills subscale, and the W-J Letter-Word identification W and standard score, W-J Applied Problems W and standard score. The CBCL internalizing subscale standard scores ranged from 33 to 81, with a mean of 55.24 ( $SD = 11.40$ ). The CBCL externalizing standard scores ranged from 33 to 88, with a mean of 55.97 ( $SD = 11.99$ ). The CBCL externalizing standard scores ranged from 33 to 88, with a mean of 55.97 ( $SD = 11.99$ ), and 27% ( $n = 79$ ) in the clinical range. The SSRS social skills subscale standard scores ranged from 51 to 130 with a mean of 95.23 ( $SD = 16.02$ ), with 24% of scores reported ( $n=61$ ) falling below the moderate to high social competence threshold. W-J Letter-Word identification standard scores ranged from 1 to 131 with a mean of 92.94

( $SD = 21.74$ ). W-J Applied Problems standard scores ranged from 1 to 121 with a mean of 86.20 ( $SD = 18.45$ ). Additionally, it was found that 20% ( $n = 60$ ) of youth falling one standard deviation below the mean for Letter-Word identification and 36.5% ( $n = 107$ ) of youth falling one standard deviation below the mean for Applied Problems.

## **Preliminary Analyses**

### *Correlational analyses*

Prior to running the final analyses, a number of correlation analyses were performed to examine relationships between study variables. Pearson correlation coefficients were calculated to determine whether significant relationships existed between days in care at Wave 2 and Wave 3, the W-J Letter-Word Identification standard score, the W-J Applied Problems standard score, the SSRS social skills subscale standard score, the CBCL internalizing subscale standard score, the CBCL externalizing subscale standard score, and child age in years.

All correlation relationships have been reported in Table 5. W-J Applied Problems standard score was significantly correlated with the W-J word identification score. A strong positive correlation was found ( $r(294) = .731, p < .001$ ), indicating a significant linear relationship between the two variables. Participants reporting higher applied problems scores also tended to report higher word identification scores. The child's age was also significantly correlated with W-J Applied Problems standard score. A strong negative correlation was found ( $r(294) = -.186, p < .001$ ), indicating that older youth tended to demonstrate lower applied problem scores.

The SSRS social skills subscale was significantly correlated with three variables. A strong negative correlation was found ( $r(279) = -0.479, p < .001$ ) with the CBCL

internalizing standard score, indicating that as social skills increased, internalizing behaviors on the CBCL decreased. A strong negative correlation was found ( $r(257) = -0.633, p < .001$ ) with the CBCL externalizing standard score, indicating that as social skills increased, externalizing behaviors, as reported by the caregiver, decreased. Finally, a strong positive correlation was found ( $r(257) = 0.158, p < .05$ ) with child age, indicating that older youth were more likely to have a higher social skills score. The CBCL internalizing standard score and externalizing standard score are also significantly correlated. A strong positive correlation was found ( $r(280) = .647, p < .001$ ), indicating that caregiver reports of both internalizing and externalizing behaviors tend to increase or decrease together.

#### *Analysis of Variance (ANOVA)*

Independent variables, including W-J Letter-Word identification standard score, W-J Applied Problems standard score, the SSRS social skills subscale, and the CBCL internalizing and externalizing standard score, were analyzed through one way ANOVAs to determine whether there are any statistically significant mean differences across the categorical control variables of gender and race. Additionally, one-way ANOVAs were conducted to assess mean differences of length of time in care at Wave 2 and 3 across gender and racial groups. Although age can be assessed as a continuous variable, given that there were only a limited number of ages in this study (e.g. age 11-17 years), and to further assess any differences across age groups, one-way ANOVAs were calculated to assess for any differences across the independent and dependent variables based on age.

A one-way ANOVA was computed comparing days in out of home care at Wave 2, days in out of home care in Wave 3, the W-J Letter-Word Identification standard score,

the W-J Applied Problems standard score, the SSRS social skills subscale standard score, the CBCL internalizing subscale standard score, and the CBCL externalizing subscale standard score based on the child's gender. There were no significant findings. A one-way ANOVA was computed comparing days in out of home care at Wave 2, days in out of home care in Wave 3, the W-J Letter-Word Identification standard score, the W-J Applied Problems standard score, the SSRS social skills subscale standard score, the CBCL internalizing subscale standard score, and the CBCL externalizing subscale standard score based on the child's gender. There were no significant findings.

A one-way ANOVA was computed comparing the mean of days in out of home care at Wave 2, mean days in out of home care in Wave 3, the W-J Letter-Word Identification standard score, the W-J Applied Problems standard score, the SSRS social skills subscale standard score, the CBCL internalizing subscale standard score, and the CBCL externalizing subscale standard score, based on the child's race. A significant difference was found for the SSRS social skills subscale standard score ( $F(3, 245) = 2.743, p < .05$ ). A significant difference was also found for the CBCL internalizing subscale standard score ( $F(3, 267) = 5.252, p < .01$ ). Tukey's *HSD* was used to determine the nature of the differences between the races. This analysis revealed that on the SSRS social skills subscale standard score, black youth scored lower ( $M = 92.42, SD = 15.585$ ) than white youth ( $M = 98.57, SD = 15.108$ ). Additionally, on the CBCL internalizing subscale standard score, black youth scored lower ( $M = 52.33, SD = 11.250$ ) than white youth ( $M = 58.16, SD = 11$ ).

A one-way ANOVA was computed comparing the mean days in out of home care at Wave 2, days in out of home care in Wave 3, the W-J Letter-Word Identification

standard score, the W-J Applied Problems standard score, the SSRS social skills subscale standard score, the CBCL internalizing subscale standard score, and the CBCL externalizing subscale standard score based on the child's age. A significant difference was found based on age on the W-J Applied Problems standard score ( $F(6, 286) = 2.283, p < .05$ ). Additionally, the relationship between the SSRS social skills subscale standard score ( $F(6, 252) = 2.069, p < .057$ ) and child age is significant at  $p < .05$ . Tukey's *HSD* was used to determine the nature of the differences across the ages of the children. This post hoc analysis revealed no significant difference in means when grouped by age.

### **Final Analyses**

A multiple linear regression was calculated to predict days in foster care at Wave 2 based on age, gender, race, and scores on the W-J Letter Word Identification Standard Score, the W-J Applied Problems Standard Score, the Social Skills Standard Score, the Internalizing Standard Score, and the Externalizing Standard Score. The regression equation was not significant ( $F(5, 240) = 1.649, p > .05$  with an  $R^2$  of  $-.001$ ). No variables were significantly associated with more days in foster care. Age, gender, and scores on the W-J Letter Word Identification Standard Score, the W-J Applied Problems Standard Score, the Social Skills Standard Score, the Internalizing Standard Score, and the Externalizing Standard Score are not significant predictors of days in care at Wave 2. Please see Table 7 for details.

A multiple linear regression was calculated to predict days in foster care at Wave 3 based on age, gender, race, and scores on the W-J Letter Word Identification Standard Score, the W-J Applied Problems Standard Score, the Social Skills Standard Score, the Internalizing Standard Score, and the Externalizing Standard Score. The regression

equation was not significant ( $F(5, 239) = 2.320, p > .05$  with an  $R^2$  of .033). Only one control variable (race: white) was significantly associated with more days in foster care. Age, gender, and scores on the W-J Letter Word Identification Standard Score, the W-J Applied Problems Standard Score, the Social Skills Standard Score, the Internalizing Standard Score, and the Externalizing Standard Score are not significant predictors of days in care at Wave 3. Please see Table 7 for details.

### **Summary of Results**

The purpose of this study was to extend the literature by understanding which youth in the child welfare system are most at risk of remaining longer in LTFC through the lens of resilience theory, examining how behavioral outcomes, social skills, and academic performance relate to time in foster care in the child welfare system; and through that analysis, develop practice recommendations designed to instead support youth in exiting foster care. This study thus addressed the following research questions and included the following hypotheses:

**RQ 1:** Is level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance related to length of time in foster care at Wave 2?

**H<sub>0</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 2.

**H<sub>a</sub>:** Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are related to length of time in foster care at Wave 2.

**RQ 2:** Is level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance related to length of time in foster care at Wave 3?

**H<sub>0</sub>**: Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 3.

**H<sub>a</sub>**: Level of functioning in domains of (1) behavioral outcomes, (2) social skills, and (3) academic performance are not related to length of time in foster care at Wave 3.

Findings did not support the two hypotheses tested in this study. Preliminary and final analyses indicated that the dependent variables of length of time in foster care at Wave 2 and Wave 3 were not significantly associated with the independent variables of the W-J Letter-Word identification standard score, the W-J Applied Problems standard score, the SSRS social skills subscale, and/or the CBCL internalizing and externalizing standard score to provide a robust analysis. Ascribing significance to the role of those variables in predicting which youth in the child welfare system are most at risk of remaining longer in LTFC is thus not possible.



## **CHAPTER 5**

### **Discussion**

This study utilized the framework of resilience in order to examine potential risk and protective factors at the individual child level were associated with the experience of LTFC. Specifically, the individual factors of behavioral outcomes, internalizing and externalizing behaviors, social skills, and academic performance were examined with the goal of identifying whether relations existed with days that foster youth spent in care. Fergus and Zimmerman (2005) theorized that resilience develops when individual protective factors can interrupt the trajectory from risk to pathology, which allow an individual to potentially overcome adversity. Thus, this study sought to support the promotion of protective factors and to identify which risk factors predict the experience of LTFC. Findings did not support the two hypotheses tested in this study. Preliminary and final analyses indicated that the dependent variables of length of time in foster care at Wave 2 and Wave 3 were not significantly associated with the independent variables of the W-J Letter-Word identification standard score, the W-J Applied Problems standard score, the SSRS social skills subscale, and/or the CBCL internalizing and externalizing standard score to provide a robust analysis. Ascribing significance to the role of those variables in determining which youth in the child welfare system are most at risk of remaining longer in LTFC is thus not possible.

#### **Internalizing and Externalizing Behaviors**

As indicated by the results, length of time in foster care at Wave 2 and Wave 3 was not significantly associated with internalizing and externalizing behaviors. However, this is contrary to hypothesis 1 and 2. Youth in foster care exhibit higher scores on the externalizing, internalizing, and total scales of the Child Behavior Checklist (CBCL; Achenbach, 1991) compared to youth outside of the child welfare system (Carbone et al., 2007). Thus, the analyses of whether behavioral outcomes resulted in a relationship between days in care and that assessment was identified as important by this researcher. More broadly, it has been noted that youth in foster care suffer from depression, oppositional defiant and conduct disorders, self-destructive and aggressive behaviors, maladaptive interpersonal relationships, and attention deficit disorders at a rate higher than their peers in the general population (Kerker & Dore, 2006). Additionally, researchers have found that the strongest predictor for placement instability of foster care placements was externalizing behavioral problems (Konijn et al., 2019; Oosterman et al., 2007).

While the literature is sparse on the relationship between length of time in care and internalizing and externalizing behaviors, we do know that children with emotional or behavioral problems are more likely to be in foster care (Walsh & Mattingly, 2011). Akin et al. (2013) sought to verify the relevance of mental health problems as a predictor of children who have experienced maltreatment remaining longer in LTFC. They determined that in fact child mental health problems were the most robust predictor of children who have experienced maltreatment remaining in LTFC. While mental health problems could be interrelated to internalizing and externalizing behaviors, mental health

problems were not explicitly assessed in the current study, and thus may have been a potential explanation for not finding significant relationships.

A 2007 descriptive study determined that children experiencing placement instability were more likely to have behavior problems than children who had stable placements (Rubin et al., 2007). The current study did not consider the number of placements, instead considering length of time in care. It may be the number of placements is more relevant to this analysis. Additionally, research has shown that children in kinship homes display fewer behavioral problems (Taussig & Clyman, 2011). However, it was noted that the longer youth spent in kinship placements, the more likely they were to display behavioral problems. Therefore, it is important to further explore the impact that type of placement may have for youth in care. The present study failed to distinguish between kinship and foster caregivers, which may have revealed a deeper understanding of the connections between behaviors, placement type and length of time in care.

### **Social Skills**

As indicated by the results, length of time in foster care at Wave 2 and Wave 3 were not significantly associated social skills. As indicated in hypothesis 1 and 2, it was expected that lower scores on the SSRS social skills subscale would be associated with the experience of LTFC, thus indicating that youth with better social skills would spend less time in foster care. Previous research indicates that youth in care or those who spent a significant amount of time in care have poorer social skills or worse peer relationships (Leve et al., 2012; Lum et al., 2018). Similar to the current study, Lum and colleagues (2018) hypothesized that poorer social skills would be associated with more days in

foster care. However, they instead found that differences in children's social skills were related to maltreatment history. Specifically, youth who had experienced neglect had worse social skills compared to youth with other forms of maltreatment. Interestingly, they also found that youth who experienced emotional abuse at an earlier age were actually less likely to have challenge in social skills (Lum et al., 2018). The current study did not assess explicitly for how maltreatment history related to length of time in care, which may explain non-significant findings.

### **Academic Performance**

As indicated by the results, length of time in foster care at Wave 2 and Wave 3 were not significantly associated with academic performance. As indicated in hypothesis 1 and 2, it was expected that lower scores on the Woodcock-Johnson III Tests of Achievement subscales (i.e., lower academic achievement) would be associated with more days in out of home care. This is based on research indicating that youth in foster care often have deficits when compared to their peers in their academic achievement across subject areas and grade levels (Barrat & Berliner, 2013).

While no known research has indicated that youth with lower academic achievement spend more time in care, previous research does indicate that youth who spend time in foster care generally have lower academic performance. Research has demonstrated that between 33% to 67% of youth in foster care experience poor academic achievement and will require remedial assistance (Trout et al., 2003). In this study, it was found that 20-36.5% of youth were one standard deviation below the mean on academic performance assessments. Berger et al. (2015) identified a relationship between an out of home placement and poorer academic outcomes. However, the difference became much

smaller when those in out of home care were compared to a group of children who were not in care, but receiving public assistance. It may be that while all children in the child welfare system tend to exhibit poorer academic achievement than those in the general population, days in out of home care are not related to academic achievement. Perhaps other contextual factors explain more days in care. Alternatively, it may be that the analysis in this study did not demonstrate the more accurate understanding of the association between academic achievement and time spent in care. For example, Calix (2009) analyzed the experience of foster care and its influence on academic achievement for youth. She found that not only did youth who spent time in care have lower academic achievement, but the other factors influenced this trajectory, including the length of time a youth spent in care. Thus, length of time in care was analyzed as an outcome in the current study, whereas other studies have analyzed it as a predictor of other factors.

#### **Other Contextual Variables Associated with Length of Time in Foster Care**

As previously indicated, this study found no significant relationships between length of time in foster care and child behaviors, social skills, or academic achievement. There may be other important contextual variables, beyond the child variables identified in this study, to consider that better explain length of time in foster care. Permanency is related to long-term foster in the sense that youth who transition to a permanent placement, such as reunification or adoption, are no longer in foster care. Leathers and colleagues (2011) examined a number of potential predictors of permanency outcomes. Permanency outcomes were defined as youth exiting care due to reunification, adoption, or a permanency guardianship. This study found that youth who had more parental visits or a stronger parent- child relationship were more likely to be reunified with a parent.

Similarly, youth who were more integrated into the foster family were more likely to be adopted. Therefore, it might be that relational factors could account for the length of time youth spend in care, or at least what their permanency outcomes will be. Additionally, as noted above, factors related to the type of maltreatment a youth has experienced may offer insights into how long youth spend in foster care (Lum et al., 2018). Additionally, Beal and colleagues (2014) found that several judicial factors, such as how long it took for hearings to be scheduled, were related to the length of time child welfare cases were open. Thus, this study may have been unable to find a significant relationship between length of time in foster care and variable related to behaviors, social skills, and/or academic achievement because it didn't include other important contextual variables to consider.

### **Limitations**

There are several limitations inherent in this study. First, the sample is limited to those recruited through the National Survey of Child and Adolescent Well-Being (NSCAW) research team who had a substantiated report of abuse or neglect. The sample was then further limited to those over 11 years of age who were in long term foster care, further reducing generalizability to adolescents in foster care. Another limitation is the use of non-probability sampling in this secondary data analysis, which cannot be generalized to the entire population (Kanola et al., 2014). Because of this, it's not possible to truly understand how well represented the population is.

While the NSCAW-II is described as a nationally representative sample of child welfare investigated cases, some agencies were excluded because of state laws requiring that the state must first receive consent from their clients before giving their information

to researchers (Casanueva et al., 2012). Additionally, while the response rate was 55.8% for the baseline of the NSCAW-II, which was collected from March 2008 to September 2009, sampling weights do adjust for differential sampling probabilities (Casanueva et al., 2012). Although these findings may represent some youths in LTFC, it may not be representative of all youths involved in the child welfare system. This limits the generalizability of this study to all youth in foster care. Additionally, because the NSCAW-II is a national sample, but child welfare services are state- or county-administered, the local policy context cannot be examined as an individual element to consider. For example, national data could prevent an assessment of the impact of county level factors or policy, such as states that privatize child welfare services. More specifically, privatization might indicate greater variability in the services and interventions offered to youth and families (Flaherty, Collins-Camargo & Lee, 2008), which might lead to greater variability in outcomes or length of time in foster care.

Variables chosen for this study were limited to those measures and questions utilized in the interviews with the participants of the NSCAW dataset without important information about context. In child welfare research that is conducted across states, one must acknowledge the inconsistent definitions of child abuse and neglect, level of evidence required for abuse substantiation, and variable measures (Dowd et al., 2014). For example, experiences of maltreatment, high mobility, family instability, domestic violence, and poverty, all prevalent for child welfare-involved youth, are also associated with low levels of academic achievement (Topitzes et al., 2010), and the experience of being in foster care may disrupt learning (Berger et al., 2015). Localized information about school performance and quality may be important to consider, but the data is

deidentified and thus location is unavailable in the NSCAW study. Additional contextual factors such as the typical social class of a particular community, whether migration was a common experience, the cultural competence of the child welfare work force, or whether a community was rural, suburban, or urban may account for some level of variability in the analyses; however, these variables could not be accounted for in this study.

In terms of considering the assessments utilized in the NSCAW II, both the CBCL and the SSRS social skills subscale are completed by the caregiver. Caregiver reports could have been inaccurate or biased, as one concern with the caregiver and teacher reports in the NSCAW study is that some caregivers and teachers may have only limited knowledge of a youth's behavior (Rosenthal & Curiel, 2006). Similarly, one study found a significant difference in perceived behavior problems for children in kinship versus nonkinship foster care (Rosenthal & Curiel, 2006), which was not controlled for in this study.

### **Research Implications**

This exploratory study sought to identify and examine relationships between behavioral outcomes, social skills, and academic performance in order to develop a more solid understanding of individual level factors that influence the length of time in foster care. Although there were no significant findings in this study, the fact that there were some inconsistencies when with prior research still supports the consideration of multiple recommendations for future research. Future research should consider re-examining this study but utilize logistic regression. For example, converting days in out of home care to a dichotomous variable (e.g., LTFC as 365 days or more in out of home care = 1; less



than 365 days in care = 0), so researchers could examine probability instead of the presence of association (Sperandei, 2014). This allows for the avoidance of confounding effects as it enables one to consider the association of all variables together (Sperandei, 2014).

Future research could also focus on different variables not considered in this study, such as differentiating between type of placements (e.g., kin/relative versus non-relative/formal foster care) to determine differences identified in the literature as important (Akin, 2011). Additionally, including variables such as relationship between youth and their caregivers might provide useful information about days in foster care or placement stability, as researchers have underscored the importance of understanding how attachment and other relational protective factors impact time in foster care (Cooley et al., 2015). Including youth self-report measures in future studies may also be valuable and address a limitation of this study because it would allow for the inclusion of the youth's perspective. Prior literature supports the benefit of incorporating of multiple informants' reports as best practice in research (Dirks et al., 2012).

Although this study did not find significant associations between internalizing and externalizing behaviors and length of time in care, the literature indicates that children's mental health problems reduce the likelihood of permanency and youth may be more likely to linger in care (Akin, 2011; Connell et al., 2006; Landsverk et al., 1996; McDonald et al., 2007; Park & Ryan, 2009; Snowden et al., 2008). Accordingly, future studies should consider mental health diagnosis to determine if there is a relationship to length of time in care. Future studies may incorporate NSCAW II variables related to whether a child has a serious emotional disturbance using hierarchical logistic regression to

partial out the effect of mental health and better understand its impact on permanency (Sperandei, 2014). A multilevel meta-analysis might generate more information about the effects of factors that may influence the length of time a child spends in care, similar to Konijn et al. (2019) who identified small to medium effect sizes for six risk factors (behavioral problems, being kinship care, quality of parenting, age of child placement with siblings, and history of maltreatment) related to placement stability. Additionally, a qualitative study, including a semi-structured interview design, could allow for a deeper understanding of the experiences of youth who remain in long-term foster care.

### **Practice Implications**

Although there were no significant associations between study variables, it is important to consider the needs of youth with poorer outcomes within the foster care system. This study revealed that 21% of the sample are in the clinical range for internalizing behaviors, and 27% of the sample are in the clinical range for internalizing behaviors, underscoring the fact that interventions targeting those behaviors are appropriate (Leve et al., 2012). Parent management training programs have been identified as the most effective way to treat child behavior problems (Abrahamse et al., 2015), which may lead to fewer placement disruptions (Leathers et al., 2005) and potentially to less time in care. Multidimensional Treatment Foster Care for Adolescents (MTFC-A), a multicomponent program that involves placement with a specialized foster family has been shown to produce positive outcomes for foster adolescents, specifically reducing behavioral problems (Fisher et al., 2009; Fisher et al., 2011). Again, while not the focus of this study, it was noted that many youth in the current study were at the

clinical level for internalizing and externalizing behaviors, indicating the importance of targeted interventions.

While days in out of home care and social skills did not have a significant relationship in this study, it was noted that 24% of youth in this study did not have at least a moderate level of social skills. The literature supports the fact that higher levels of healthy peer relationships and social skills support the development of children's social and emotional health (Rosenthal & Curiel, 2006). Another study determined that in a sample of youth in out of home care, participation in structured and unstructured activities was positively associated with social skills, and participation in structured group activities was correlated with better mental health status (Conn et al., 2014). Given that this study found almost one fourth of youth demonstrated a deficit in social skills, perhaps interventions targeted at the development of social skills would be advantageous for youth in care.

Although days in out of home care and academic performance were not significantly linked in this study, it was found that 20% of youth in this study were one standard deviation below the mean for letter word identification and 36.5% of youth for applied problems. The literature supports the fact that social and emotional education can help children in out of home care with their feelings of attachment to school and their commitment to academics (Palmeiri & La Salle, 2017). Therefore, interventions that focus on supporting youth behaviorally, emotionally, and socially may also impact their academic performance.

## **Summary and Conclusion**

The purpose of this study was to analyze potential relationships between the domains of behavioral outcomes, social skills, and academic performance and remaining longer in LTFC. Findings were not significant, exposing the need for more studies on contextual variables that might be consistent with children living in out of home care. More specifically, child factors (adaptation, risk, skill, etc.) did not influence how long a child spent in care. Instead, it may be that other factors within the child's foster family, birth family, and the foster care or child welfare system may specifically influence the length of time youth spend in care. Relational variables that capture the impact on the child's relationship with their biological or foster caregiver are important to explore, as well as other macro level factor. Alternative analysis models based on logistic regression may also be valuable and effective at identifying significant relationships and protective factors. As we continue to assess and analyze ways to promote resilience, we will be better able to support children served by the child welfare system, and address contextual factors that can influence youths' trajectory while in the system. Potential research and practice implications of the results were considered in relation to potential explanations of the findings and compared to convergence or divergence from the literature base. Limitations of the study were reviewed. Suggestions for future study and analysis were made.

**Table 1***Descriptive Statistics for Sample (N = 296)*

Variables	N	Unweighted %	Weighted %
Child Race			
American Indian	37	12.5	13
Asian/ Hawaiian/ Pacific Islands	13	4.4	4.6
Black	116	39.2	40.8
White	118	39.9	41.5
Missing	12	4.1	
Child Gender			
Male	148	50	50
Female	148	50	50
Child Age			
11	33	11.1	11.1
12	38	12.8	12.8
13	43	14.5	14.5
14	46	15.5	15.5
15	48	16.2	16.2
16	62	20.9	20.9
17	26	8.8	8.8
Abuse Type			
Physical Abuse	49	16.4	19.8
Sexual Abuse	34	11.4	13.8
Emotional Abuse	14	4.7	5.7
Neglect	72	24.5	29.6
Parental Substance Abuse	25	8.4	10.1
Domestic Violence	6	2	2.4
Abandonment	20	6.7	8.1
Other	25	8.7	10.5
Child Welfare Setting			
Kinship Care	114	38.5	39.4
Foster Care	175	59.1	60.6
Missing data	7	2.4	

**Table 2***Descriptive Statistics of Days in Out of Home Care at Waves 2 and 3 and Child Age*

<i>Variables</i>	<i>n</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>
Child Age	296	6	11	17	14.11	1.86	1.72	-1.133
Days in Out of Home Care at Wave 2	296	843	8	851	446.58	196.94	-5.71	-1.204
Days in Out of Home Care at Wave 3	295	1539	8	1547	668.03	411.09	0.279	-1.221

**Table 3***Descriptive Statistics of Placement Settings at Waves 1, 2 and 3*

<i>Variables</i>	<i>Wave One</i>		<i>Wave Two</i>		<i>Wave Three</i>	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
In home biological family	0.00	0.00	45.00	15.20	30.00	10.13
In home adoptive family	0.00	0.00	5.00	1.60	7.00	2.36
Kinship care	114.00	0.39	77.00	26.01	38.00	12.83
Foster care	175.00	0.59	83.00	28.00	36.00	12.16
Missing	7.00	0.02	86.00	29.05	185.00	62.50
Total	296.00		296.00		296.00	

**Table 4***Descriptive Statistics of Domains of Functioning*

<i>Variables</i>	<i>N</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>
W-J Letter-Word Standard Score	293	130	1	131	92.94	21.74	-1.986	5.961
W-J Applied Problems Standard Score	293	120	1	121	86.2	18.45	-2.285	8.166
PU: Social Skills Standard-Secondary	257	79	51	130	95.23	16.02	-0.042	-0.253
BC: Internalizing Standard Score	279	48	33	81	55.24	11.4	-0.058	-0.707
BC: Externalizing Standard Score	280	55	33	88	55.97	11.99	-0.106	-0.735



**Table 5***Correlations between Domains of Functioning, Days in Care at Wave 2 and Wave 3, Race, and Child Age*

Variable/Measure	1	2	3	4	5	6	7	8	9
1. W-J Letter-Word Identification Standard Score	-								
2. W-J Applied Problems Standard Score	<b>0.731**</b>	-							
3. PU: Social Skills Standard-Secondary	0.046	0.021	-						
4. BC: Internalizing Standard Score	0.04	0.023	<b>-0.479**</b>	-					
5. BC: Externalizing Standard Score	-0.008	0.016	<b>-0.633**</b>	<b>0.647**</b>	-				
6. Wave 2 Days in OOH Care	-0.005	0.028	-0.06	-0.035	0.06	-			
7. Wave 3 Days in OOH Care	0.008	0.041	-0.115	0.045	0.1	<b>0.678**</b>	-		
8. Child age in years	0.069	<b>0.186**</b>	<b>0.158*</b>	-0.007	-0.12	-0.033	-0.067	-	
9. Child race	-0.072	-0.073	-0.086	0.114	-0.03	-0.116	-0.145	0.063	-

Note. \* =  $p < .05$ , \*\* < .01

**Table 6***Regression Analysis Summary for Independent Variables Predicting Days in Out of Home Care at Wave 2*

Variable	Model 1			<i>t</i>	<i>p</i>	Collinearity Statistics	
	<i>B</i>	<i>SE B</i>	$\beta$			tolerance	VIF
Child age in years	-6.43	6.937	-0.06	-0.94	0.348	0.981	1.019
Child gender	1.688	25.989	0.004	0.065	0.948	0.963	1.038
Race: American Indian	52.525	41.203	0.087	1.275	0.204	0.87	1.15
Race: Asian/ Hawaiian/ Pacific Island	79.257	61.866	0.085	1.281	0.201	0.915	1.092
Race: White	-34.937	28.108	-0.086	-1.243	0.215	0.846	1.183
Model 1							
Variable	Model 1			<i>t</i>	<i>p</i>	Collinearity Statistics	
	<i>B</i>	<i>SE B</i>	$\beta$			tolerance	VIF
Child age in years	-3.991	7.208	-0.037	-0.554	0.58	0.895	1.117
Child gender	4.476	26.343	0.011	0.17	0.865	0.951	1.052
Race: American Indian	52.374	41.957	0.087	1.248	0.213	0.85	1.176
Race: Asian/ Hawaiian/ Pacific Island	71.152	62.925	0.076	1.131	0.259	0.897	1.115
Race: White	-33.961	29.809	-0.083	-1.139	0.256	0.762	1.312
W-J Letter-Word Identification Standard Score	-0.538	0.87	-0.061	-0.618	0.537	0.422	2.37
W-J Applied Problems Standard Score	0.662	1.027	0.064	0.644	0.52	0.411	2.434
Social Skills Standard- Secondary	-0.531	1.098	-0.042	-0.484	0.629	0.554	1.806
Internalizing Standard Score	-1.177	1.561	-0.068	-0.754	0.451	0.503	1.988
Externalizing Standard Score	1.073	1.701	0.064	0.631	0.529	0.401	2.495

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , † $p < .10$

**Table 7***Regression Analysis Summary for Independent Variables Predicting Days in Out of Home Care at Wave 3*

Variable	Model I			t	p	Collinearity Statistics	
	B	SE B	$\beta$			tolerance	VIF
Child age in years	-19.646	13.994	-0.089	-1.404	0.162	0.982	1.018
Child gender	31.035	53.209	0.038	0.583	0.56	0.964	1.037
Race: American Indian	89.541	84.207	0.072	1.062	0.289	0.87	1.149
Race: Asian/ Hawaiian/ Pacific Island	28.666	126.444	0.015	0.227	0.821	0.916	1.092
Race: White	57.567	57.567	-0.15	-2.181	0.03	0.847	1.181
<hr/>							
Variable	Model I			t	p	Collinearity Statistics	
	B	SE B	$\beta$			tolerance	VIF
Child age in years	-13.214	14.628	-0.06	-0.903	0.367	0.897	1.114
Child gender	35.052	53.526	0.042	0.655	0.513	0.951	1.052
Race: American Indian	78.448	85.077	0.063	0.922	0.357	0.851	1.175
Race: Asian/ Hawaiian/ Pacific Island	-9.309	127.596	-0.005	-0.073	0.942	0.897	1.114
Race: White	-152.901	60.665	-0.182	-2.52	0.012	0.761	1.314
W-J Letter-Word Identification Standard Score	-1.504	1.765	-0.083	-0.852	0.395	0.422	2.372
W-J Applied Problems Standard Score	1.939	2.084	0.092	0.93	0.353	0.411	2.436
Social Skills Standard- Secondary	-1.846	2.245	-0.07	-0.822	0.412	0.547	1.828
Internalizing Standard Score	1.692	3.165	0.048	0.535	0.593	0.504	1.986
Externalizing Standard Score	1.598	3.467	0.046	0.461	0.645	0.397	2.518

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , † $p < .10$

## Appendix A



### Institutional Review Board

*Mailing Address:*  
Division of Research  
777 Glades Rd., Bldg. 80, Rm. 106  
Boca Raton, FL 33431

Tel: 561.297.0777 Fax: 561.297.2573

<http://www.fau.edu/research/research.html>  
Michael Whitehurst, Ed.D., Chair

DATE: December 20, 2013

TO: Heather Farineau, PhD  
FROM: Florida Atlantic University Social, Behavioral and Educational Research IRB

IRBNET ID #: 516591-2  
PROTOCOL TITLE: [516591-2] Exploring outcomes of youth and families in the National Survey of Child and Adolescent Well-Being

PROJECT TYPE: *Amendment/Modification*  
ACTION: APPROVED

APPROVAL DATE: December 20, 2013  
EXPIRATION DATE: December 19, 2014

REVIEW TYPE: Expedited Review  
REVIEW CATEGORY: Expedited review category # B7

Thank you for your submission of Amendment/Modification materials for this research study. The Florida Atlantic University Social, Behavioral and Educational Research IRB has APPROVED your *Amendment/Modification* to your existing project. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

- This study is approved for secondary analysis of data variables from the Restricted Release of the National Survey of Child and Adolescent Well-Being (NSCAW). This approval supersedes the previous exempt study approval to analyze data from the general release of NSCAW.
- A waiver of informed consent has been granted for this study based on the justification provided.
- **\*\*\*Please note that any revision to previously approved materials or procedures, including modifications to numbers of subjects, must be approved by the IRB before it is initiated.** Please use the amendment form to request IRB approval of a proposed revision.
- All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All regulatory and sponsor reporting requirements should also be followed, if applicable.
- Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.
- Please note that all research records must be retained for a minimum of three years.
- **This approval is valid for one year.** A Continuing Review form will be required prior to the expiration date if this project will continue beyond one year.

If you have any questions or comments about this correspondence, please contact Angela Clear at

Institutional Review Board  
Research Integrity/Division of Research  
Florida Atlantic University  
Bldg. 80, Rm. 106  
Boca Raton, FL 33431  
Phone: 561-297-0777

\* Please include your protocol number and title in all correspondence with this office.

**This letter has been electronically signed in accordance with all applicable regulations,  
and a copy is retained within our records.**

## Appendix B



**Institutional Review Board**  
Division of Research  
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Boca Raton, FL 33431  
Tel: 561.297.1383  
[fau.edu/research/researchint](http://fau.edu/research/researchint)

Charles Dukes, Ed.D., Chair

DATE: September 11, 2019

TO: Heather Thompson, PhD  
FROM: Florida Atlantic University Social, Behavioral and Educational Research IRB

IRBNET ID #: 516591-11  
PROTOCOL TITLE: [516591-11] Exploring outcomes of youth and families in the National Survey of Child and Adolescent Well-Being

PROJECT TYPE: *Continuing Review/Progress Report*  
ACTION: APPROVED

APPROVAL DATE: September 11, 2019  
EXPIRATION DATE: September 11, 2020

REVIEW TYPE: Expedited Review  
REVIEW CATEGORY: Expedited review category # B7

Thank you for your submission of Continuing Review/Progress Report materials for this research study. The Florida Atlantic University Social, Behavioral and Educational Research IRB has APPROVED your *Continuing Review/Progress Report*. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

- This study is approved for secondary analysis of data variables from the Restricted Release of the National Survey of Child and Adolescent Well Being (NSCAW).
- **\*\*\*Please note that any revision to previously approved materials or procedures, including modifications to numbers of subjects, must be approved by the IRB before it is initiated.** Please use the amendment form to request IRB approval of a proposed revision.
- All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All regulatory and sponsor reporting requirements should also be followed, if applicable.
- Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.
- Please note that all research records must be retained for a minimum of three years.
- **This approval is valid for one year.** A Continuing Review form will be required prior to the expiration date if this project will continue beyond one year.

If you have any questions or comments about this correspondence, please contact Danae Montgomery at

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\* Please include your protocol number and title in all correspondence with this office.

**This letter has been electronically signed in accordance with all applicable regulations,  
and a copy is retained within our records.**

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