

ABSTRACT

Title of Document: INTERNALIZING AND EXTERNALIZING
BEHAVIORS OF ADOLESCENTS
IN KINSHIP AND FOSTER CARE:
FINDINGS FROM THE NATIONAL SURVEY OF
CHILD AND ADOLESCENT WELL-BEING

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The mission of the United States child welfare system is to promote safety, permanency and well-being for children and youth. The underlying assumption of out-of-home placement is that kinship and foster families provide a safer, better quality care environment than biological families. Yet, decades of research have found out-of-home placement to be associated with negative child outcomes. This study answers the question, “What is the effect of out-of-home placement in kinship or foster care on adolescent behavior?” It contributes to previous findings using a series of hierarchical linear regressions in an improved research design. Data are drawn from a subset of 839 adolescents in the National Survey of Child and Adolescent Well-being (NSCAW). Measures at baseline, and 18 and 36 months after baseline allow for a longitudinal examination of the development of problem behaviors over time.

After correcting methodological shortcomings in previous research, this study finds no negative effects of kinship and foster care on behavior. Kinship care has a direct protective effect on girls’ externalizing behavior and foster care has an indirect protective effect on girls internalizing and externalizing behavior. Selection effects are corrected by

considering the influence of pre-placement circumstances on post-placement outcomes. Outcomes for youth placed out-of-home are compared to the best available comparison group of youth that are investigated by Child Protective Services, but not placed.

This study also advances our theoretical understanding of how placements affect child outcomes. Results suggest that the current care environment, as measured by child/caregiver relationship and parental monitoring, is a better predictor of adolescent behavior than the out-of-home placement experience. Foster caregivers provide more parental monitoring than biological parents, but the child/caregiver relationship might not be as good in foster placements as it is in the biological family. There is no difference in child/caregiver relationship quality in kinship families relative to biological families and there is a trend toward increased parental monitoring from kinship caregivers compared to biological parents.

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2007

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CHAPTER 1: INTRODUCTION

Approximately 872,000 children were abused or neglected by their family in 2004 (U.S. Children's Bureau, Walter R. McDonald and Associates, & American Humane, 2006). Experiencing maltreatment, and the ecological circumstances that accompany maltreatment, place children at considerable risk for negative outcomes. The goal of child welfare intervention is to protect the child, thereby interrupting a path toward negative adult outcomes (Kerman, Wildfire, & Barth, 2002) and facilitating successful transitions throughout the life course (Wulczyn, Barth, Yuan, Jones Harden, & Landsverk, 2005). An array of services is organized to support this mission, including out-of-home placements in substitute families.

On any given day, over 500,000 youth are living in out-of-home placements in the child welfare system (Child Welfare Information Gateway, 2005). *Family foster care* places children in the family home of non-relative adults who have been assessed, trained and licensed (Child Welfare Information Gateway, 2006). Foster families serve approximately 46% of all youth in out-of-home placements (Child Welfare Information Gateway, 2005). *Kinship care* places youth in the family home of adult relatives or friends who have been assessed for safety and may or may not be licensed (Child Welfare Information Gateway, 2006). Kinship caregivers serve about 23% of all youth in out-of-home placement (Child Welfare Information Gateway, 2005). The underlying assumption of intervention through out-of-home placement is that kinship and foster families provide a safer, better quality care environment than biological families. Parenting effectiveness, by the state or by private citizens, is particularly important during adolescence as youth prepare to transition to adulthood.

Adolescent Development in Out-of-Home Care

During adolescence, youth are developing their identity and obtaining the life skills that will be necessary for independence. At this life stage, acting out behaviors are more severe than those of younger children and can include delinquent, violent, running away, or destructive behaviors. Behaviors also begin to carry more serious and longer-lasting consequences for youth and others in the community.

Adolescence is a critical developmental period for successful transition to adulthood. Erikson (1968) defined the critical developmental task of adolescence as establishing an identity. Youth must reflect on their experiences to develop a self-concept that includes their strengths and weaknesses. Their self-concept must establish who they are with respect to their past, present and future. They must also construct a future orientation that is consistent with their self-concept and self-assessed abilities to guide their decision making (Harter, 1990).

Symbolic interactionists Cooley (1902) and Mead (1934) emphasized the importance of social interactions in defining the self. They introduced the “looking glass self” and “generalized other” as tools that individuals use to assess others’ perceptions of them. Those perceptions are then internalized into their self-concept so that their self-assessment is consistent with their perceptions of “objective” assessments. The egocentrism of adolescents makes them feel as though they are constantly being evaluated and magnifies the importance of others’ perceptions in the identify formation process (Elkand, 1967).

Developmental psychopathology emphasizes the interplay between normal and abnormal development, continuity and discontinuity, risk and protective factors, and

internal and external influences on the individual (Cicchetti & Toth, 1995). It describes how children's ability to cope with the challenges of maltreatment is evidenced in their ontogenic development. Risk and protective factors from all ecological levels pose threats and opportunities to staying on target developmentally.

Youth who have been abused or neglected and placed in a substitute family face unique challenges to healthy development, including substantial risk factors and abnormal and discontinuous life circumstances. Youth have been removed from their family at a time when their main developmental task is to establish an identity. In order to successfully establish their identity, youth must deal with past experiences and confront the trauma associated with abuse or neglect by their parents (Harter, 1990). Their new placement will come with new family members, new routines, and possibly a new school with new peers and teachers. All of these changes come with a new identity--*foster child*--which singles youth out as abnormal and carries negative behavioral expectations (Kools, 1997).

Placement out-of-home also offers an opportunity for intervention. In a safe home environment with better parenting, youth can learn appropriate social roles and related behavior. Youth might live in safer communities with greater opportunities to grow and develop. Free of the risks that characterized their biological family home, and supported by an array of supportive caretakers, youth could be better positioned to grow and develop into adulthood normatively. It is important for adolescents to be developmentally prepared to enter the next phase of their life because failure to accomplish early developmental tasks results in enduring vulnerabilities throughout the

life span (Cicchetti & Toth, 1995). The level of support and protection adolescents receive will be greatly diminished, if not entirely cut off, as youth transition to adulthood.

Child welfare intervention is designed to protect against harmful experiences in favor of positive outcomes. A study of foster care dynamics in 12 states from 1983-1998 revealed that the proportion of adolescents entering out-of-home care has been increasing steadily since 1994 (Wulczyn, Hislop, & Goerge, 2000). Each year, more youth are relying on the child welfare system to prepare them for independence. However, critics of the child welfare system have questioned whether the state is truly capable of quality parenting for youth in out-of-home care (Bullock, Courtney, Parker, Sinclair, & Thoburn, in press). Research literature has historically suggested bleak outcomes for children who experience out-of-home care, particularly with respect to emotional or behavioral problems.

Adolescent Behavior in Out-of-Home Care

A review of child welfare literature revealed “consistent evidence that the rate of emotional, social, behavioral and educational problems found in children [placed out of home] is substantially higher than that in the general population” (Rutter, 2000, p.685). Researchers generally distinguish between two types of behavior problems: internalizing and externalizing. Both types have the potential for negative consequences for adolescents as they develop identity and prepare to transition to adulthood.

Internalizing Behavior

Internalizing behaviors are defined as emotional distress that is directed inward, such as depression, anxiety, or withdrawal. In a review of three decades of literature,

authors found “well-supported” evidence of increased levels of mental illness and related functional impairment for youth involved with child welfare (Racusin, Maerlender, Sengupta, Isquith, & Straus, 2005). Estimates of current foster youth in Los Angeles found that 20% of 6-12 year olds scored in the clinically significant range for internalizing behavior problems (Zima et al., 2000). Research on the National Survey of America’s Families found that 27% of 6-17 year olds in foster care had emotional and behavioral problems compared to 7% in parent care and 13% in high-risk parent care--characterized by living with a single parent, low income, or limited parental education (Kortenkamp & Ehrle, 2002). Research using the National Longitudinal Survey of Adolescent Health data estimated that 31% of 17-18 year olds in foster care have emotional/behavioral problems (Courtney, Terao, & Bost, 2004). None of these studies controlled for behaviors prior to entering out-of-home placements.

Studies have also found that higher rates of internalizing problems for foster youth extend into adulthood. A sample of older adolescents aging out of child welfare placements in Wisconsin exhibited considerably more psychological distress than the general population (Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001). Over a third of transition-age youth currently or formerly in foster care in Chicago had at least one mental health diagnosis (Courtney et al., 2005). The National Household Survey on Drug Abuse revealed higher levels of past-year psychiatric symptoms and substance use among adolescents involved with foster or kinship care than those never placed out-of-home (Pilowsky & Wu, 2006). According to research using the National Survey of Families and Households, 21% of adults with a history of foster care placement reported feeling depressed compared to 15% without a history of foster care. Foster care placement was

the strongest predictor of adult depression, controlling for demographic characteristics (Cook-Fong, 2000). None of these studies corrected for behavior prior to placement.

Externalizing Behavior

Externalizing behaviors are defined as emotional distress that is directed outward, such as aggression, violence or delinquency (Orme & Buehler, 2001). Elevated levels of externalizing disorders among foster youth has been a robust finding across studies conducted in the 1990's (Keil & Price, 2006). Twenty-five percent of a sample of 6-12 year old youth in the Los Angeles foster care system scored in the clinically significant range for externalizing behavior problems (Zima et al., 2000). Rates of fight initiation were higher for foster youth ages 11-15 than the general population in a multi-site evaluation of child welfare programs (Mason et al., 2003). In a multi-state longitudinal study, the proportion of 19 year olds engaging in violent activity was significantly higher for emancipated foster youth than for the general population (Courtney et al., 2005). None of these studies corrected for behavior prior to placement.

Higher rates of externalizing behavior, as measured by delinquent activity, have also been found in adults who experienced out-of-home placement. A weighted average of previous studies' sample and effect sizes estimated that 32% of adults discharged from a child welfare placement had been arrested or incarcerated as a result of delinquent behavior (Kerman et al., 2002). An examination of national Add Health data revealed that former foster youth ages 17-18 engaged in delinquent activity with greater frequency than the general population; over half of current and former foster youth had been involved with the criminal justice system (Courtney et al., 2004). None of these studies corrected for behavior prior to placement.

Explaining Increased Behavior Problems in Out-of-Home Care

There are four main reasons why adolescents in out-of-home placement are at increased risk for behavior problems. First, most youth involved with child welfare live in families and communities that are at high risk (Carpenter, Clyman, Davidson, & Steiner, 2001; Simms, Dubowitz, & Szilagyi, 2000). Children in out-of-home placement are likely to have come from homes characterized by poverty and instability (Kortenkamp & Ehrle, 2002). Parents of children in out-of-home care have a wide array of personal problems--including mental and physical illness, substance abuse, and criminal activity--and significant parenting problems that create high-stress home environments (Rutter, 2000).

Second, family stress theory asserts that high-stress environments place parents at increased risk of poor parenting, which could include child maltreatment (Conger & Conger, 2002; Conger et al., 1994; Robertson et al., 1991). Neglect, physical abuse, or sexual abuse introduce physical or psychosocial trauma for the child. This trauma could influence the development of emotional or behavioral problems in adolescence (Clausen et al., 1998; Minty, 2000; Rutter, 2000; Simms et al., 2000).

Third, intervention by child welfare officials could negatively affect child behavior. Out-of-home placements create substantial disruption from daily life as the child is removed from their biological family home. Separation from the biological family is generally traumatic (Simms et al., 2000) and could influence problem behaviors (Clausen et al., 1998). Experiences in out-of-home care could also affect negative behaviors (Rutter, 2000). Inadequate caretaking by paid caregivers could encourage problem behavior (Minty, 2000). Constant movement--or threat of movement--between

foster or kinship placements could create turmoil and stress that cause youth to react with internalizing or externalizing behaviors (Minty, 2000).

Finally, selection issues arise because decisions about out-of-home placement are not random. Caseworkers and courts make recommendations for placements based upon a number of personal and institutional factors. As a result, youth in different placements should be expected to vary in important ways. For example, adolescents are developmentally less likely than younger children to be placed out-of-home for maltreatment because they are relatively better equipped to protect themselves (Wulczyn et al., 2005). Instead, many adolescents become involved with the child welfare system because their behavior problems are uncontrollable in their family and community of origin (Barth, Wildfire, & Green, 2006).

Rationale for Research

Despite the intention of child welfare to promote positive outcomes, studies of behavioral outcomes for youth who have experienced out-of-home placement have generally failed to find protective effects. However, previous research has serious shortcomings that make it impossible to make conclusions about programmatic efficacy. This study will fill gaps in the child welfare literature by addressing three main methodological and theoretical limitations in previous research.

Selection Effects

The greatest flaw in previous research examining child behavior during or after out-of-home placement is the failure to account for behavior prior to placement. The causal direction between behavior problems and out-of-home placement has not been

established (Orme & Buehler, 2001) and researchers have not determined whether post-discharge differences in well-being are due to the intervention or due to pre-discharge, or pre-entry, characteristics (Farruggia, Greenberger, Chen, & Heckhausen, 2006).

Care Environment

Much of the previous literature evaluating the effects of out-of-home placement on behavior has not included mediating processes to account for how or why placement should influence outcomes. This is due, in part, to over-reliance on administrative data that do not measure mediating variables. Previous research also lacks an explicit framework for understanding how placements should affect outcomes.

Family stress theory asserts that parenting behavior, as influenced by economic or other hardship, is the primary influence on adolescent behavior (Conger & Conger, 2002; Conger et al., 1994; Robertson et al., 1991). This theory encourages the examination of care environments and parenting practices experienced by youth in kinship care, family foster care, and remaining at home with their biological parents. Applied to child welfare, this theoretical framework is particularly relevant because of the many stressors faced by biological families prior to placement.

Comparison Group

Previous literature does little to advance our understanding of the effects of placement in out-of-home care relative to the alternative of remaining in the home of a family reported for child maltreatment. Studies have generally had no comparison group or compared youth to the general population through national surveys or cut-off scores on standardized measures. Families who come to the attention of child welfare officials are

unique because they all have exhibited behaviors that prompted a report of maltreatment. While not all reports are founded, families who are reported could be expected to be different in significant ways from families who are not reported. Youth who are investigated, but not placed, provide the best comparison group to examine the effects of out-of-home placement, and will be used in this study.

The methodological improvements in this study will allow for a more accurate examination of the effects of child welfare intervention through out-of-home placement. Effects of placement in traditional foster care or kinship care on behavior will be assessed relative to a comparison group that remains at home. Analyses will correct for selection into placement to control for preexisting differences between the three groups. Theoretical improvements will provide a framework for future child welfare research that clearly identifies mechanisms through which intervention is expected to produce positive outcomes. Results of this research can be used to make program and policy recommendations to improve services to vulnerable children and families.

CHAPTER 2: LITERATURE REVIEW

This chapter presents the theoretical perspectives and conceptual framework that guide this study. Previous research is summarized and critiqued. The role of this study in advancing the existing literature is described, and specific research questions and hypotheses are provided.

Theoretical/Conceptual Framework

Ecological frameworks place adolescent behavior into a context that includes influences at the individual, family, and community levels. Family stress theory specifies how ecological circumstances affect parental stress and behavior. Developmental and transactional theories help to describe how ecological circumstances increase the risk of maltreatment and how maltreatment affects child development.

Ecological Framework

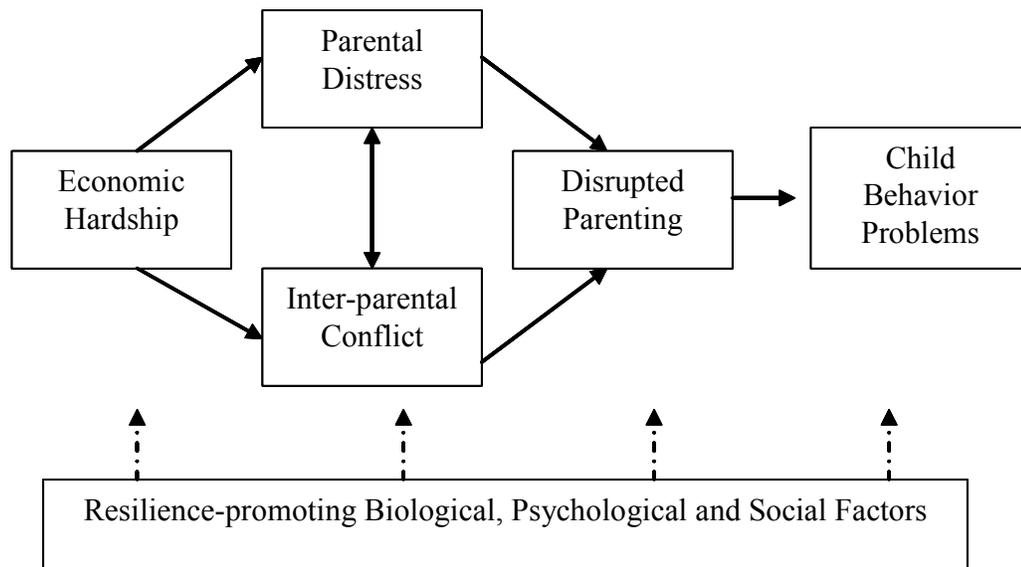
The ecological framework places human development within a wider context where normative development can be facilitated or hindered by ecological experiences (Wulczyn et al., 2005). Four nested and interconnected systems are posited by Bronfenbrenner (1979), and have been applied to a number of child and family issues, including child maltreatment by Belsky (1980; 1993). At the center of Belsky's (1980) ecological integration for child maltreatment is the child and his or her *ontogenic development* where normative biological and social developmental processes occur. The *microsystem* represents the immediate family setting in which maltreatment occurs and interactions between parents and other caregivers take place (Belsky, 1980). The *exosystem* is the larger social structure in which the family is embedded, and includes the

array of risks for maltreatment (Belsky, 1980). The *macrosystem* includes the cultural patterns and ideologies that shape the exosystem (Belsky, 1980). The *chronosystem* accounts for the developmental history of the individual over time and across contexts (Bronfenbrenner, 1986). Within the ecological framework, maltreatment occurs within a variety of contexts, and it is multiply determined by factors working at all ecological levels (Belsky, 1993).

Family Stress Theory

The ecological framework is helpful in identifying the multiple influences on adolescent behavior, both positive and negative, but does little to explain how these multiple influences affect behavior. Family stress theory, depicted in Figure 1 below, provides a theoretical framework with explicit causal relationships specifying how ecological circumstances can affect child outcomes (Conger & Conger, 2002; Conger et al., 1994; Robertson, Elder, Skinner, & Conger, 1991).

Figure 1. Family stress theory



According to family stress theory, economic hardship creates stress and pressure for parents and contributes to inter-parental conflict. Parental stress and adverse interactions between partners then spill over to disrupt parenting. Children and their behaviors are affected by economic hardship only through the mediating effects on parent/child interaction (Conger & Conger, 2002).

Social support has been introduced as a possible protective mechanism within family stress theory to buffer the ill effects of stress on conflict and parenting (Robertson et al., 1991). Most recently, authors have included “resilience-promoting biological, psychological and social resources” which offer main or compensatory effects and moderating or buffering effects (Conger & Conger, 2002) that are flexible enough to incorporate positive influences at all ecological levels.

Transactional Theory

While family stress theory is helpful for describing disruptions in parenting, it is insufficient for explaining parenting disruptive enough to constitute child maltreatment. Certainly most families living in poverty do not abuse or neglect their children. Cicchetti and Rizley (1981) offer a distinction between transitory and enduring risk factors to help explain how environmental forces, caregiver characteristics, and child characteristics influence each other and make reciprocal contributions to developmental outcomes. Transient risk factors include relatively short-term conditions--like loss of job, illness, accident--that can create stress in a family. Enduring risk factors are long-lasting parent, child or environmental characteristics--like parental substance abuse or mental illness, or child special needs--that increase the risk of child maltreatment. Risks may be biological, historical, psychological or sociological in nature (Cicchetti & Rizley, 1981; Cicchetti &

Toth, 1995). It is the accumulation of enduring risk factors, or a transient risk factor in the midst of other enduring risk factors, that put families most at risk for child maltreatment. Families are particularly susceptible to maltreatment when there are not adequate resilience-promoting factors to buffer the risk factors.

Framework for Child Welfare Intervention

Theorists agree that protective factors (Conger & Conger, 2002) or compensatory factors (Cicchetti & Rizley, 1981) should be included as buffers to the risks associated with child maltreatment. Child welfare offers an organized intervention in response to child maltreatment. Figure 2 presents a graphic representation of the levels presented in Belsky's (1980) ecological integration for child maltreatment. It expands on the child welfare interventions discussed in the work of Wulczyn and colleagues (2005) to provide specific mechanisms through which child welfare attempts to alter risks at all ecological levels to protect the child from maltreatment and support healthy development.

One possible type of child welfare intervention, out-of-home placement, operates on assumptions in line with family stress and related theories. It is assumed that the parenting behavior of the biological family is sufficiently dangerous that the child must be removed from the home for their own protection. The child is then placed with a substitute kinship or foster family who will offer a safer home with improved parenting. Intervention in the microsystem should change immediate and proximal risk factors to protective factors, which should ultimately lead to improved outcomes for the child. When intervention is necessary, the type of intervention is shaped by more distal considerations in the exosystem and macrosystem.

Figure 2. Ecology of child welfare intervention

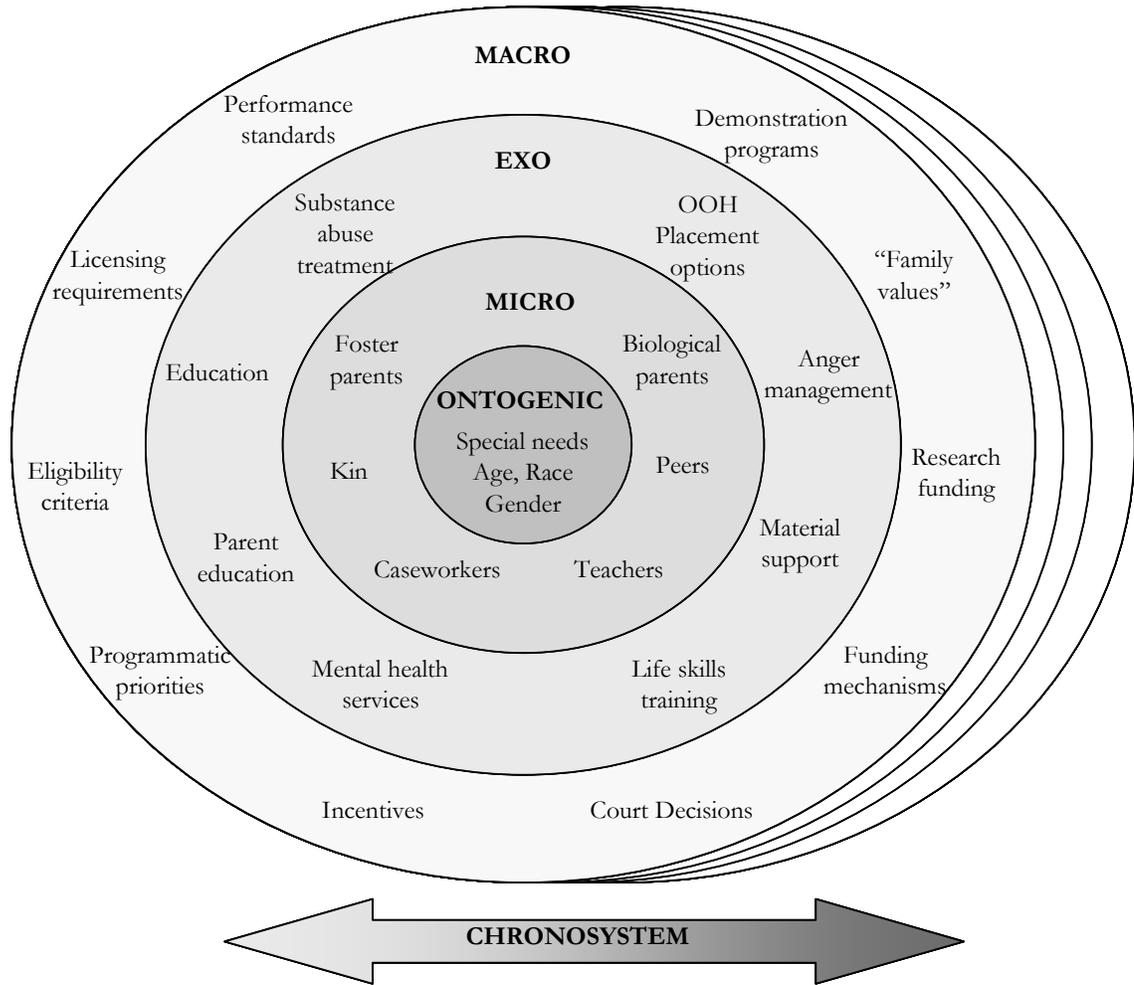


Figure 3. Family stress model for child welfare

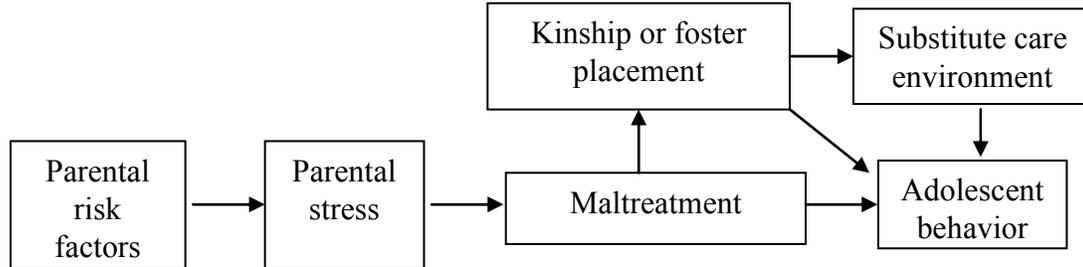


Figure 3 presents a modified family stress model designed specifically for child welfare. The Family Stress Model for Child Welfare builds upon previous theoretical work in three ways. First, it expands on economic troubles of family stress theory to incorporate other kinds of enduring or transient risk factors that place families at risk for maltreatment. Parents investigated by child welfare often are affected by enduring vulnerabilities--like physical or mental illness, developmental disabilities, substance abuse, a history of domestic violence or abuse or neglect as a child--that increases stress on the family. Risk and hardship create stress and pressure for parents and adversely affects their parenting behavior, potentially resulting in maltreatment.

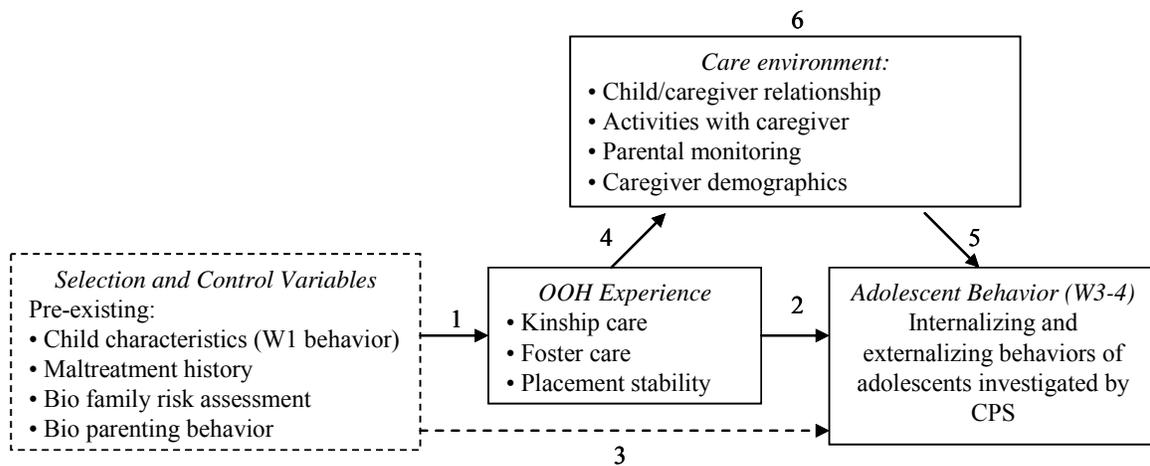
Second, the revised model removes inter-parental conflict in order to accommodate the modal family structure involved in child welfare: single parent families (Children's Bureau, 2004). It is assumed that the stress and pressure experienced by a single parent can influence parenting behavior without first affecting a co-parent. In theory, the effects of stress and pressure on parenting may be stronger and more immediate without a partner to take some of the heat or share the burden. This modification maintains the theoretical integrity of the original model because the causal mechanisms are the same and two-parent families can still fit in the modified model.

The third modification includes out-of-home placement in kinship or foster care as a specific protective mechanism offered by the child welfare system. The underlying assumption of out-of-home placement is that placing the child with a substitute family introduces substitute parenting behavior that is superior to that of the biological family from which they were removed. This model incorporates an indirect protective effect of placement on behavior via improved parenting. However, out-of-home placement may also directly affect adolescent behavior through the disruption caused during removal from the biological family home. Youth may miss their parents. Often they must change schools, neighborhoods, friends, and churches and adjust to a completely new living arrangement. These rapid changes could be difficult for youth to deal with and adversely affect behavior. The true effects of foster or kinship placement on behavior are not clearly understood.

Conceptual Framework

This study begins to answer many of the unanswered questions about determinants and consequences of out-of-home placement. It defines specific mechanisms within the Family Stress Model for Child Welfare using variables from the Ecological Model of Child Welfare Intervention. Figure 4 presents the conceptual model that guides the study.

Figure 4. Path model



Current State of Knowledge: Selection Issues

This section reviews relevant literature about the effects of out-of-home placement on adolescent behavior. Though there are several pathways to out-of-home placement, this study will focus on youth investigated by Child Protective Services (CPS). Collected literature includes populations of youth placed in kinship care or foster care in the United States. This literature review is organized by the hypothesized relationships depicted in numbers one through six on the path model, below. Selection will be addressed first, followed by care environment issues.

Relationships one, two and three depicted in the conceptual model pertain to selection issues—how pre-existing characteristics and experiences can exaggerate negative effects of out-of-home placement on behavior. Literature examining each relationship will be reviewed in turn, including 1) selection into out-of-home placement, 2) impact of out-of-home placement on behavior, and 3) impact of control variables on behavior.

1. Selection into Out-of-Home Placement

The studies reviewed in this section assess the correlates of placement in out-of-home care. Results of previous literature support assertions of family stress theory. Children placed out-of-home experienced many stressors that influence parenting behavior and child behavior. Youth placed in foster care faced relatively greater economic hardships and more severe maltreatment histories in their family of origin than youth in kinship care. When included, child special needs and behavioral issues are important predictors of placement experiences. Studies in this section are organized by

operationalization of the dependent variable, placement experience, in each study: any out-of-home care, kinship versus foster care, and placement stability.

Selection into Any Out-of-Home Placement

Several studies of placement decisions focus on whether or not a child entered out-of-home care, but do not distinguish types of placement. This section reviews five studies that used multivariate analyses to predict any out-of-home placement. Results are organized by independent variable.

Child Characteristics. Two studies using data from Illinois found that infants and toddlers were significantly more likely than older youth to be placed out-of-home (Harris & Poertner, 2000; Tittle et al., 2000), probably because of their extreme vulnerability to physical abuse. Historically, adolescents have had the second-highest rates of out-of-home placement—largely due to child behavior problems (Wulczyn et al., 2005). No differences in likelihood of placement were found by gender (Harris & Poertner, 2000; Tittle et al., 2000).

Research has shown that there is racial disproportionality when considering the percent of minority youth in care relative to their percentage in the general population (Courtney & Skyles, 2003; Wulczyn et al., 2000). Though some studies have not found race to be a predictor of out-of-home placement (Harris & Poertner, 2000; Tittle, Harris & Poertner, 2000; Zurvain & DePanfilis, 1997) one study using California administrative data found that black youth had a significantly greater likelihood than white youth of being placed in foster care. Race effects were reduced, but remained significant predictors of foster care placement, after maltreatment, age, zip code poverty, and number of siblings were added as controls (Needel, Brookhart, & Lee, 2003).

Racial disproportionality in child welfare can be explained with respect to “front end” child welfare processes like investigation (Fluke, Yuan, Hedderson, & Curtis, 2003) and substantiation (Ards, Myers, Malkis, Sugrue, & Zhou, 2003), as well as “back end” child welfare processes like adoption (Brooks & James, 2003) and reunification (Harris & Courtney, 2003). Some promising evidence suggests that racial gaps seen in earlier entry cohorts are closing in later-entry cohorts (Wulczyn, 2003), but child race should continue to be examined as a predictor of placement, especially among adolescents where racial disparity rates are larger than all other age groups except infants (Wulczyn, Lery, & Haight, 2006).

Only one study included measures of child behavior as a predictor of any out-of-home placement. Using the National Survey of Child and Adolescent Well-being (NSCAW), researchers found that a clinical/borderline range score on the Child Behavior Checklist was associated with a 2.44 increase in the odds of placement in non-urban areas. Behavior problems failed to predict placement decisions in urban areas where poverty and other parental characteristics were better predictors of placement (Barth et al., 2006). This finding could be influenced by the scarcity of alternatives to out-of-home placement for non-urban youth in need of mental health treatment. Without another place to turn, parents look to the child welfare system for access to treatment (U.S. General Accounting Office, 2003).

Maltreatment History. Neglect was associated with a greater likelihood of placement compared with physical abuse in a review of Baltimore Child Protective Services (CPS) case records (Zurvain & DePanfilis, 1997). Administrative data from North Carolina revealed a similar pattern of neglectful parenting being a stronger

predictor of placement than abusive parenting; sexual abuse did not predict placement (Runyan, Gould, Trost, & Loda, 1981). A history of previous maltreatment of any type, as indicated by previous reports to CPS, is a significant predictor of out-of-home placement in Illinois data (Harris & Poertner, 2000; Tittle et al., 2000). These findings suggest that parenting behavior is an important predictor of placement. Neglect is most often perpetrated by the parent while physical or sexual abuse could be perpetrated by non-parents. Evidence suggests that a pattern of parenting behavior, as indicated by a prolonged period of neglect or multiple CPS reports, had an important influence on placement decisions.

Parent risk factors. Parental hardships--including receipt of AFDC or low SES, early child bearing, and being unmarried--were the strongest predictors of placement decisions for those studies that included them (Harris & Poertner, 2000; Runyan et al., 1981; Zurvain & DePanfilis, 1997). Inability to pay for basic needs was a predictor of placement in urban areas (Barth, Wildfire, & Green, 2006). Poverty, an important contributor to neglectful parenting is often associated with other kinds of parental hardships.

Children whose parents abused substances or experienced mental health or developmental issues were also more likely to be placed out-of-home (Zurvain & DePanfilis, 1997). An index of the total number of parent risk factors was the strongest predictor of out-of-home placement using nationally representative NSCAW data on youth investigated by CPS. Risk factors included on the index were impaired parenting, serious mental illness, physical impairment, intellectual/cognitive impairment, trouble meeting basic needs, active domestic violence and active substance use (Phillips, Burns,

Wagner & Barth, 2004). Recent analysis of NSCAW data found that parental risk factors of having mental illness, substance abuse, or active domestic violence were the strongest predictors of placement decisions, controlling for poverty, child age, and child behavior. Having one or more of these risk factors was associated with a 5.60 increase in odds of placement in urban areas and a 3.60 increase in odds of placement in non-urban areas (Barth et al., 2006). Studies demonstrating a link between parental hardship and the need for substitute parenting through out-of-home placements support the use of the family stress model for this area of research. Families involved with the child welfare system face multiple stressors that affect parent and child behavior.

Parenting Behaviors. Despite its theoretical relevance, no studies measured parenting stress. Researchers used administrative data (Harris & Poertner, 2000; Runyan et al., 1981) or reviewed case records (Tittle et al., 2000; Zurvain & DePanfilis, 1997) that did not include stress variables. One study included a measure of parenting skills that failed to reach statistical significance in multivariate prediction of placement. However, the measures of parent and child behavior were abstracted from case records and not available for all cases (Tittle et al., 2000). Another study included impaired parenting as one item on an index of parent risk factors, but the parenting items were not individually shown so their unique effects remain unknown (Phillips et al., 2004).

Selection into Kinship Care versus Foster Care

Three studies used multivariate procedures to predict placement in kinship care or foster care. Two used administrative data of children in out-of-home care, one from one county in Minnesota (Beeman, Kim, & Bullerdick, 2000) and the other from the entire state of California (Grogan-Kaylor, 2000). One study used nationally representative

NSCAW data on youth referred for CPS investigation (Phillips et al., 2004). Results are organized by independent variable.

Child Characteristics. In all three samples, African American youth had a greater likelihood than other racial/ethnic groups of being placed with relative caregivers, although race was not statistically significant in the nationally representative sample. One study found boys more likely than girls to enter kinship care instead of family foster care (Keller et al., 2001) and a different study found no gender differences in type of placement (Beeman et al., 2000). Results on age were contradictory; one study found that youth ages 12 and older are more likely to be placed in kinship care (Beeman et al., 2000), and the other found that youth younger than 12 years are more likely to be placed in kinship care (Grogan-Kaylor, 2000).

Youth who had a health problem (Grogan-Kaylor, 2000) or a disability (Beeman et al., 2000) were more likely to be placed in foster care than kinship care. Children with prior placements were less likely to be placed in kinship care than traditional foster care (Beeman et al., 2000). Using nationally representative data, a clinical-range score on the Child Behavior Checklist was the strongest predictor of placement in foster care instead of kinship care. Youth with severe emotional/behavioral problems were two and a half times more likely to enter traditional foster care than kinship care (Phillips et al., 2004).

Maltreatment History. There were no differences in placement type by type of maltreatment in the Minnesota data (Beeman et al., 2000). In California, being neglected was a predictor of kinship placement over foster care (Grogan-Kaylor, 2000). The total number of types of maltreatment was a significant predictor of non-relative foster care over kinship care using nationally representative data (Phillips et al., 2004).

Parent risk factors. Removal because of parental substance abuse predicted placement in kinship care over foster care (Beeman et al., 2000). If the family of origin was eligible for AFDC, the child was more likely than ineligible children to be placed in foster care (Grogan-Kaylor, 2000). More parental risk factors were associated with an increased likelihood of placement in foster care over kinship care (Phillips et al., 2004).

Selection into Placement Stability

Three studies have used multivariate techniques to predict placement stability. Two examined a sample of youth ages 0-16 placed out-of-home in San Diego (James, 2004; James, Landsverk & Slymen, 2004). The third sampled 246 children ages 5-12 in kinship and foster care, also in San Diego (Chamberlain et al., 2006). These studies examined the effects of child, maltreatment, and placement characteristics, but not theoretically important characteristics of the family of origin or the substitute foster or kinship caregivers.

Child characteristics. Child race or gender was not a significant predictor of placement stability in any of the three studies. Being older increased the likelihood of placement change (James, 2004) and having an unstable placement history (James et al., 2004) in the samples with ages that ranged from 0-16. Baseline age was not a significant predictor of placement change for a sample of youth ages 5-12, possibly because these youth all fall within relatively similar developmental periods so results will not compare the very young children with the older youth (Chamberlain et al., 2006).

Child behavior problems were a consistent predictor of placement change after controlling for child demographics. Externalizing behavior problems were associated with a 243% increased risk of placement change (James, 2004). Baseline behavior

increased the hazard for disruption 17% for every problem behavior noted among youth ages 5-12 (Chamberlain et al., 2006). A clinical-range score on externalizing behavior problems was the strongest predictor of an unstable placement pattern (James et al., 2004).

Maltreatment history. Two studies assessed the effects of maltreatment on placement change, controlling for internalizing and externalizing behavior problems. One found that youth who had been emotionally abused were less likely to experience a placement change, but there were no differences by other types of abuse (James, 2004). The other found no difference by emotional abuse, but found that sexually abused youth were more likely to have unstable placements than youth who were not sexually abused (James et al., 2004). These results should be interpreted with caution; researchers noted difficulty interpreting maltreatment variables, particularly because youth often experience more than one type of abuse. Future research should include a total number of types of abuse or create mutually exclusive and exhaustive categories of maltreatment type.

Placement type. Two studies examined the effects of type of placement on placement stability. In both instances, youth in non-kin foster care had a significantly higher likelihood of placement disruption, controlling for baseline behavior (Chamberlain et al., 2006; James et al., 2004). Nonrelative caregivers are probably less attached to the foster youth in their care than relative caregivers. As such, kinship caregivers may be more committed to maintaining the child in their home. There is also evidence to suggest that foster caregivers are harsher critics of youth behavior than are kinship caregivers (Rosenthal & Curiel, in press) and that non-relative caregivers have a lower tolerance for

problem behaviors than relative caregivers due to differences in how behavior is perceived.

Implications of Research Examining Selection into Out-of-home Placement.

Decisions about whether a child will be placed out-of-home and the type of placement are influenced by non-random factors that potentially create selection bias in studies of the effects of placement on child outcomes. Youth placed in kinship or foster care, particularly foster care, have experienced a number of parental risk factors and a history of maltreatment that increase their likelihood of out-of-home placement. As such, youth in kinship or foster care are significantly different from youth who remain at home after CPS investigation, or youth in the general population. It is reasonable to surmise that the risk factors that contribute to placement decision could also affect subsequent behavior. Pre-existing characteristics and experiences present important selection effects that must be corrected to isolate the effects of out-of-home placement on behavior.

2. Impact of Out-of-Home Placement on Behavior

This section reviews literature on the impact of out-of-home placement on behavior. Dependent variables include assessments of behavioral outcomes using standardized scales as well as mental health and delinquency outcomes. Studies generally show that out-of-home placement is associated with negative behavioral outcomes and multiple placements increase the risk for problem behaviors. However, most studies face major methodological challenges, including failure to account for behavior prior to placement. Confidence in the results of these studies is limited. This

section is organized according to the specific independent variable in each study: any out-of-home placement, kinship versus foster care, and placement stability.

Impact of Any Out-of-Home Placement on Behavior

Placement into out-of-home care was associated with increased odds of delinquent behavior for a sample of youth whose parents were investigated for child maltreatment in one county, controlling for age, race, gender, and maltreatment history (Jonson-Reid, 2002). Being placed out-of-home in Missouri was associated with fourfold higher odds of referral to juvenile justice, controlling for parental characteristics and history of maltreatment (Dannerbeck, 2005). Over a five-year period, Illinois youth in out-of-home care had higher odds of delinquent behavior than youth with a substantiated maltreatment report who were not placed in out-of-home care, controlling for age at maltreatment, race, and maltreatment history (Ryan & Testa, 2005). An investigation of externalizing behaviors for youth involved with Casey Family Programs in 14 states revealed larger proportions of youth in the clinical and borderline-clinical ranges than the general population, controlling for race (Keller et al., 2001).

One study found a modest protective effect of foster care services on juvenile incarceration for African American and Hispanic youth using administrative data from 10 counties in California. Researchers found that among youth who had a substantiated maltreatment report, those who received in-home or out-of-home services were less likely to be incarcerated than those whose cases were closed (Jonson-Reid & Barth, 2000). This study is the first to compare youth placed out of home to an appropriate comparison group of youth investigated by child welfare officials but not placed, which could explain protective effects. No studies controlled for behavior prior to placement.

Impact of Kinship Care versus Foster Care on Behavior

Studies examining the differences between the behaviors of youth in kinship and youth in traditional foster care have yielded mixed results. One doctoral dissertation found higher levels of internalizing, externalizing, and total behavior problems among youth placed in traditional foster care, relative to youth in kinship care, using a sample of 400 youth in one county in New York State (Jones, 1998). A similar study using an ethnically and geographically diverse sample of youth participating in the Casey Family Program did not find significant differences between youth placed with kin versus non-kin foster families for internalizing and externalizing behaviors (Keller et al., 2001). A fourteen state study with over 1,600 youth also in Casey Family Programs did not find significant differences between the behaviors of youth placed in relative or non-relative care, although youth in kinship care did score higher on delinquency than did youth in traditional care (Shore et al., 2002). These studies offer limited generalizability because of geographic limitations in the New York study and placement in private Casey Family Programs, as opposed to public child welfare programs, in the other two studies.

Like the studies examining the effects of any placement on behavior, studies evaluating kinship over foster care fail to control for pre-placement influences on post-placement behavior. One study of the effects of kinship versus foster care on behavior controlled for race (Keller et al., 2001) and another controlled for race and gender (Shore et al., 2002), but these variables are not adequate controls to isolate the effects of placement on behavior. Studies were conducted using naturally occurring samples with inherent selection bias so confidence in results of these studies is limited.

Comparison of behavioral outcomes by kinship versus foster care is further complicated by effects of the reporter. One study using nationally representative NSCAW data revealed that who was reporting on child behaviors influenced the number of behavioral issues identified. According to caregiver reports of behavior, non-relative foster parents rated the youth in their (foster) care as having higher rates of behavior problems than did the relative caregivers of youth in their (kinship) care. However, teachers rated youth in kinship care as having higher levels of behavior problems than youth in traditional family foster care. The authors were unable to conclude whether observed differences were due to differences in the perception of reporter or differences in actual behaviors of children in different settings (Rosenthal & Curiel, in press). Implications of potential reporter bias suggest that future researchers might consider the use of self-reported youth behaviors to attempt to equalize reporting bias across groups for a more accurate comparison.

Impact of Placement Stability on Behavior

Some studies found that placement changes can adversely affect behavioral outcomes and others failed to identify negative effects of unstable placement histories. A study of 212 youth tracked from early childhood beginning in 1976 found that the total number of housing transitions, including out-of-home placements, was the strongest predictor of drug/alcohol use and status offenses in young adulthood, controlling for parental SES and maltreatment history (Herrenkohl, Herrenkohl, & Egolf, 2003). Two placement changes did not significantly increase the odds of delinquent behavior using administrative data from Illinois, but three changes were associated with a 153% increase in odds of delinquent activity for boys, and four or more changes were associated with a

213% increase in odds of delinquent activity for boys, controlling for age, race, and maltreatment history. Placement changes were not significant in predicting delinquency for girls (Ryan & Testa, 2005). This study suggests that effects on delinquency may operate differently by gender and that youth have a threshold for how many placement changes can be made before behavior is affected.

In a study of 199 urban foster youth, placement change was significantly associated with greater conduct problems only until community attachment variables were included (Leathers, 2002). Though most studies attempt to control for contextually important variables, all but one (Newton, Litrownik, & Landsverk, 2000) fails to consider whether delinquent or externalizing behaviors were elevated prior to placement. Without control for baseline behavior, it is not clear whether the effects of placements have been isolated from characteristics or experiences that preceded placement. The potentially damaging pre-placement experiences identified in the previous section of this review, including maltreatment and parental hardships, could adversely affect future behavioral outcomes. Controlling for behavior at placement is critical to understanding the unique effects of placement experiences on behavioral outcomes.

One study of 415 children ages 2-17 in out-of-home care in San Diego, California measured behavior approximately five months after placement and a year later, approximately 17 months after placement (Newton, Litrownik, & Landsverk, 2000). Time one behaviors and number of placement changes were used to predict time two internalizing, externalizing and total problem behaviors using hierarchical regression analysis controlling for race/ethnicity, sex and age. Time one behaviors were entered in the first step; race/ethnicity, sex, age and number of placement changes were added in the

second step. For each type of problem behavior, including step two variables increased the total variance explained by the model. Race/ethnicity, age and sex were not significant in predicting any of the three behavior problems but number of placement changes was a significant predictor of time two problem behaviors.

The hierarchical model was repeated for two subgroups created by splitting the sample at the median number of placement changes. Number of placement changes did not predict total, internalizing or externalizing behavior problems in the low change group, who had four or fewer placements, but number of placement changes continued to be a significant predictor of all three problem behaviors in a high change group who experienced five or more placements. Placement change effects found in the total sample can be explained by a smaller number of high change youth.

Results of the subgroup analysis support other findings that multiple changes may be needed before behavior is affected (Ryan & Testa, 2005). Although the previous study does not distinguish between placement types, it suggests that placement stability is an important predictor of behavior, even after controlling for baseline behavior.

Implications of Research Examining the Impact of Placement on Behavior.

Implications of the reviewed studies for this study and future research include the importance of placement experiences on behavior. Though confidence in many of the results is limited by study designs that do not allow for causal interpretations, the one study that included baseline behavior supports the need for considering the effects of placement changes on subsequent behavior. Methodological challenges for each of the studies reviewed provide the opportunity to improve over existing literature.

3. Impact of Control Variables on Behavior

Studies in this section examine the effect of non-placement variables on behavior. These variables could contribute to behavioral outcomes and will be statistically controlled in an attempt to isolate the effects of placement in kinship or foster care. Behavior problems have been shown to increase with age. Males exhibit more externalizing behaviors and females exhibit more internalizing behaviors. Results about race and maltreatment experiences are mixed. This section is organized by independent variable.

Age. Being older at entry into child welfare--between the ages of 12 and 15--was associated with increased rate of entry into juvenile corrections in Missouri (Jonson-Reid & Barth, 2000a). Odds of delinquency increased by 6.6 for youth who were ages 11-13 at the time of the maltreatment report and 10.56 for youth ages 14-16 at the time of report (Jonson-Reid, 2002). In a different study using Illinois data, older age was a predictor of delinquency for both males and females (Ryan & Testa, 2005).

Gender. Rates of externalizing behavior problems seem to be higher among males than females (Keller et al., 2001). Males were more likely than females to transition from child welfare to juvenile justice (Jonson-Reid & Barth, 2000a). Odds of males engaging in delinquent behavior are four times that of females (Jonson-Reid, 2002). Males are 87 percentage points more likely than females to have juvenile court petitions against them (Smokowski, Mann, Reynolds, & Fraser, 2004).

Internalizing problems are more common among females. Although a study of youth involved in Casey Family Programs found no gender differences on internalizing behaviors twelve months after baseline (Keller et al., 2001), this study is limited by an

unrepresentative sample of youth in selective private programs. The Chicago Longitudinal Study found that females were fifteen percentage points more likely than males to be depressed at age 16 (Smokowski et al., 2004).

One study comparing the rates of criminal involvement among youth involved with child welfare found that although females were less likely to be referred to juvenile justice than males, they were much more likely to be referred than females in the general population. The rate of entry to juvenile justice from child welfare for females involved in child welfare (.2 per 1,000) was three times that of females in the general population (.07 per 1,000). The rate of entry to juvenile justice for males involved with child welfare (2.9 per 1,000) was twice that of males in the general population (1.4 per 1,000) (Jonson-Reid & Barth, 2000). This finding suggests that child welfare involvement, or the ecological circumstances preceding it, may have a unique impact on females that increases their risk for externalizing behavior problems that are typically more common for males.

Race. Racial differences emerge based upon type of data used. Studies using clinical assessments of internalizing and externalizing disorders found no racial differences (Taussig & Talmi, 2001) or found that children of color had significantly lower levels of internalizing and externalizing behaviors than white children (Keller et al., 2001). However neither of these studies correct for selection even though clinical data are highly selective of youth whose parents are able to access formal systems of care.

Studies linking administrative data from child welfare and juvenile justice found that non-white youth (Jonson-Reid, 2002), especially African American youth (Jonson-

Reid & Barth, 2000a; Ryan & Testa, 2005) had higher rates of delinquency than white youth. It is possible that administrative data were able to detect significant differences because of the larger sample sizes. Minority youth could exhibit higher rates of the behaviors that are both externalizing and unlawful. Minority youth could also be more likely than white youth to become involved in formal systems of punishment as a result of their behavior.

Type of Maltreatment

Studies examining the effects of type of maltreatment on behavior have yielded mixed results. Many researchers have been unable to detect any statistically significant differences in behavior between maltreatment types (Altshuler, 1998; Jonson-Reid, 2002; Ryan & Testa, 2005; Taussig, 2002; Whiting, 1998). Studies with significant findings are summarized below, organized by type of maltreatment.

Physical abuse. A study of California administrative data found that out-of-home placements in response to a report of physical abuse was associated with increased odds of delinquent offending (Jonson-Reid & Barth, 2000a). A 20-year longitudinal study of high-risk youth found that physical abuse was the strongest predictor of delinquency in adulthood regardless of whether or not youth were placed out-of-home (Herrenkohl et al., 2003). The Rochester Youth Development Study followed at-risk youth from age 13 into adulthood and found that a history of physical abuse during adolescence was a significant predictor of violent offending and drug abuse in adolescence, but not adulthood (Smith, Ireland, & Thornberry, 2005). These findings are consistent with theories that suggest children learn aggressive or violent behavior from their parents and use those negative behaviors as coping mechanisms in later life.

Sexual abuse. A history of sexual abuse was associated with reduced odds of delinquency, relative to other kinds of maltreatment, in adolescence (Jonson-Reid & Barth, 2000b; Jonson-Reid, 2002). Following outcomes into early adulthood revealed increased odds of general offending and drug use (Smith et al., 2005). Studies that included sexual abuse did not find significant differences in behavior in the short term, possibly because sleeper effects take a longer period of time to manifest symptoms and brief study periods were not able to capture it.

Neglect. A study of California administrative data found that neglect was associated with increased odds of delinquent offending (Jonson-Reid & Barth, 2000a). Researchers on the Rochester Youth Development Study found that a history of neglect in early adolescence increases the odds of antisocial behavior across domains of general offending, violent offending, and substance abuse in late adolescence and early adulthood (Smith et al., 2005). It is possible that neglectful parenting is persistent over a period of time and the consequences of neglect affect development in a way that is longer lasting.

Implications of Research Examining the Impact of Control Variables on Behavior.

Any evaluation of the effects of placement on the behaviors of youth in out-of-home care must correct for pre-placement experiences and other characteristics that also affect behavior. Youth placed in child welfare have been exposed to significant risks. The family, child, and maltreatment characteristics all demonstrate independent effects on behavior and should be controlled to accurately isolate the effects of placement in kinship or foster care in this study and future research.

Current State of Knowledge: Care Environment Issues

Relationships four through six depicted in the conceptual model pertain to the mediating influence of the care environment on adolescent behavior. Although research on relationship six--examining the care environment as a mediator of the effect of placement on behavior--has not yet been conducted, literature examining each component will be reviewed in turn, including the 4) impact of foster or kinship care placement on the care environment, and 5) impact of the care environment on adolescent behavior. These sections are organized by caregiver characteristics, parenting behavior, and child/caregiver relationship.

4. Impact of Kinship or Foster Care on the Care Environment

This section will review the impact of kinship or foster care on all aspects of the care environment that are relevant in family stress theory: caregiver characteristics, relationship with caregiver, and parenting behaviors. Most studies reviewed in this section are descriptive. Studies are organized by dependent variable.

Caregiver Characteristics

A review of three decades of literature found that kinship caregivers were more likely to be African American, older, single, have less education, be unemployed, and of lower SES compared to non-kin caregivers (Cuddeback, 2004). In Baltimore and Washington, DC, kinship caregivers reported fewer social and economic resources and poorer health than foster caregivers (Jones Harden, Clyman, Kriebel, & Lyons, 2004). In Houston, relative caregivers were more likely than non-relative caregivers to be older and in poor health (Terling-Watt, 2001). A national examination of the National Survey of

America's Families found that, compared to non-kin foster parents, a greater proportion of kinship providers lived in poverty, experienced food insecurity, were unmarried, had not graduated high school, and were unemployed (Ehrle & Geen, 2002).

Family stress theory would suggest that the relatively more stressful economic and personal situations of relative caregivers could disrupt parenting behaviors of relative kinship caregivers more than non-relative foster caregivers. Foster families may have an advantage over kinship families because of their economic advantages and social supports. As licensed providers, foster caregivers have access to support services that unlicensed kinship families do not, such as monthly financial subsidies, health insurance for children in their care, and vouchers for clothing and school supplies (Geen, 2003).

Relationship with Caregiver

Despite the relatively more difficult circumstances for caregivers in kinship care, placement in relative homes has advantages over placement with strangers in family foster care. Youth experience many changes--in family, friends, school and neighborhood--after out-of-home placement; many of which youth think are for the better (Chapman, Wall, Barth, & NSCAW Research Group, 2004; Johnson & Yoken, 1995), but these dramatic changes are disruptive nonetheless. Placement with relatives might minimize this disruption (Keller et al., 2001) because youth and relatives already know each other, they are from the same racial and cultural backgrounds, and they may live in close proximity to their home environment.

A qualitative study of kinship families discovered that many formal kinship placements were preceded by periods of informal kinship care or parents sharing responsibility with co-resident caregivers who become primary caregivers after formal

placement (Brown, Cohon, & Wheeler, 2002). Extended kin have also been shown to continue playing a role as a support system for youth after placement in kinship care (Altshuler, 1999). Though many kinship caregivers are not married, qualitative analysis of kinship families revealed a strong and fluid presence of extended family. Multi-generational households had many caregivers who valued shared responsibility in child-rearing (Brown et al., 2002). Presence of this extended network of kith and kin available to youth placed in kinship care may reflect more functional families of origin compared to youth placed in traditional family foster care (Keller et al., 2001).

Close proximity and continued ties to biological parents are both a strength and weakness of kinship care (Brown et al., 2002; Keller et al., 2001). Close proximity can be a strength for the large numbers of foster youth who miss their parents (Altshuler, 1999; Johnson & Yoken, 1995) and can help ease the effects of separation while maintaining safety and stability with their relative caregivers. However, qualitative interviews with child welfare caseworkers revealed that relative caregivers often do not adhere to boundaries established by protective services so the worker must remove the child from their kinship home (Terling-Watt, 2001). Proximity and ties to abusive or neglectful biological parents can be a weakness when kinship providers are unable to adequately protect the child.

Youth perspectives found in NSCAW data reveal that youth in out-of-home care were generally satisfied with their placements, but were slightly more satisfied in kinship care than foster care. Children in kinship care were significantly less likely to miss their family or run away from home. They are also more likely to like who they are living with and want their current home to be their permanent home. There were no differences

between kin and non-kin caregivers in how well the youth related to their caregiver or in the average number of activities youth and caregivers engaged in. There were also no differences in whether or not youth reported feeling as though they were part of the family (Chapman et al., 2004).

Parenting Behavior

A study of foster parent applicants in one southeastern state revealed that 15% of foster parents manifest potentially poor or troubled parenting and 5-16% of foster families fall in a potentially problematic range of family functioning; no comparisons were made to biological or foster parents. (Orme et al., 2004). The average kinship care provider in a sample of families served through one county in New York State scored in the clinically problematic range on four of seven dimensions: communication, roles, affective response and affective involvement (Richardson, 2002). A majority of male and female foster care applicants (without distinction between kin or non-kin foster care) reported one or two psychosocial problems; 17% of women and 24% of men had three or more problems that could impede their parenting ability (Orme et al., 2004).

In a study of parenting practices, kinship caregivers provided less warmth/respect, more strictness/over-protectiveness, and more parent-child conflict/anger than foster families. However, status as a kinship caregiver failed to explain additional variance in parenting practices once age and marital status was taken into account in multivariate analyses (Jones Harden, 2004). Given the sociodemographic differences between relative and non-relative caregivers, this study illustrates the importance in controlling for these factors when examining the influence of placement into kinship and foster care on the care environment.

Implications of Research Examining the Impact of Placement on the Care Environment

Though kinship care and traditional foster care are similar in their family-like placement structure, research has shown that the two placement types vary in important ways. Evidence suggests that economic conditions might favor foster caregivers over kinship caregivers. Social support from extended family could be greater in kinship homes than foster family homes. This study and future research should consider aspects of the care environment when assessing the impact of placement in kinship or foster care on behavior.

5. Impact of the Care Environment on Behavior

This section reviews literature on the impact of the care environment on adolescent behavior for youth placed out-of-home. Though the care environment has a theoretically important influence on child behavior, only limited research has been done with child welfare populations. Studies are organized by independent variable.

Caregiver Characteristics

Family stress theory emphasizes the importance of economic or other personal hardships as stressors that influence parenting behavior and subsequent child behavior. Very little research on the behaviors of children involved in child welfare includes characteristics of their parents or caregivers as predictors. One study of urban foster youth found that parental substance abuse significantly predicted conduct problems for girls, but not boys. Parental incarceration significantly predicted conduct problems for boys, but not girls (Leathers, 2002).

Relationship with Caregiver

Feeling close or connected to an adult caregiver is one aspect of the care environment that can affect child outcomes. For youth who have been removed from their biological family and placed with substitute relative or non-relative caregivers, there may be less closeness or attachment to encourage positive behavior. Few studies have examined the effect of closeness to caregiver on behavior in child welfare populations. One study of foster youth in San Diego found that having a stronger attachment to the current caregiver has predicted fewer behavior problems for youth in out-of-home care, especially for boys (Leathers, 2002).

Parenting Behavior

Under family stress theory, parenting behavior is the primary influence on adolescent behavior. Disrupted parenting, harsh discipline, parent-child conflict, and inter-parental conflict have been associated with higher levels of behavior problems. High levels of family cohesion, family functioning, parental acceptance, and parental monitoring are associated with fewer behavior problems and positive social and emotional adjustment (Orme & Buehler, 2001).

In a doctoral dissertation on a sample of youth involved with child welfare, poor family functioning was a significant predictor of child behavior problems for youth in kinship care after controlling for household income and measures of parents' demandingness or responsiveness (Richardson, 2002). No other studies have examined the effects of parenting on the behaviors of youth in out-of-home care. Research on the effects of parenting and other aspects of the care environment on behavior of youth in out-of-home care is sorely needed.

Implications of Research on the Impact of the Care Environment on Behavior.

Though studies are limited, researchers have been able to find preliminary support for positive and negative influences of the care environment on adolescent behavior. Despite methodological challenges of early studies, this area of research has a lot to offer child welfare professionals and policy makers about how to improve services to children and families. This study and future research should continue to improve upon the studies reviewed in this section to identify points of intervention to improve child outcomes.

Critique of Existing Literature

Selection Effects

Research on the prevalence of behavioral problems among youth placed in kinship or foster care is successful in establishing a population at increased risk for negative outcomes. However, this literature has serious shortcomings. The greatest flaw in previous research is the failure to account for behavior prior to placement. The causal direction between behavior problems and out-of-home placement has not been established (Orme & Buehler, 2001) and researchers have not determined whether post-discharge differences in well-being are due to the intervention or due to pre-discharge, or pre-entry, characteristics (Farruggia, Greenberger, Chen, & Heckhausen, 2006). Previous research has interpreted placement as the cause of behavior problems before ruling out the possibility that behavior prior to placement could be contributing to both the placement decision and subsequent behavior.

Care Environment

Much of the previous literature evaluating the effects of out-of-home placement on behavior has not included mediating processes to account for how or why placement should influence outcomes. This is due, in part, to over-reliance on administrative data that do not measure mediating variables. Previous research also lacks an explicit framework for understanding how placements should affect outcomes.

Family stress theory asserts that parenting behavior, as influenced by economic or other hardship, is the primary influence on adolescent behavior. This theory encourages the examination of care environments and parenting practices experienced by youth in kinship care, family foster care, and remaining at home with their biological parents. Applied to child welfare, this theoretical framework is particularly relevant because of the many stressors faced by biological families that lead to out-of-home placement.

Comparison Group

Previous literature does little to advance our understanding of the effects of placement in out-of-home care relative to the alternative of remaining in the home of a family reported for child maltreatment. Studies have generally had no comparison group or compared youth to the general population through national surveys or cut-off scores on standardized measures. Families who come to the attention of child welfare officials are unique because they all have exhibited behaviors that prompted a report of maltreatment. As such, families who are reported could be expected to be different in significant ways from families who are not reported. Being investigated makes children and youth open to out-of-home placement in a way that others in the general population are not. Therefore,

youth with similar pre-placement behaviors who are investigated, but not placed, provide the best comparison group to examine the effects of out-of-home placement.

Data Quality

Many of the methodological limitations are rooted in data constraints. Historically, child welfare research has been severely under-funded (Courtney, 2000) and until the National Survey of Child and Adolescent Well-being (NSCAW), there has been a paucity of good, national data to analyze the effects of child welfare intervention. This data shortage resulted in studies that examined relatively small and geographically limited samples that were not representative of the larger population of youth in out-of-home care. Researchers compensated for sample size shortcomings through the use of larger administrative databases that make it easier to detect significant trends, but offered only limited variables for examination—many of which were overly simplistic or of questionable quality. National surveys such as the National Survey of America's Families include high quality variables but lack measurements specific to the unique situations of youth in out-of-home placement. Furthermore, as a nationally representative survey, the sample sizes for youth in out-of-home care are too tiny to effectively capture variation in the population of youth in out-of-home care.

Research Design

A final methodological critique is that many studies used cross-sectional designs that sampled youth at only one point in time. This design over-represents youth who have been in care for a long time and are more likely to have experienced multiple placements (Usher, Randolph, & Gogan, 1999) and could overestimate the negative

effects of placement on behavior. It is also impossible to determine causal order using cross-sectional designs (Orme & Buehler, 2001). Authors have suggested that the only way to accurately track child welfare placement experiences and their consequences is to follow youth from their first contact with child welfare (Usher et al., 1999; Courtney et al., 2001), an approach used in this study.

Advancing the Child Welfare Literature

This study will advance the child welfare literature in three major ways. First, it will improve upon previous research by correcting for selection into placement prior to predicting behavioral outcomes. Second, it will use the family stress model of child welfare as a framework for conceptualizing how adolescent behaviors are affected by their ecological circumstances; whereby, out-of-home placement is expected to have a direct, negative effect on behavior because it is extremely disruptive, but an indirect positive affect via an improved care environment. A third advance over existing literature is to compare youth placed in kinship or foster care to investigated youth who remain at home using a nationally representative sample.

Research Questions and Hypotheses

Table 1 below summarizes the specific research questions and hypotheses addressed in this study (OOH= out-of-home placement). All research activities are designed to answer the overarching question: *What is the effect of placement in kinship or foster care on the internalizing and externalizing behavior of adolescents investigated by child welfare?* Data definitions are provided in Table 2, below.

Table 1. Summary of research questions and hypotheses

<i>Research Question</i>	<i>Hypothesis</i>
1) Are there systematic differences in placement experiences?	<p>1a) Greater risk in the biological family home, maltreatment, and greater behavior problems at baseline will be associated with OOH (out-of-home placement).</p> <p>1b) Youth with greater behavior problems will experience a greater number of placements.</p> <p>1c) Youth with greater behavior problems will experience longer lengths of stay.</p>
2a) What is the effect of OOH on behavior?	2a) Compared to remaining at home, OOH will be associated with greater behavior problems. Placement in foster care will be associated with greater behavior problems than kinship care.
2b) What is the effect of placement stability on behavior?	2b) Controlling for unstable placement history will reduce the relationship between OOH and behavior problems. Youth who experience a greater number of placements will exhibit greater problem behaviors compared to youth with stable placement histories.
3) Does the effect of OOH on behavior remain after correcting for selection into placement?	3) Controlling for preexisting characteristics will reduce the relationship between OOH and behavior problems.
4) Do kinship and foster care placements offer better care environments than those of families that remain in-home after CPS investigation?	4) Placement in foster care or kinship care will be associated with a more supportive child/ caregiver relationship, a closer relationship between child and caregiver, a greater number of activities between child and caregiver, and a higher level of parental monitoring.
5) What is the effect of care environment on behavior?	5) Better care environments will be associated with fewer problem behaviors.
6) Is the effect of placement on behavior mediated by the care environment provided in OOH?	6) Controlling for care environment will reverse the relationship between OOH and behavior problems to reveal a negative association between placement and behavior problems.

Table 2. Data definitions

<i>Construct</i>	<i>Definition</i>
Dependent Variables	
Internalizing behavior	Emotional distress that is directed inward, such as depression, anxiety, and withdrawal
Externalizing behavior	Emotional distress that is directed outward, such as aggression, violence or delinquency
Independent Variables	
Placement	Out-of-home placement in kinship care living with relative caregivers, foster care living with paid foster parents, or at home without any placement history
Placement stability	The total number of placements in out-of-home care across the study period
Length of stay	The total number of days in out-of-home placement, or the proportion of time spent in out-of-home care over the study period
Mediating Variables	
Closeness with caregiver	Degree of caring relationship between the child and his or her permanent or non-permanent caregiver
Supportive relationship with caregiver	Degree of supportive relationship between the child and his or her permanent or non-permanent caregiver
Activities with caregiver	Number and type of things that youth and caregivers do together
Parental monitoring	Extent to which caregivers keep track of child activities
Control/Selection Variables	
Child demographics	Age, race, gender
Child special needs	Learning, developmental disabilities, or extreme behavior problems
Maltreatment history	The type of maltreatment experienced by the child, and history of prior abuse
Risk assessment	Characteristics and conditions of the biological family under investigation; economic and personal hardships, stress, and parenting behavior that contribute to likelihood of out-of-home placement and child behavior problems

CHAPTER 3: DATA AND METHODS

This chapter provides an overview of the National Survey of Child and Adolescent Well-being (NSCAW) and the sample that is examined in this study. Each construct of interest is operationalized and specific instruments and measures are described. The analyses to evaluate each hypothesis are explained.

Description of Data

The National Survey of Child and Adolescent Well-being (NSCAW) is a nationally representative longitudinal survey of youth involved with child welfare. The dataset combines a child welfare and child development perspective to focus on policy and programs to promote child well-being. These factors are framed in an ecological context of multiple influences on child behavior to better understand how family, child, community and service factors affect child behavior. It is the first national dataset to survey families involved in child welfare (Dowd et al., 2006).

Over 6,000 youth up to age fourteen were drawn from a sampling frame that included substantiated and unsubstantiated child maltreatment cases from 97 counties nationwide. Two separate samples were constructed. The Child Protective Services (CPS) sample includes over 5,000 youth who were the subject of Child Protective Services investigations between October 1999 and December 2000. The Longer-term Foster Care (LTFC) sample includes over 700 youth who had been living in out-of-home care for approximately one year during the same sample period (Dowd et al., 2006).

Data were collected through in-person, computer-assisted, and telephone interviews at four time points. Table 3 below summarizes the informants questioned at

each wave of data collection. Children and their caregivers were interviewed whether or not the family exited the child welfare system, but child welfare workers were not interviewed if the case had been closed (Dowd et al., 2006).

Table 3. NSCAW data collection

Wave 1	Wave 2	Wave 3	Wave 4
Baseline	12 months	18 months	36 months
Child*		Child*	Child*
Current caregiver	Current caregiver	Current caregiver*	Current caregiver*
Caseworker*	Caseworker	Caseworker	Caseworker
			Derived variables computed across waves*

This study utilized information provided from informants indicated with an asterisk in the table above. Wave one caseworker interviews provide information about risks in the family of origin, maltreatment history, and child special needs prior to placement. Child interviews at wave one provide a measure of baseline child behavior and child demographic variables. Wave three and four child interviews provide child internalizing and externalizing behaviors as well as measures of the care environment. Demographic information about caregivers is taken from the caregiver interview at waves three and four. Derived variables in wave four are computed by NSCAW researchers from caseworker, caregiver, and child interviews across waves 1-4 for information on children’s cumulative experiences in out-of-home placement over the study period. Wave 2 is not analyzed in this study because child behavior and care environment variables of interest were not measured at wave 2.

Sample Description

This study draws from the CPS sample of youth referred for investigation by Child Protective Services because it allows for comparisons between youth who were

placed in kinship or foster care and youth who remained at home with their biological parents. The sample includes 839 adolescents ages 11 to 14 at wave one and 14-18 at wave 4. This age group is selected for their developmental similarity and because critical dependent and mediating variables are only available for youth ages 11 and up. Youth who were placed in group care constitute a special population of youth with severe needs that cannot be adequately treated in community-based settings; these youth (n=103) are excluded from this analysis.

The study population of youth involved with child welfare can be highly transitory, making it difficult to track precise placement experiences at only three or four discrete data collection points. A four-month lag between sampling and wave one data collection means that some youth may have entered and exited out-of-home placement between sampling and data collection, though this placement could not be captured in the data. Similarly, youth could change placements or enter and exit out-of-home placements between waves. It is also possible that the family's encounter with child protective services at the time of sampling was not the family's first exposure to child welfare-- youth could have been placed out-of-home as children and returned home prior to the time of sampling. These issues are unique to child welfare populations, and can make examining the role of placement in predicting outcomes challenging. This study makes every effort to capture the range of out-of-home placement experiences known to this dataset, and controls for child welfare involvement prior to baseline data collection.

Two different datasets were constructed to capture both general information about the cumulative placement experience of each child, and detailed information about the care environment in each placement. In an unpooled dataset, derived variables computed

at wave 4 are used to capture placement experiences across the 36-month study period. For detailed information about the care environment, we must rely on wave data. A second dataset pools cases in waves one, three and four to increase the number of children experiencing kinship and foster care at the time of data collection. Pooling the data across waves allows for consideration of baseline experiences on subsequent behavior with a sample size large enough to detect significant differences, and powerful enough to include the array of predictor variables this study is interested in. Standard errors are corrected for clustering when using the pooled dataset.

Instruments/Measures

This section describes the instruments and measures from which items were derived. Data manipulation procedures for reverse coding and scoring are described, as necessary. Table 4 at the end of this section lists the items used to operationalize each construct.

Dependent Variables: Adolescent Behavior

Adolescent behavior is examined using the internalizing and externalizing behavior scales reported by youth on the Youth Self Report (YSR). The YSR can be completed by youth with a 5th grade reading level. Youth are asked to rate how true 112 items are for them now or within the past 6 months using a 3-response-category Likert scale where 0=not true, 1=somewhat or sometimes true, and 2=very true or often true. The YSR yields 8 syndrome scales—aggressive behavior, anxious/depressed, attention problems, rule-breaking, social problems, somatic complaints, thought problems, and withdrawal, and two broadband scales—internalizing and externalizing. Specific items

used to define the internalizing and externalizing scales are listed in Table 4 at the end of this section.

The YSR was administered to youth ages 11 and older at waves one, three, and four of data collection. It has demonstrated high internal consistency in NSCAW data (Externalizing=.90, Internalizing=.91 and total behavior problems=.96); (Dowd et al., 2006). The YSR has been used to examine the internalizing and externalizing behaviors of adolescents in the general population (Besser & Blatt, 2007; Garnefski, Kraaij, & van Etten, 2005; Lohaus, Ball, Klein-Hessling, & Wild, 2005; Muris, Meesters, & Berg, 2003; Reitz, Dekovic, & Meijer, 2005; Reitz, Dekovic, & Meijer, 2006; Ronnlund & Karlsson, 2006; Van Oort et al., 2007). It has also been used to examine the behaviors of adolescents in child welfare using NSCAW data (Eckenrode, Izzo, & Smith, in press).

The YSR was selected over the analogous Child Behavior Checklist (CBCL) completed by caregivers because one study using NSCAW found that the reporter affected the number of problem behaviors identified. Kinship providers rated the youth in their care more favorably than did foster care providers, despite the fact that teachers rated youth in kinship care as having more behavior problems than youth in foster care (Rosenthal & Curiel, in press). An additional concern is that the CBCL is only intended for use by parents who know the child well, though it can be used with other caregivers who have known the child for six months. The highly volatile placement histories of youth in care make it less likely that temporary caregivers know children very well and could jeopardize the quality of data.

The YSR addresses these concerns because there is no reason to suspect that differences between reported behavior and actual behavior would vary systematically by

type of placement using the YSR. Use of self-reported behavior measures alleviates the issue of ensuring caregivers had adequate experience with, and knowledge of, child behavior to be accurate reporters. Furthermore, the reporter is the same at each wave using the YSR whereas the reporter could change using the CBCL.

Independent Variables: OOH Experience

Placement status

The main independent variable is placement status. Over the three year study period, youth may have been placed in kinship care or foster care or remained at home. Placements are measured by derived variables calculated by NSCAW researchers using the caregiver, child, and caseworker interviews (Dowd et al., 2006). Youth are: not placed, placed in kinship care, or placed in foster care, at waves 1, 3, and 4.

Placement stability

A second independent variable is the degree of stability in out-of-home placements. NSCAW researchers created a derived variable calculating the total number of placements from wave 1-4 that counts the total number of placements over the 36-month study period. It is a continuous variable ranging from 0-9.

Length of stay

A third independent variable that can be used to characterize the placement experience is length of stay. NSCAW researchers created a derived variable calculating the total number of days in care from wave 1-4. Number of days in out-of-home care is a continuous variable with a range from 0 to 1179—roughly the entire study period.

Mediating Variables: Care Environment

The general categorical label “care environment” is used to group together three related, but conceptually distinct, theoretically-relevant characteristics of the home environment. Relationship with caregiver, activities with caregiver, and parental monitoring are all expected to influence adolescent behavior, but are analyzed separately to identify unique effects. Together, these related components of the care environment allow for assessment of the assumption that substitute families are preferable to biological families. Including the care environment as a theoretically-derived mediator might explain the processes through which placements affect behavioral outcomes.

Relationship with caregiver

NSCAW items to measure relationship with caregiver are obtained from a short version of the Rochester Assessment Package for Schools (RAPS) (Connell, 1990; Lynch & Cicchetti, 1991). Items are measured using an ordinal 4-response-category Likert scale where youth are asked whether the statements listed in Table 4 are not at all true, not very true, sort of true, or very true. This measure is designed to yield an overall mean supportive relationship scale and four subscales: parental emotional security, involvement, autonomy support, and structure. The mean is obtained after items indicated with an asterisk in Table 4 are reverse-coded so that a high score indicates a highly supportive relationship with the caregiver. The sum of the twelve responses in this scale is then divided by the total number of questions in the scale with non-missing data. The overall mean supportive relationship score has high internal consistency (Chronbach’s $\alpha=.88$) in the NSCAW data, as does Parental Emotional Security (.65),

Involvement (.76), and Structure (.66). The Autonomy Support scale is not reliable (.28) and is not included as a subscale (NSCAW Research Group, 2004).

Activities with caregiver

In NSCAW, youth are asked to indicate whether or not they engaged in each of ten activities with their caregiver over the past four weeks. Each item includes a type of activity and youth respond yes or no. One of the items, “had a serious argument about your behavior”, was dropped because it is expected to be highly related to the dependent variable of adolescent behavior problems and could jeopardize analyses. A total number of activities with caregiver score was computed by counting the number of yes responses for the remaining nine items so that a higher score indicates more activities with caregiver. Scores could range from 0-9.

Parental monitoring

The scale measuring parental monitoring was initially developed by Dishion and colleagues (1991). Youth are asked how often the events listed in Table 4 occur on an ordinal 5-category Likert scale where 1=never and 5=very often. There are no standard scoring procedures for this measure. Items marked with an asterisk in Table 4 were reverse-coded so that a high score indicates a greater level of parental monitoring.

Caregiver characteristics

Specific NSCAW variables to measure caregiver characteristics are provided by the caregiver, and include caregiver race, age, and education. In the General Release version of NSCAW analyzed here, continuous variables are collapsed to protect caregiver

and child identity. Caregiver characteristics are collected from all caregivers to allow for comparison across kinship, foster, and not-placed families.

Selection and Control Variables

The out-of-home placement experience independent variables and care environment mediating variables are the primary interests of this research. However, examination of these variables is complicated by selection effects where pre-existing characteristics could account for both the placement experience and subsequent behavior. Child characteristics, maltreatment history, biological family risk, and poor parenting behavior are included to correct for selection effects. Controlling for these variables isolates the independent effects of placement and the care environment on adolescent behavior.

Child characteristics

Age, race, and gender are included as control variables. In NSCAW, these are derived variables obtained from interviews with the caregiver, child and caseworker. Special needs status is asked of the caseworker during the risk assessment at wave 1.

Maltreatment history

The maltreatment construct is reported by the caseworker at wave one. An 8-category variable is reduced to 5-category to increase cell sizes and ease of interpretation. These categories include physical abuse, sexual abuse, neglect, abandonment, and other. “Other” maltreatment includes moral/legal maltreatment, educational maltreatment, medical maltreatment, and a true “other” category, and describes only 74 youth in the final sample.

Risk assessment

The assessment of risk in the biological family guides caseworker decision making about whether or not to place a child out-of-home. This construct includes theoretically-relevant aspects of the original home environment, including economic and personal hardships experienced by the caregiver, family stress, and parenting behavior, listed in Table 4. NSCAW measures of the risk assessment include yes/no questions asked of the caseworker at wave one. Eight personal hardship items, one economic hardship items, and two stress/social support items are consolidated into an index of parental risk that equals the total number of indicated problems. Positive responses on three items about parenting behavior are counted so that a higher score indicates more disruptive parenting.

Table 4. NSCAW operationalization

Independent Variables	
Placement status	Placement experience at wave three or four; derived by NSCAW researchers from caregiver, child and caseworker interviews.
Placement stability	Derived by NSCAW researchers across four waves of data.
Length of stay	Derived by NSCAW researchers across four waves of data
Dependent Variables	
Internalizing behavior	<i>Withdrawn subscale:</i> I would rather be alone than with others. I refuse to talk. I am secretive or keep things to myself. I am too shy or timid. I don't have much energy. I am unhappy, sad or depressed. I keep from getting involved with others.
Sum of withdrawn, somatic and anxious/depressed subscales of the Youth Self Report.	<i>Somatic subscale:</i> I feel dizzy or lightheaded. I feel overtired without good reason. I feel aches or pains (not stomach or headache) ... headaches ... nausea, feel sick ... problems with eyes (not if corrected by glasses) ... rashes or other skin problems ... stomachaches ... vomiting, throwing up <i>Anxious/depressed subscale:</i> I feel lonely. I cry a lot. I deliberately try to hurt or kill myself. I am afraid I might think or do something bad. I feel that I have to be perfect. I feel that no one loves me. I feel that others are out to get me. I feel worthless or inferior. I am nervous or tense. I am too fearful or anxious. I feel too guilty. I am self-conscious or easily embarrassed. I am suspicious. I think about killing myself. I am unhappy, sad, or depressed. I worry a lot.

Externalizing behavior

Sum of delinquent and aggressive subscales of the Youth Self Report.

Delinquent subscale:

I don't feel guilty after doing something I shouldn't.
I hang around with kids who get in trouble.
I lie or cheat.
I would rather be with older kids than kids my own age.
I run away from home.
I set fires.
I steal at home.
I steal from places other than home.
I swear or use dirty language.
I cut classes or skip school.
I use drugs for non-medical purposes.

Aggressive subscale:

I argue a lot.
I brag.
I am mean to others.
I try to get a lot of attention.
I destroy my own things.
I destroy things belonging to others.
I disobey at school.
I am jealous of others.
I get in many fights.
I physically attack people.
I scream a lot.
I show off or clown.
I am stubborn.
My moods or feelings change suddenly.
I talk too much.
I tease others a lot.
I have a hot temper.
I threaten to hurt people.
I am louder than other kids.

Mediating Variables

Relationship with caregiver

When I'm with my caregiver, I feel good.
When I'm with my caregiver, I feel mad*
When I'm with my caregiver, I feel unhappy.*
My caregiver enjoys spending time with me.
My caregiver does a lot to help me.
My caregiver doesn't seem to have enough time for me.*
My caregiver doesn't seem to know how I feel about things.*
My caregiver trusts me.
My caregiver doesn't let me make any of my own decisions.*
My caregiver is fair with me.
My caregiver doesn't think I can do very much.*
I don't know what my caregiver wants from me.*

Activities with caregiver	<p>Have you done the following things in the past four weeks:</p> <ul style="list-style-type: none"> ▪ gone shopping, ▪ played a sport, ▪ gone to a religious service, ▪ talked about someone you are dating or a party, ▪ gone to a movie/play/museum/concert, ▪ talked about a personal problem, ▪ talked about school or grades, ▪ worked on a school project, ▪ talked about other school things.
Parental monitoring	<p>How often do you leave the house without telling your caregiver or without leaving a note?*</p> <p>How often does your caregiver know where you are when you are away from home?</p> <p>How often does your caregiver know who you are with when you are away from home?</p> <p>How often does your caregiver tell you what time to be home?</p> <p>Before going out, how often do you tell your caregiver when you expect to be back?</p>

Control/Selection Variables

Child demographics	Derived by NSCAW researchers
Child special needs	Obtained from caseworker risk assessment at baseline
Maltreatment history	Derived by NSCAW researchers
Parental risk index	<p>Was there active alcohol abuse?</p> <p>Was there active drug abuse?</p> <p>Did the caregiver have any serious mental health/emotional problems?</p> <p>Did the caregiver have any recent history of arrest or detention in jail or prison?</p> <p>Did the caregiver have any intellectual or cognitive impairments?</p> <p>Did the caregiver have any physical impairments?</p> <p>Was there a history of domestic violence toward the caregiver?</p> <p>Was there a history of abuse or neglect of the caregiver?</p> <p>Did the family have trouble paying for basic necessities?</p> <p>Was there high stress on the family from unemployment, drug use, poverty, or neighborhood violence?</p> <p>Was there low social support available to the family?</p>
Poor parenting index	<p>Did the caregiver have any poor parenting skills such as failure to supervise or monitor children routinely or harsh discipline?</p> <p>Did the caregiver have unrealistic expectations of the child?</p> <p>Did the caregiver use excessive or inappropriate discipline?</p>

Analytic Strategy

The main dependent variables are the internalizing and externalizing behaviors of adolescents 18 and 36 months after investigation by Child Protective Services. The main independent variable is placement in kinship or foster care relative to remaining at home. Other independent variables include other placement events such as the number of placements and length of stay. The mediating variables are aspects of the care environment, including demographic characteristics of the caregiver, relationship between child and caregiver, activities with caregiver, and parental monitoring. Selection and control variables include child characteristics, maltreatment history, and risk assessment of the biological family.

Table 5 summarizes the analytic method used to answer each research question and evaluate each hypothesis. The remainder of the section is organized by hypothesis number as indicated on the path model in Figure 4. More detailed procedural information is provided in the text that follows.

Figure 4. Path model

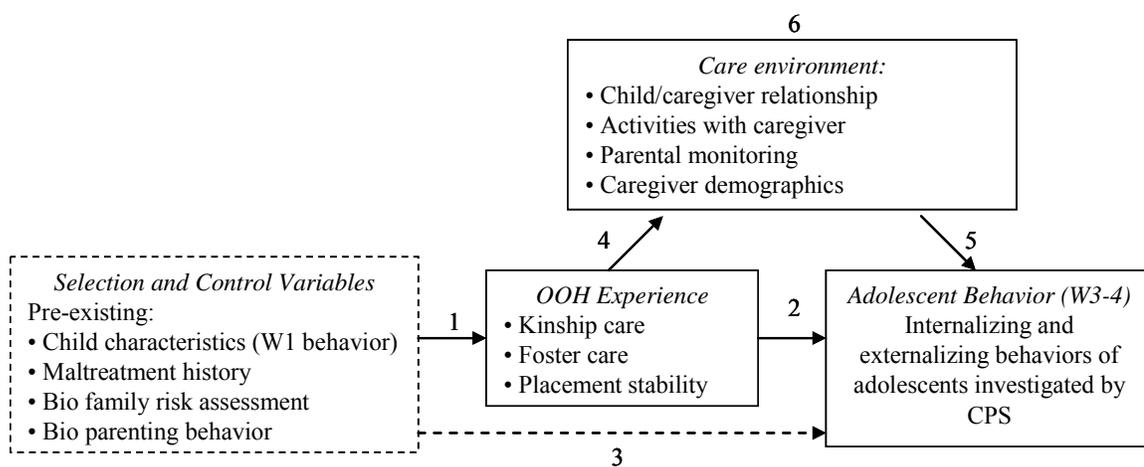


Table 5. Summary of hypotheses and analytic methods

<i>Hypothesis</i>	<i>Analytic Method</i>
1a) Greater risk in the biological family home, maltreatment, and greater behavior problems at baseline will be associated with OOH (out-of-home placement).	1a) Multinomial logit predicting placement in kinship care, foster care, and not placed at waves 3 and 4.
1b) Youth with greater behavior problems will experience a greater number of placements.	1b) Multivariate regression predicting number of OOH placements.
1c) Youth with greater behavior problems will experience longer lengths of stay.	1c) Multivariate regression predicting number of days in OOH.
2a) Compared to remaining at home, OOH will be associated with greater behavior problems. Placement in foster care will be associated with greater behavior problems than kinship care.	2a) Hierarchical regression, Step 1: Regress behavior scores at wave 3 and 4 on placement in kinship care, and foster care, relative to not placed.
2b) Controlling for placement stability will reduce the relationship between OOH and behavior problems.	2b) Hierarchical regression, Step 2: Add stability variables to Step 1.
3) Controlling for preexisting characteristics will reduce the relationship between OOH and behavior problems.	3) Correct for selection using each of four proposed techniques. Determine which model provides the best fit.
4) Placement in foster care or kinship care will be associated with a better relationship between child and caregiver, a greater number of activities between child and caregiver, and a higher level of parental monitoring.	4) Three multivariate regressions predicting relationship with caregiver, activities with caregiver, and parental monitoring from placement status, controlling for caregiver characteristics.
5) Better care environments will be associated with fewer problem behaviors.	5) Regress behavior problems on relationship with caregiver, activities with caregiver, and parental monitoring, correcting for selection.
6) Controlling for care environment will reverse the relationship between OOH and behavior problems to reveal a negative association between placement and behavior problems.	6) Hierarchical regression, Step 4: Add care environment variables to Step 3, correcting for selection.

Data Screening

Data screening procedures and assumption tests follow those outlined by Tabachnick and Fidell (2001). Frequencies and means of all variables of interest were obtained to identify outliers and missing values. Outliers and missing values were recoded using information from the same or other respondents when possible and deleted if not. Sensitivity to the assumptions of multiple regression analysis were evaluated. Independent variables will be assessed for multicollinearity and singularity using squared multiple correlations among independent variables. The Breusch-Pagan/Cook-Weisberg statistic was used to test homoskedasticity. When dependent variables were heteroskedastic, robust standard errors were computed to compensate. When analyzing pooled data, standard errors were clustered around the child ID number.

1. Selection into Placement

Hypothesis one predicts that 1a) Greater risk in the biological family home, maltreatment, and greater behavior problems at baseline will be associated with out-of-home placement. 1b) Youth with greater behavior problems will experience a greater number of placements. 1c) Youth with greater behavior problems will experience longer lengths of stay. Hypotheses 1a was assessed using a multinomial logit model predicting placement kin kinship or foster care relative to remaining at home, as depicted in the equation below. Baseline child characteristics, maltreatment history, and risk assessment of the biological family was used to predict placement, relative to not placed out-of-home. The predictor variables of interest are child behavior problems, which are expected to have significant, positive coefficients for kinship care and foster care.

$$Y_{\text{placement}} = \beta_0 + \beta_1 \text{ child} + \beta_2 \text{ maltreatment} + \beta_3 \text{ risk} + E_i$$

To assess hypothesis 1b, a multiple regression model was used to predict placement stability over the 36 month data collection period. Baseline child characteristics, maltreatment history, and risk assessment of the biological family was used to predict the total number of placements by wave four and cumulative length of stay, as depicted in the equations below. This procedure allowed for examination of the independent effects of baseline characteristics on placement stability. The specific variables of interest are child behavior, which were expected to have significant and positive coefficients.

$$Y_{\text{placements}} = \beta_0 + \beta_1 \text{ child} + \beta_2 \text{ maltreatment} + \beta_3 \text{ risk} + E_i$$

$$Y_{\text{length}} = \beta_0 + \beta_1 \text{ child} + \beta_2 \text{ maltreatment} + \beta_3 \text{ risk} + E_i$$

2. Impact of Placement on Behavior

Hypothesis two predicts that 2a) Compared to remaining at home, out-of-home placements will be associated with greater behavior problems. Placement in foster care will be associated with greater behavior problems than kinship care. 2b) Controlling for unstable placement history will reduce the relationship between OOH and behavior problems. Youth who experience shorter average lengths of stay will exhibit great behavior problems that youth with longer average lengths of stay.

Hypothesis two was tested using hierarchical regression analysis. Internalizing and externalizing behavior at wave three and four was regressed on baseline predictor variables using the pooled dataset. Each type of behavior problem--internalizing and externalizing--was assessed separately, and the same analysis procedures were followed for each. Variables were added gradually in a sequential process to assess any change in

the predictive value of the model, as measured by the R-squared statistic. Variables were entered in order of theoretical importance in an attempt to explain any observed effects of placement on behavior through other aspects of the placement experience. Changes to the original placement variables and the overall model were interpreted after each step.

In the first step, wave 3 and 4 behavior scores were regressed on the kinship and foster care variables, as indicated in the equation below. Effects of placement in kinship care or foster care were assessed relative to the omitted group that is not placed.

Variables of interest include the kinship and foster care variables to assess hypothesis 2a. Each of these variables was expected to have a significant and positive coefficient, indicating a positive effect of placement on behavior problems.

$$Y_{\text{behavior}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + E_i$$

In the second step of the hierarchical regression model, placement stability variables were entered according to the equation below. It was expected that stability variables will be significant and negative. This would indicate a positive effect of placement instability on behavior problems. It was also expected that the R-squared statistic will increase significantly, indicating better predictive ability of the step 2 model over step 1. The size of the kinship care and foster care variables was expected to decrease but remain significant after adding stability variables.

$$Y_{\text{behavior}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + \beta_3 \text{stability} + E_i$$

3. Selection Correction

Hypothesis three predicts that controlling for preexisting characteristics will reduce the relationship between out-of-home placement and behavior problems. Four different procedures, described below, were proposed to correct for selection on the step two hierarchical regression model. The selection correction method that produces the best model fit is presented in the final analysis.

One way that researchers can correct for selection into placement is to include baseline measures of child characteristics, maltreatment history, and risk assessment of the biological family, as control variables in a model predicting future outcomes.

Controlling behavior at wave one allows researchers to predict change in behavior with reference to initial behavioral problems. The first selection correction method adds baseline child, family and maltreatment characteristics to the step 2 model above as depicted in the equation below.

$$Y_{\text{behavior}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + \beta_3 \text{stability} + \beta_4 \text{baseline characteristics} + E_i$$

A second method for correcting for selection is to develop a model of change over time. Behavior scores at wave one are subtracted from behavior scores at wave four to compute a behavior change score. The computed score for behavior change becomes the dependent variable and independent variables are changes in predictor variables since baseline, as depicted in the equation below. This technique builds in control for initial behavior and allows for examination of influences on behavior change over time.

Predictor variables are then interpreted for their effect on reducing or increasing behavior problems from their baseline levels. Demographic variables that do not change over time

drop out of the equation. Changes in risk assessment and maltreatment variables cannot be included because they are only available at wave one.

$$Y_{\Delta \text{ behavior}} = \beta_0 + \beta_1 \Delta \text{ kin} + \beta_2 \Delta \text{ foster} + \beta_3 \Delta \text{ stability} + \beta_4 \Delta \text{ length} + E_i$$

A third method for correcting for selection is to use propensity score matching to create a subsample of youth in each placement status who have an equal propensity of being placed out of home. This is accomplished through a two step process where out-of-home placement at any time over the study period is predicted in a logit model using wave one variables. Each youth receives a propensity score for ever being placed out-of-home and youth in each of the three placement statuses at wave 3 or 4 (kinship, foster, never placed) are matched on their propensity, or likelihood, of being placed out-of-home. The procedure has advantages over previous methods because it replicates random assignment into groups. By manually matching the samples, each group will have an equal overall propensity for assignment to that condition. Drawbacks of this procedure include the possibility that youth who remain at home and youth who are placed out-of-home are different enough circumstances that matching efforts would fail. It could also restrict the sample size or exclude youth with extreme scores.

The fourth method for correcting for selection into placement is using Heckman's selection correction. This technique makes statistical adjustments based on each child's propensity to be placed in out-of-home care. Like propensity score matching, each youth receives a score for his or her likelihood of being placed based upon a logit model predicting placement using baseline characteristics. Instead of manually matching youth in different groups on their propensity score, a new coefficient, lambda, is attached to the

placement variable which statistically adjusts for the likelihood of being placed out-of-home (see equations below). This technique allows all youth to remain in the sample.

$$\lambda_{\text{placement}} = \alpha \text{ baseline characteristics}$$
$$Y_{\text{behavior}} = \beta_0 + \beta_1 \lambda_{\text{placement}} + \beta_2 \text{ stability} + \beta_3 \text{ length} + E_i$$

Effects of selection correction are interpreted based on changes to the placement variables obtained in the model without correction. It was expected that that placement status and stability coefficients would both be reduced after controlling for baseline characteristics that affect placement experiences and subsequent behavior. All subsequent analyses evaluating effects of placement on behavior continue to correct for selection.

4. Impact of Placement on the Care Environment

Hypothesis four predicts that out-of-home placement will be associated with a better care environment than the families of youth not placed. This hypothesis was tested using three multivariate regressions that use placement status to predict scores on 1) relationship with caregiver, 3) activities with caregiver, and 4) parental monitoring, shown below. Controls for caregiver characteristics, including age, race, and education will also be included. This procedure allows for examination of the independent effects of placement status on the care environment, controlling for caregiver characteristics. Specific variables of interest include the placement variables of kinship care and foster care, both of which were expected to have significant, positive coefficients when predicting care environment. These three aspects of the care environment are conceptually distinct and are analyzed separately to allow for unique effects.

$$Y_{\text{relationship}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + \beta_3 \text{caregiver controls} + E_i$$

$$Y_{\text{activities}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + \beta_3 \text{caregiver controls} + E_i$$

$$Y_{\text{monitoring}} = \beta_0 + \beta_1 \text{kin} + \beta_2 \text{foster} + \beta_3 \text{caregiver controls} + E_i$$

5. Impact of the Care Environment on Behavior

Hypothesis five predicts that better care environments will be associated with fewer problem behaviors. This hypothesis was tested by regressing behavior problems on relationship with caregiver, activities with caregiver, and parental monitoring. Controls for other caregiver characteristics were also included as depicted in the equation below. This procedure allows for examination of the independent effects of each unique aspect of the care environment on behavior. Specific variables of interest include scores on relationship, activities, and monitoring--all of which were expected to have significant and negative coefficients, indicating that improved care environments have a negative effect on behavior problems.

$$Y_{\text{behavior}} = \beta_0 + \beta_1 \text{relationship} + \beta_2 \text{activities} + \beta_3 \text{monitoring} + \beta_4 \text{caregiver controls} + E_i$$

6. Care Environment as a Mediator

Hypothesis six predicts that controlling for care environment will reverse the relationship between out-of-home placement and behavior problems to reveal a negative association between placement and behavior problems. To test this hypothesis, unique care environment variables of relationship with caregiver, caregiver activities, and parental monitoring will be added to the step 3 hierarchical model from hypothesis 2b, above (see the equation below). It was expected that each of these variables will have a significant and negative coefficient, indicating a negative effect of improved care

environment on reduced behavior problems. It was further expected that the R-squared statistic will significantly increase to reflect the better predictive ability of the new model over the previous model. The coefficients on the foster care and kinship care variables were expected to become negative and/or not significant.

$$Y_{\text{behavior}} = \beta_0 + \beta_1 \text{ kin} + \beta_2 \text{ foster} + \beta_3 \text{ stability} + \beta_4 \text{ relationship} + \beta_5 \text{ activities} + \beta_6 \text{ monitoring} + \beta_7 \text{ caregiver controls} + E_i$$

CHAPTER 4: RESULTS

This chapter presents a detailed description of data and decisions made during data screening. It also presents results of the analyses proposed in chapter three. Each research question is answered and each hypothesis is evaluated.

Sample Description

Table 6 provides means and standard deviations of all continuous study variables, and percentages of all categorical study variables. The final sample size is 1,496. The large majority of youth (80%) were not placed out-of-home at wave 3 and 4. Total number of placements across the study period ranged from 0-9, with a mean of 1.01. Cumulative number of days in placement ranged from 0-1179, roughly the entire study period, with a mean of 241.

Youth ranged from 12-18 in age, with a mean of 15. Race was split 48% White, 29% Black, 15% Hispanic, and 9% other. Thirty-seven percent of youth had special needs. Standardized scores on the Youth Self Report are normed with a mean of 50 for the general population. Scores in this sample ranged from 26-91 with a mean of 48 for internalizing, and from 25-97 with a mean of 54 for externalizing.

Half of maltreatment reports were not substantiated (53%). Neglect was the most common form of maltreatment (14%), followed by sexual abuse (12%), physical abuse (11%), abandonment (5%), and other (4%). Forty-two percent of youth received some form of child welfare services prior to wave one. On a scale of 0-11, observed scores on the index of parental risk ranged from 0-10 with a mean of 2.54. Scores on the index of poor parenting ranged from 0-3 with a mean of 1.05.

Table 6. Frequency table of study variables

<u>Type of OOH placement</u>	<u>M</u>	<u>SD</u>
Not placed OOH	80.15%	
Foster care	12.10%	
Kinship care	7.75%	
Total number of placements	1.20	1.74
Cumulative number of days in OOH	278.41	399.32
Average length of stay per placement	110.9	165.93
<u>Child Characteristics</u>		
Child age	14.64	1.46
Child race		
Black	29.01%	
White	47.59%	
Hispanic	14.77%	
Other	8.62%	
Child gender		
Male	41.18%	
Female	58.82%	
Child special needs	39.37%	
<u>Adolescent Behavior</u>		
Internalizing	47.75	10.74
Externalizing	53.63	11.01
<u>Maltreatment History</u>		
Type of maltreatment		
Unsubstantiated	53.01%	
Physical abuse	11.43%	
Sexual abuse	12.43%	
Neglect	14.17%	
Abandonment	5.08%	
Other	3.88%	
Prior child welfare services	42.11%	
<u>Bio Family Characteristics</u>		
Index of parental risk	2.54	2.11
Index of poor parenting	1.05	1.04

Frequency table uses a pooled sample including waves 3 and 4; N=1,496.

Tables 7 and 8 present correlation matrices of critical study variables. These tables are used to identify pairs of variables that have strong correlations. Variables with strong correlations cannot be used together as predictor variables in multiple regressions because it would violate assumptions of multicollinearity. Significance of correlations is not important because a large sample size can create significant differences on relatively weak correlations. When correlation coefficients reach .80, the two variables are indistinguishable from one another in a regression.

Table 7. Correlation matrix for placement variables

	Not placed	Foster care	Kinship care	Cumulative LOS	Total # OOH	Average LOS
Not placed	1.00					
Foster care	-0.74	1.00				
Kinship care	-0.60	-0.09	1.00			
Cumulative LOS	-0.73	0.57	0.40	1.00		
Total # OOH	-0.65	0.56	0.29	0.85	1.00	
Average LOS	-0.56	0.38	0.38	0.84	0.55	1.00

Table 8. Correlation matrix for care environment variables

	Parental monitoring	Total # activities	Overall relationship	Emotional security	Involvement	Structure
Parental monitoring	1.00					
Total # activities	0.30	1.00				
Overall relationship	0.31	0.37	1.00			
Emotional security	0.24	0.28	0.75	1.00		
Involvement	0.25	0.33	0.79	0.52	1.00	
Structure	0.24	0.27	0.81	0.51	0.54	1.00

Cumulative length of stay, measured in days, and total number of out-of-home placements are strongly related (.85) and indistinguishable from one another in a regression model. Instead of using cumulative length of stay and total number of placements together, a new average length of stay variable is created by dividing the

length of stay by number of placements. This new variable captures effects from the cumulative experiences in one variable. It can also be used to describe the average experience for each youth in each placement, which means it can be used in a pooled sample of waves 3 and 4.

Care environment variables are also correlated with one another. The most problematic are the relationship subscale scores with the overall relationship score with correlation coefficients ranging from .75 - .81. Collinearity should be expected because these scores are computed from the same items. To correct this issue, all multivariate predictions will include only the overall relationship score and not scores for the subscales. Scores for emotional security, involvement, and structure are still used in descriptive bivariate analyses.

1. Selection into Placement

Research question one asks “Are there systematic differences in placement experiences?” It was hypothesized that 1a) greater risks in the biological family home, maltreatment, and greater behavior problems would be associated with out-of-home placement. Behavior problems, in particular, were hypothesized to contribute to 1b) a larger number of placements and 1c) longer length of stay.

Table 9 presents results of the multinomial logit model predicting placement in kinship or foster care relative to not placed in model (1). Multiple regressions predicting number of placements and cumulative length of stay over the study period in models (2) and (3). Model 1 analyzed a pooled sample of youth at waves 3 and 4. Models 2 and 3 use an unpooled sample.

Table 9. Effect of baseline characteristics on out-of-home placement experience

Dependent variable	(1)		(2)	(3)
	Foster care	Kinship care	Number of Placements	Cumulative LOS
Age	0.963 (0.064)	1.069 (0.086)	0.035 (0.035)	8.494 (9.631)
Male	0.778 (0.141)	1.335 (0.284)	-0.118 (0.100)	9.045 (25.336)
Black	1.669 (.324)*	2.843 (.661)**	0.453 (0.127)**	122.669 (31.418)**
Hispanic	0.954 (0.265)	0.982 (0.358)	0.079 (0.122)	27.897 (31.701)
Other	1.154 (0.358)	1.81 (0.647)	0.085 (0.190)	30.190 (42.849)
Special needs	1.154 (.358)**	1.432 (0.647)	0.418 (0.114)**	70.760 (26.693)**
Baseline internalizing behavior	1.002 (9.000)	0.993 (0.011)	-0.005 (0.005)	-2.067 (1.427)
Baseline externalizing behavior	0.991 (0.043)	0.989 (0.010)	-0.001 (0.006)	0.009 (1.381)
Risk index	0.987 (0.043)	1.107 (0.058)	0.032 (0.030)	10.719 (7.298)
Poor parenting index	1.561 (.141)**	1.455 (.161)*	0.262 (0.058)**	54.577 (14.215)**
Physical abuse	0.569 (0.196)	0.862 (0.304)	-0.208 (0.152)	-53.503 (37.580)
Sexual abuse	0.863 (0.261)	2.601 (.758)**	0.247 (0.150)	74.263 (40.060)
Neglect	1.115 (0.273)	1.517 (0.417)	0.243 (0.163)	37.283 (39.101)
Abandonment	3.14 (.971)**	1.044 (0.536)	0.565 (0.252)*	197.937 (72.753)**
Other abuse	0.735 (0.345)	0.635 (0.361)	-0.034 (0.290)	49.700 (80.025)
Prior child welfare services	2.422 (.441)**	1.494 (0.325)	0.300 (0.105)**	87.990 (28.074)**
Control for wave	+	+	N/A	N/A
N	1496		842	842
R ²	0.12		0.13	0.13

Model 1 uses pooled sample to predict placement at wave 3 and 4. Base outcome: "not placed"

Models 2-3 use the unpooled sample to predict cumulative OOH experience through wave 4.

Robust standard errors in parentheses. * $p < .05$; ** $p < .01$

Hypothesis 1a) was partially supported. Each additional poor parenting behavior is associated with a 56% increase in the odds of foster care placement, and 46% increase in the odds of kinship placement. Relative to youth whose allegations of abuse were not substantiated, abandonment is associated with a three times the odds of foster care placement, and sexual abuse is associated with two and a half times the odds of kinship placement.

Baseline behavior does not predict subsequent placement experiences. Hypotheses 1b) and 1c) were not supported. Neither internalizing nor externalizing behavior predicts an increase in number of placements or longer length of stay.

There are some noteworthy effects on placement experience that were not hypothesized. Black youth have a 67% increase in the odds entering foster care compared to White youth, and almost three times the odds of entering kinship care. Black youth also experience a greater number of placements and longer lengths of stay than White youth. Youth with special developmental or behavioral needs have over two and a half times the odds of foster care placement than youth who do not have special needs, but having special needs does not predict placement in kinship care. Having special needs is associated with a .418 increase in the number of placements and a 71 day longer length of stay. Previous experience receiving child welfare services is associated with an increased likelihood of placement in foster care, but does not increase likelihood of placement in kinship care. Prior child welfare services are associated with a .300 increase in number of placements, and an 88 day longer length of stay.

2. Impact of placement on behavior

Research question two asks “What is the effect of out-of-home placement on behavior?” It was hypothesized that 2a) kinship and foster care would have negative effects on adolescent behavior. It was also hypothesized that 2b) controlling for unstable placement histories would reduce the negative effect of out-of-home placement.

Table 10. Effect of out-of-home placement on behavior, no controls

	YSR Internalizing Standard Score		YSR Externalizing Standard Score	
	(1)	(2)	(3)	(4)
Foster care	1.130 (1.010)	1.026 (1.073)	-0.140 (0.948)	-0.747 (0.991)
Kinship care	-1.217 (1.085)	-1.338 (1.117)	-2.567 (1.131)*	-3.273 (1.127)**
Average length of stay		0.001 (0.002)		0.003 (0.002)
N	1496	1496	1496	1496
R^2	0.01	0.01	0.00	0.01

Models 1-4 use a pooled sample predicting behavior at wave 3 and 4.

Robust standard errors in parentheses, clustered around caseid.

* $p < .05$; ** $p < .01$

Table 10 presents results from multiple regressions predicting internalizing and externalizing behavior at wave three and four based upon their placement in that wave and their average length of stay per placement. Average length of stay was used because the proposed number of placements and cumulative length of stay were highly collinear and violated the assumptions of multiple regression. Hypotheses 2a) and 2b) were not supported. Foster care did not significantly predict internalizing or externalizing behavior. Kinship care did not predict internalizing behavior and had a protective effect on externalizing behavior. Youth in kinship care reported 3.273 fewer externalizing

behaviors than youth who were investigated, but not placed, controlling for average length of stay. Average length of stay was not a significant predictor of either internalizing or externalizing behavior, and only magnified the protective affect of kinship care. None of these models are good predictors of adolescent behavior, as evidenced by low R-squared statistics (0.00-0.01).

3. Selection Correction

Research question three asks “Does the effect of out-of-home placement on behavior remain after correcting for selection into placement?” It was hypothesized that controlling for pre-existing characteristics would reduce the negative effect of out-of-home placement on behavior. There is little reason to suspect the hypothesized selection effect because baseline behavior did not predict subsequent placement experiences, and placement in kinship and foster care did not predict increased behavior problems. Nonetheless, Table 11 presents results from the first selection correction method, controlling for baseline characteristics, to assess the independent effect of placement and baseline characteristics on subsequent behavior. The models with baseline characteristics have R-squared statistics of .22 and .29, indicating marked improvement over previous models.

Hypothesis 3) is not supported. The effect of foster care remains non-significant for both internalizing and externalizing behavior. Kinship care does not predict internalizing behavior and continues to protect against externalizing behavior. Youth in kinship care report a significant 2.574 fewer externalizing behaviors than do youth investigated by Child Protective Services but not placed.

Table 11. Effect of placement on behavior, controlling for baseline characteristics

	YSR Internalizing Standard Score (1)	YSR Externalizing Standard Score (2)
Foster care	0.492 (0.981)	-1.109 (0.923)
Kinship care	-1.212 (1.068)	-2.574 (1.082)*
Average length of stay	0.002 (0.002)	0.003 (0.002)
Child age	0.183 (0.221)	-0.198 (0.225)
Male	-1.441 (0.609)*	-2.510 (0.593)**
Black	0.232 (0.698)	0.215 (0.714)
Hispanic	0.504 (0.870)	-0.099 (0.853)
Other race/ethnicity	-0.637 (1.032)	-0.903 (1.036)
Special needs	0.508 (0.624)	0.350 (0.609)
Baseline behavior	0.406 (0.029)**	0.456 (0.029)**
Parental risk index	-0.007 (0.160)	0.191 (0.151)
Poor parenting index	0.351 (0.322)	0.089 (0.320)
Physical abuse	0.203 (0.896)	0.712 (0.997)
Sexual abuse	1.378 (0.979)	-0.107 (0.865)
Neglect	-0.077 (0.956)	-0.573 (0.949)
Abandonment	-2.120 (1.187)	-0.493 (1.428)
Other abuse	-0.882 (1.246)	-1.172 (1.214)
Prior child welfare services	-0.412 (0.655)	-0.689 (0.656)
N	1496	1496
R^2	0.22	0.29

Models 1-2 use a pooled sample predicting behavior at wave 3 and 4.

Robust standard errors in parentheses, clustered around caseid.

* $p < .05$; ** $p < .01$

There are some noteworthy effects that were not hypothesized. Females report 2.510 greater externalizing behavior scores and 1.441 greater internalizing behavior scores than do males. Maltreatment type does not predict increase behavior problems relative to youth whose maltreatment allegations were not substantiated.

4. Impact of placement on the care environment

Research question four asks “Do kinship and foster placements offer better care environments than those of biological families not placed out-of-home?” It was hypothesized that out-of-home placement would be associated with a better relationship between child and caregiver, a greater number of activities between child and caregiver, and a higher level of parental monitoring. These characteristics are conceptually distinct, and are examined separately to assess unique effects.

Table 12 provides descriptive analyses of the differences between the caregivers of children who are not placed, and placed in either foster care or kinship care using pooled data from waves 1, 3 and 4. Pooling data across the three available waves increased the number of youth in each placement status to allow for the detection of statistically significant differences. Longitudinal data are not needed for this question, which primarily seeks to understand differences between the care environments of placements at any given time. Chi-square tests of significance are presented for categorical variables and t-tests are presented for continuous variables. All tests use a cutoff of $p < .05$ to determine statistical significance.

The demographic characteristics of caregivers in the three placements are significantly different. A larger proportion of kinship caregivers are Black (50%) than should be expected if placement and race were statistically independent. The proportion

of kinship and foster caregivers who are over age 46 (55% and 56%, respectively) is much greater than should be expected given the age of the full sample (24% age 46 and older). Foster care has a much larger proportion of college-educated caregivers (32%) and a smaller proportion of caregivers with less than high school education (10%) than would be expected if placement and education were statistically independent.

Table 12. Differences in care environment by placement status

	Not placed n=2084	Foster care n=263	Kinship care n=208	Total N=2555
<u>Caregiver characteristics</u>	%	%	%	%
<u>Race*</u>				
Black	26.58	32.23	50.42	29.39
White	53.75	52.90	36.02	52.12
Hispanic	12.67	7.10	8.05	11.64
Other	7.00	6.77	5.51	6.84
<u>Age*</u>				
45 and younger	83.32	44.55	44.49	75.55
46 and older	16.69	55.45	55.51	24.45
<u>Education*</u>				
No high school	27.39	10.07	22.97	25.22
High school or equivalent	57.61	57.64	59.01	57.73
College graduate	15.00	32.29	18.02	17.06
<u>Care Environment</u>				
Parental monitoring ^{a c}	20.55	22.01	20.96	20.83
# Activities with CG	4.62	4.69	4.47	4.62
Overall relationship w/CG ^a	3.27	3.18	3.22	3.25
Emotional security ^b	3.44	3.36	3.33	3.42
Involvement	3.42	3.37	3.36	3.41
Structure	3.32	3.27	3.31	3.31

* Pearson chi-square $p < .05$

a = never placed and foster care are significantly different, t -test $p < .05$

b = never placed and kinship care are significantly different, t -test $p < .05$

c = foster care and kinship care are significantly different, t -test $p < .05$

Descriptive statistics used a pooled sample including waves 1, 3 and 4; N=2555

Foster caregivers displayed more parental monitoring than either kinship caregivers or biological parents of children not placed. However, youth reported a better overall relationship with biological parents than foster parents. There was no difference in the overall child/caregiver relationship for youth biological parents and kinship caregivers, but kinship caregivers provided less emotional security than did biological parents. There were no differences in number of activities with caregiver by placement status.

Table 13 presents results of three multiple regressions predicting care environment from placement status. Since placements vary systematically on caregiver demographic variables that could also influence the care environment, caregiver demographics are included as controls. The three relationship subscales: emotional security, involvement, and structure, are not included because they are highly collinear with the overall relationship score and violate the assumptions of multiple regression.

After controlling for caregiver characteristics, foster caregivers provide significantly greater levels of parental monitoring than caregivers of youth who are not placed. Kinship caregivers trend toward greater levels of parental monitoring than biological parents. The marginally significant negative effects of placement in foster care on relationship with caregiver disappear after controlling for caregiver characteristics. The total number of activities with caregiver does not vary by placement status.

There are some racial differences in the care environment that were not hypothesized. Black caregivers provide significantly lower levels of parental monitoring than do White caregivers. Caregivers of another race engage in significantly fewer activities with youth than do White caregivers. There were no systematic differences in

the care environment by caregiver age or level of education. Generally, caregiver demographics provide little increase to the overall predictive ability of the model. The F test for their contribution to the previous model failed to reach statistical significance.

Table 13. Effect of placement status on the care environment

	Parental Monitoring		Number of Activities with Caregiver		Relationship with Caregiver	
	(1)	(2)	(3)	(4)	(5)	(6)
Foster care	1.420 (0.275)**	1.391 (0.302)**	0.187 (0.161)	0.171 (0.170)	-0.089 (0.051)+	-0.070 (0.053)
Kinship care	0.505 (0.318)	0.611 (0.322)+	-0.187 (0.179)	-0.206 (0.186)	-0.051 (0.054)	-0.026 (0.055)
CG Black		-0.564 (0.224)*		0.163 (0.136)		-0.045 (0.036)
CG Hispanic		-0.152 (0.323)		0.223 (0.191)		-0.077 (0.053)
CG Other		-0.639 (0.419)		-0.415 (0.217)+		0.026 (0.059)
CG age 45+		0.012 (0.237)		-0.060 (0.137)		-0.039 (0.039)
CG High School		-0.127 (0.233)		-0.138 (0.134)		-0.049 (0.037)
CG College		0.340 (0.288)		0.239 (0.172)		-0.016 (0.050)
Control for wave	+	+	+	+	+	+
N	2555	2555	2555	2555	2555	2555
R ²	0.01	0.02	0.00	0.01	0.00	0.01

Standard errors are clustered around caseid, shown in parentheses.

Models 1-6 use a pooled sample including waves 1, 3 and 4.

+ $p < .10$; * $p < .05$; ** $p < .01\%$

5. Impact of the care environment on behavior

Research question five asks “What is the effect of the care environment on behavior?” It was hypothesized that better care environments would be associated with fewer problem behaviors. This analysis continues to consider measures of the care environment conceptually distinct; they are examined separately to assess unique effects.

Table 14 presents results of multivariate regressions predicting adolescent behavior from the care environment. Models are run separately for internalizing and externalizing behaviors, and with and without controls for pre-placement experiences. R-squared statistics indicate modest model fit without controls that is improved with the addition of baseline measures. These models with care environment and child controls in table 13 have more predictive ability than previous models in table 11 that include placement variables and child controls.

Hypothesis 5 is partially supported by this analysis. After controlling for child characteristics at baseline, each one-unit increase in parental monitoring is associated with a .262 reduction in internalizing behaviors and a .424 reduction in externalizing behaviors. Each additional activity with caregiver is associated with a marginally significant .203 reduction in internalizing behavior. Each one-unit increase in relationship with caregiver is associated with a 3.500 reduction in internalizing behaviors and a 2.298 reduction in externalizing behaviors.

Girls continue to report higher internalizing and externalizing behavior scores than do boys. There are no differences in reported behavior problems by age or race. Pre-placement parental risk, poor parenting, or maltreatment are not significant predictors of behavior at wave three and four.

Table 14. Effect of the care environment on adolescent behavior

	YSR Internalizing Std. Score		YSR Externalizing Std. Score	
	(1)	(2)	(3)	(4)
Parental monitoring	-0.262 (0.092)**	-0.262 (0.086)**	-0.458 (0.101)**	-0.424 (0.091)**
Activities with CG	-0.103 (0.136)	-0.203 (0.120)+	0.123 (0.149)	-0.007 (0.129)
Relationship with CG	-5.062 (0.724)**	-3.500 (0.645)**	-4.159 (0.753)**	-2.298 (0.641)**
Age		-0.009 (0.211)		-0.353 (0.221)
Male		-1.813 (0.591)**		-3.230 (0.588)**
Black		-0.173 (0.648)		-0.387 (0.691)
Hispanic		0.341 (0.844)		-0.353 (0.829)
Other race/ethnicity		-0.852 (0.987)		-1.100 (0.963)
Special Needs		-0.024 (0.592)		-0.166 (0.595)
Baseline behavior		0.360 (0.028)**		0.412 (0.029)**
Parental risk index		0.028 (0.149)		0.224 (0.146)
Poor parenting index		0.268 (0.301)		0.034 (0.303)
Physical abuse		-0.300 (0.861)		0.439 (0.932)
Sexual abuse		0.994 (0.931)		-0.532 (0.816)
Neglect		-0.376 (0.894)		-0.871 (0.928)
Abandonment		-1.447 (1.089)		-0.256 (1.372)
Other abuse		-1.274 (1.146)		-1.616 (1.154)
Prior child welfare services		-0.210 (0.603)		-0.609 (0.614)
N	1496	1496	1496	1496
R^2	0.12	0.29	0.10	0.33

Models 1-4 use a pooled sample including waves 3 and 4

Robust standard errors in parentheses, clustered around caseid

+ $p < .10$; * $p < .05$; ** $p < .01$

6. Care environment as a mediator

In order for the care environment to mediate the relationship between out-of-home placement and behavior the way that was hypothesized, placement variables should have a significant positive effect on behavior problems while care environment variables should have a significant negative effect on behavior problems. Because this prerequisite condition is not met, the care environment is not a mediator for kinship and foster care placements in the way that was hypothesized. It is, however, possible to examine the effects of predictor variables simultaneously to determine which variables have the greatest influence on adolescent behavior. It is also possible to identify direct and indirect effects of placement on behavior. Table 15 presents results of the full model for internalizing behavior and Table 16 presents results of the full model for externalizing behavior.

Placement in foster care does not directly affect internalizing or externalizing behavior relative to youth who are investigated by Child Protective Services but not placed out-of-home. Kinship care has no direct effect on internalizing behavior, but has a protective effect on externalizing behavior. Placement in kinship care is associated with a 2.069 decrease in externalizing behavior relative to youth who are investigated by CPS but not placed. Foster care has an indirect protective effect on internalizing and externalizing behavior via increased parental monitoring.

Table 15. Full model predicting internalizing behavior, entire sample

	YSR Internalizing Standard Score		
	(1)	(2)	(3)
Foster care	1.026 (1.073)	1.563 (0.979)	1.210 (0.917)
Kinship care	-1.338 (1.117)	-0.850 (1.043)	-0.680 (0.992)
Parental monitoring		-0.282 (0.092)**	-0.278 (0.087)**
Activities with caregiver		-0.108 (0.136)	-0.202 (0.120)
Relationship with caregiver		-5.069 (0.727)**	-3.460 (0.649)**
Child age			-0.005 (0.211)
Male			-1.800 (0.591)**
Black			-0.182 (0.663)
Hispanic			0.341 (0.847)
Other race/ethnicity			-0.847 (0.999)
Special needs			-0.135 (0.596)
Baseline behavior			0.360 (0.028)**
Parental risk index			0.037 (0.151)
Poor parenting index			0.232 (0.301)
Physical abuse			-0.267 (0.862)
Sexual abuse			1.053 (0.935)
Neglect			-0.359 (0.894)
Abandonment			-1.683 (1.099)
Other abuse			-1.273 (1.143)
Prior child welfare services			-0.308 (0.612)
N	1496	1496	1496
R^2	0.01	0.13	0.29

Models 1-3 use a pooled sample including waves 3 and 4 and control for wave.

Robust standard errors in parentheses, clustered around caseid

+ $p < .10$; * $p < .05$; ** $p < .01$

Table 16. Full model predicting externalizing behavior, entire sample

	YSR Externalizing Standard Score		
	(1)	(2)	(3)
Foster care	-0.747 (0.991)	0.082 (0.968)	-0.218 (0.939)
Kinship care	-3.273 (1.127)**	-2.724 (1.054)**	-2.069 (1.020)*
Average length of stay	0.003 (0.002)	0.001 (0.002)	0.002 (0.002)
Parental monitoring		-0.459 (0.101)**	-0.423 (0.093)**
Activities with caregiver		0.120 (0.149)	-0.009 (0.129)
Relationship with caregiver		-4.154 (0.755)**	-2.257 (0.644)**
Child age			-0.358 (0.222)
Male			-3.221 (0.589)**
Black			-0.316 (0.702)
Hispanic			-0.380 (0.826)
Other race/ethnicity			-1.091 (0.974)
Special needs			-0.159 (0.591)
Baseline behavior			0.411 (0.029)**
Parental risk index			0.225 (0.148)
Poor parenting index			0.050 (0.306)
Physical abuse			0.414 (0.936)
Sexual abuse			-0.467 (0.809)
Neglect			-0.828 (0.924)
Abandonment			-0.422 (1.352)
Other abuse			-1.703 (1.170)
Prior child welfare services			-0.638 (0.624)
N	1496	1496	1496
R ²	0.01	0.11	0.34

Models 1-3 use a pooled sample including waves 3 and 4 and control for wave.

Robust standard errors in parentheses, clustered around caseid.

+ $p < .10$; * $p < .05$; ** $p < .01$

Controlling for current placement and pre-placement experiences, the current care environment is the best predictor of adolescent behavior. Each one-unit improvement in relationship with caregivers is associated with a 3.460 reduction in internalizing behavior and a 2.257 reduction in externalizing behavior. Each one-unit increase in parental monitoring is associated with a .278 decrease in internalizing behaviors and a .423 decrease in externalizing behaviors. Number of activities with caregiver did not significantly predict behavior.

There are noteworthy effects of baseline characteristics on adolescent behavior once proximal care environment and placement variables are taken into account. Females report 1.800 more internalizing behaviors and 3.221 externalizing behaviors than do boys. Type of maltreatment did not predict increased problem behaviors relative to unsubstantiated maltreatment. Neither parental risk nor poor parenting at baseline predicts internalizing or externalizing behaviors at waves 3 and 4.

Final models for both internalizing and externalizing behavior provide acceptable model fit, with R-squared statistics of .29 and .34, respectively. Adding care environment variables significantly increased the predictive ability of model 2 over model 1. Adding baseline experiences and characteristics significantly increased the predictive ability of model 3 over model 2.

Caregiver controls were not included in the final model because they had little independent effect on the care environment and no direct effect on adolescent behavior. The final analysis is not weighted because using the weights substantially inflated the standard errors and obscured many of the results. Also, some youth had a weight of zero that excluded some cases from analysis and reduced the sample size. Although this

decision precludes national generalizations, it allows for increased ability to detect significant trends and better understand the effects of placement and the care environment on adolescent behavior.

Interaction terms were included in the final model to determine whether race or gender had a differential effect based on placement status, care environment, or type of abuse (not shown). Interaction terms were entered separately, taking care not to introduce multicollinearity. Coefficients were assessed for significance and influence on the main effects. Racial interactions were not significant. Gender interactions were significant for parental monitoring and relationship with caregiver, so the final model was run separately for boys and girls to further examine gender differences. Results of the final models by gender are provided in Table 17 and 18.

The gender differentiated models reveal substantial differences in strength and significance of predictors. The protective effects of kinship care on externalizing behavior in the full model are only significant for girls. Increased levels of parental monitoring only have protective effects for girls. Relationship with caregiver remains a strong protective effect on internalizing and externalizing behavior for girls and internalizing behavior for boys.

Other child demographics like age, race, and special needs status do not predict behavior for boys or girls. Baseline parental risk, poor parenting, and maltreatment history are not significant predictors of problem behaviors for boys or girls. All differential effects by gender seem to be operating through the influence of the care environment on behavior.

Table 17. Final model predicting boys' behavior

	YSR Standard Score	
	Internalizing	Externalizing
Foster care	-0.110 (1.542)	1.478 (1.564)
Kinship care	0.498 (1.644)	0.029 (1.429)
Average length of stay	0.002 (0.003)	0.000 (0.002)
Parental monitoring	-0.167 (0.130)	-0.240 (0.123)
Activities with caregiver	-0.233 (0.192)	-0.229 (0.188)
Relationship with caregiver	-2.025 (1.002)*	-1.143 (1.050)
Child age	-0.034 (0.350)	-0.223 (0.330)
Black	-0.053 (1.111)	-0.780 (1.121)
Hispanic	0.538 (1.430)	-0.855 (1.178)
Other race/ethnicity	0.474 (1.390)	-1.627 (1.486)
Special needs	-0.799 (0.958)	-0.583 (0.897)
Baseline behavior	0.397 (0.042)**	0.427 (0.045)**
Parental risk index	0.014 (0.265)	0.178 (0.238)
Poor parenting index	0.101 (0.544)	-0.108 (0.506)
Physical abuse	-0.248 (1.413)	0.627 (1.298)
Sexual abuse	-2.120 (2.570)	-2.121 (1.763)
Neglect	-1.129 (1.535)	-2.702 (1.416)
Abandonment	-2.930 (1.513)	-2.027 (1.768)
Other abuse	-0.853 (2.014)	-2.489 (1.768)
Prior child welfare services	-0.209 (1.021)	-0.078 (0.923)
N	616	616
R ²	0.25	0.31

Models 1-3 use a pooled sample including waves 3 and 4 and control for wave.

Robust standard errors in parentheses; clustered around caseid

+ $p < .10$; * $p < .05$; ** $p < .01$

Table 18. Final model predicting girls' behavior

	YSR Standard Score	
	Internalizing	Externalizing
Foster care	-1.579 (1.179)	1.636 (1.167)
Kinship care	-3.793 (1.404)**	-1.739 (1.205)
Average length of stay	0.003 (0.003)	-0.001 (0.002)
Parental monitoring	-0.623 (0.123)**	-0.401 (0.104)**
Activities with caregiver	0.195 (0.169)	-0.149 (0.149)
Relationship with caregiver	-3.375 (0.704)**	-4.650 (0.765)**
Child age	-0.452 (0.300)	-0.046 (0.258)
Black	-0.151 (0.909)	-0.396 (0.807)
Hispanic	-0.318 (1.122)	-0.096 (1.036)
Other race/ethnicity	-0.990 (1.308)	-1.922 (1.431)
Special needs	0.086 (0.820)	0.372 (0.770)
Baseline behavior	0.395 (0.038)**	0.334 (0.037)**
Parental risk index	0.213 (0.185)	0.020 (0.172)
Poor parenting index	0.251 (0.398)	0.372 (0.338)
Physical abuse	0.134 (1.345)	-0.395 (1.090)
Sexual abuse	0.035 (0.950)	1.875 (0.998)
Neglect	0.587 (1.172)	0.263 (1.014)
Abandonment	2.593 (2.059)	1.601 (1.566)
Other abuse	-1.009 (1.595)	-1.614 (1.242)
Prior child welfare services	-0.940 (0.854)	-0.367 (0.765)
N	880	880
R ²	0.37	0.35

Models 1-3 use a pooled sample including waves 3 and 4 and control for wave.

Robust standard errors in parentheses; clustered around caseid

+ p<.10; * p<.05; ** p<.01

CHAPTER 5: DISCUSSION

This chapter summarizes the major findings of this study (see Table 19 at the end of this chapter for a one-page summary) and places them in the context of existing research. Implications for theory and research, and applications for child welfare policy/practice are suggested. Limitations of the current study are noted and future directions are recommended.

Summary of Key Findings

This study examined the internalizing and externalizing behaviors of adolescents investigated by Child Protective Services. At this stage in development, youth are establishing their identity and developing the skills and support systems necessary to transition into adulthood. Although some acting out behavior is normative for this age group, consequences of delinquent behavior can follow youth into adulthood and failure to reach educational and developmental milestones in adolescence can make it more difficult to reach adult milestones in the future.

All youth in this sample exhibited high levels of internalizing and externalizing behavior problems. Both males and females reported higher problem behavior than youth in the general population, as evidenced by mean behavior scores above the general population norm of 50. All findings should be interpreted with the understanding that youth investigated by Child Protective Services are universally high-risk for behavior problems, whether or not they are placed out-of-home.

Predictors of Out-of-Home Placement

Child Characteristics

Behavior. Contrary to the initial hypothesis of this study, baseline behavior did not predict placement experiences. This diverges from previous literature using NSCAW data that found behavior problems to predict placement (Barth et al., 2006). The primary reason for this difference is probably because Barth and colleagues were predicting any out-of-home placement, which included the youth in residential or group care that were excluded from this study. Youth are placed in group care, in part, because their behavior problems are so severe that they need 24-hour supervision that cannot be provided in community-based substitute families. Therefore, it should be expected that elevated internalizing and externalizing behavior problems would be strong predictors of placement into group care. Combining community-based and institutional placements would have probably elevated the predictive ability of behavior problems in this study so that results would be more in-line with research predicting any out-of-home placement. However, it was important to restrict the sample in this study because the care environments of kinship and foster families are directly comparable to those of the biological families of children not placed. It also allows for examination of a sample of youth without severe treatment needs at the outset to get a better understanding of the effect of out-of-home placement on behavior.

Special needs. Results about likelihood of placement into different placement types are complicated because “kinship care” consists of a heterogeneous group of providers. Some kinship caregivers are licensed and monitored by child welfare officials, while others are voluntary placements outside of the child welfare system. In this study,

youth with special needs were more likely than those without special needs to enter foster care, but not kinship care. This finding is consistent with other literature that suggests that kinship caregivers are less likely to accept children with special needs (Beeman et al., 2000; Grogan-Kaylor, 2000). These findings support selection effects where youth in foster care have greater developmental and behavioral needs than youth in kinship care. However, whether kinship caregivers in these studies are officially part of the child welfare system is not clear.

Race. Consistent with literature on racial disproportionality in child welfare, Black youth were more likely than White youth to enter both kinship care and foster care (Courtney & Skyles, 2003; Needel et al., 2003). This study found that Black youth also experience greater numbers of placements and longer lengths of stay than White youth. The race effects are independent of child age, gender, special needs, and behavioral problems, as well as parental risk factors, parenting behavior, and maltreatment history that should be better predictors of placement. Clearly Black youth are entering out-of-home placement at disproportionate rates. Once in care, race continues to play a role in placement experience that cannot be explained by the characteristics listed above. To better understand these findings, racial disproportionality should continue to be a topic of study for child welfare researchers.

Maltreatment History

Sexual abuse predicted placement in kinship care, but not foster care. This finding is inconsistent with previous literature, which concluded that sexual abuse did not predict out-of-home placement (Runyan et al., 1981; Zurvain & DePanfilis, 1997). Sexual abuse is probably predictive in this study because foster and kinship placement

are examined separately so unique effects on placement in each type could be found. It is reasonable to expect that sexually abused youth could be removed from their home and into the home of a trusted relative instead of an unknown foster family where the potential for re-abuse is greater.

Abandonment predicted placement in foster care, but not kinship care. Youth who were abandoned by their parents also experienced a greater number of placements than youth whose abuse allegations were unsubstantiated. This effect is a contribution to the literature that has not considered abandonment separately from other types of maltreatment. However, abandonment findings are not clear because there is no operational definition of abandonment in the data collection instruments to understand precisely what it means. Youth could be runaways, homeless, kicked out of their family home, or placed voluntarily by their parents so they could receive mental health treatment. It is difficult to understand what abandonment means for an adolescent population without better operationalization.

Prior receipt of child welfare services is associated with placement in foster care, but not kinship care, greater number of placements, and increased length of stay. These findings are consistent with other studies (Harris & Poertner, 2000; Tittle et al., 2000). Previous child welfare intervention indicates a history of maltreatment or poor family functioning and increases the likelihood of continued need for services.

Risks Assessment

The parental risk index did not predict out-of-home placement experiences. This is divergent from previous literature which found that more parental risk factors increase the likelihood of out-of-home placement (Barth et al., 2006; Phillips et al., 2004; Zurvain

& DePanfilis, 1997). The new variable, “poor parenting,” could account for the variance previously explained by parental risks. Unlike the one other study that used biological parenting as a predictor of placement (Tittle et al., 2000), poor parenting significantly predicts placement in kinship and foster care in this study, as well as greater number of placements and increased length of stay. These findings suggest that caseworkers seem to be placing greater weight on parenting ability than parental risk factors when making placement decisions. The previous study might not have detected this difference because in that study, parenting skills were abstracted from case records and were not available for all cases. This study benefits from a measure of parenting behavior provided by the caseworker making placement decisions.

Differences in Care Environments by Placement Status

Results from this study are similar to results of previous studies examining the different characteristics of placement types (Chapman et al., 2004; Cuddeback, 2004; Ehrle & Geen, 2002; Jones Harden et al., 2004; Terling-Watt 2001). Kinship care has a larger proportion of Black caregivers than foster care. Foster care has a larger proportion of college-educated caregivers than kinship care. The two placements are similar with respect to the number of activities caregivers engage in with the youth in their care, and the quality of child/caregiver relationships is similar in both groups.

A major contribution of this study is to compare substitute kinship and foster families to the biological families of youth who are investigated by child welfare, but not placed. Results suggest that biological parents tend to be younger, and less likely to have a college education than substitute caregivers. Foster caregivers provide more monitoring than biological parents or kinship caregivers. Bivariate analyses suggest that

the quality of the relationship with foster care providers is not as good as the quality of relationship with biological parents, though the effect of foster care only reached the trend level in multivariate analysis, and disappeared altogether once caregiver controls were included. Placements do not differ on number of activities with caregiver. This contribution lends some support to the assumption that, on some dimensions, substitute families provide better care environments than do biological families. However, this is only a first step in assessing that assumption and more research is needed to fully understand these preliminary effects.

An interesting finding that was not hypothesized was that Black caregivers monitor less than White caregivers, regardless of placement status. This race effect was small but significant, and independent of caregiver age or education. It is possible that this finding could be better explained with more information about caregivers that was not available given in the restrictions on NSCAW general release data. For example, gender was not known, so it is not clear how much the caregiver's gender, or a match between the gender of the caregiver and gender of the child, are contributing to observed differences in the care environment. Primary caregivers are likely to be female across placements.

Many of the specific items used to measure the monitoring construct ask about the child going out while the caregiver remains at home, and may not be sensitive to circumstances where the caregiver is also outside the home. For example, if more Black families are away from home for periods of time, working multiple jobs or visiting/caring for other family members outside the home, they may be less likely to score high on this particular measure. A review of literature by Burton and Jarrett (2000) identify a number

of other ways that parents monitor the behavior of their children, including encouraging relationships with positive peers, chaperoning children outside the house, confining youth to the house, instituting curfew, or prohibiting use of certain toys or articles of clothing. Black families may be more involved in monitoring in ways that are not captured in this instrument. Though the addition of race, age and education did not contribute to the predictive ability of parental monitoring in this study, this finding is interesting and should be explored in future research.

Effects of Placement on Behavior

Placement status. Results from this study indicate that kinship and foster care placements do not have an adverse effect on the internalizing and externalizing behaviors of adolescents. In fact, kinship care has a protective effect on internalizing behavior. This is a substantial divergence from most previous literature that has found negative effects of placement on behavior (Dannerbeck, 2005; Jonson-Reid, 2002; Keller et al., 2001; Ryan & Testa, 2005). Despite evidence from previous studies, the proposed selection correction methods were not necessary.

These results converge with a previous research study that compared youth who are placed out-of-home to youth who were investigated by CPS but not placed (Jonson-Reid & Barth, 2000b). Together, these findings provide strong support for selecting an appropriate comparison group. Youth who are investigated by CPS are at high risk of problem behaviors at baseline regardless of placement decision. Selection effects regarding which families come to the attention of child welfare officials have been mistakenly identified as negative effects of placement.

Placement stability. Also contrary to previous literature (Herrenkohl et al., 2003; Leathers, 2002; Newton et al., 2000; Ryan & Testa, 2005), placement instability does not predict increased behavior problems in this study. This could be due to differences in sampling. In previous studies, all youth in the sample experienced some placement while the majority of youth in this sample were not placed. As such, differences in being placed or not accounts for most of the variation in outcomes with little sensitivity left to detect the incremental changes resulting from placement movement.

Effect of the Care Environment on Behavior

Examination of the care environments in substitute placements is limited. One study found that attachment to caregiver protects against behavior problems (Leathers, 2002), but no study has examined the care environment in conjunction with placement and relative to youth who are not placed after investigation. This study contributes three aspects of the care environment to the child welfare literature: relationship with caregiver, parental monitoring, and number of activities with caregiver. Both greater parental monitoring and a positive relationship with caregiver protect against internalizing and externalizing behavior problems. These effects are significant and independent of placement status, pre-placement experiences, and caregiver characteristics.

As initially hypothesized, including measures of the care environment allowed for some protective effects of out-of-home placement. Foster care, but not kinship care, was associated with indirect protective effects on behavior via improved parental monitoring. Foster care placement did not have an overall protective effect on behavior because there is some evidence that the relationship with the caregiver is not as good as the relationship

with biological parents. The gains in parental monitoring could have been offset by the small losses in relationship with caregiver for a neutral, non-significant effect.

These findings are a contribution to previous literature that has not considered the mechanisms through which placement affects outcomes. There is evidence that child welfare intervention by placement in a substitute family may, in fact, have some protective effects. By placing youth in improved care environments, child welfare might be moving in the right direction to fulfill its mission of improving child outcomes. Regardless of placement status, improving the child/caregiver relationships for youth involved with child welfare should be a high priority.

Effect of Pre-Placement Experiences on Behavior

A history of maltreatment prior to baseline is not associated with poor behavioral outcomes 18 and 36 months later, relative to youth whose maltreatment allegation was unsubstantiated. Risk factors and poor parenting in the biological family at baseline were not associated with increased internalizing or externalizing behaviors. For adolescents investigated by Child Protective Services, the immediate and proximal care environment was a much better predictor of behavior than more distal experiences. The protective effects of a good relationship with current caregiver and increased parental monitoring might be able to buffer negative consequences of pre-placement experiences and promote positive behavioral outcomes.

Gender Differences

A noteworthy difference from previous literature is that females exhibited more internalizing and externalizing behavior than males. Research has typically found that

females exhibit greater internalizing behaviors (Keller et al., 2001; Smokowski et al., 2004) while males exhibit greater externalizing behaviors (Keller et al., 2001; Jonson-Reid, 2002; Jonson-Reid & Barth, 2000; Smokowski et al. 2004). It could be that males with extreme externalizing behaviors are more likely than females to be involved in other systems, like criminal justice, and are not in this sample. Meanwhile females could be more likely to be involved with child welfare. Historically, parents have used child welfare to regulate their daughters' social and sexual behavior and delinquency replaced victimization as the primary reason for referral to child welfare (Odem, 1995). Many of the predictors of adolescent girls' delinquent behavior are also predictors of referral to Child Protective Services, including living in a low-income family in an urban, high-crime neighborhood with a history of victimization through physical, sexual or emotional abuse (U.S. Department of Justice, 2003).

Another gender difference that is a contribution to the literature is the protective effects of an improved care environment for girls. Placement in kinship care and increased parental monitoring were only significant for girls. Relationship with caregiver was significantly protective of internalizing behavior for girls and boys, but only protective of externalizing behavior for girls. Perhaps relationships with family members are more important to girls than boys, and therefore characteristics of the care environment have a stronger effect on girls' behavior. Other unobserved variables, like peer relationships or neighborhood characteristics, may be more important to boys' behavior than girls'.

Implications

Implications for Theory

Ecological framework

The ecological framework was useful in identifying proximal influences on adolescent development as well as more distal influences that shape the proximal environment. Within this framework, gender presented as an important predictor of ontogenic development of behavior problems while age, race, and special needs did not. There is evidence that different ecological levels influence one another as race and special needs are predictors of placement in foster care. There is also evidence that types of placements and the quality of interactions in the microsystem directly influence development of behavior problems, particularly for girls.

While this study lends some support to the use of an ecological framework to select certain variables for examination, it is far from a comprehensive ecological examination. Other theoretically important aspects of the microsystem, including relationships of youth with their peers, were not included and should be expected to also influence adolescent behavior. Furthermore, this study does not fully incorporate many of the more distal influences on adolescent behavior at the exosystem or macrosystem levels that shape the proximal microsystem.

Family Stress Model for Child Welfare

The Family Stress Model for Child Welfare was developed during this study to incorporate tenets of Conger and colleagues' family stress theory (1994; 2002) and Cicchetti and colleagues' translational theory (1981; 1995). It posits that families

referred to child protective services are faced with enduring and transient risk factors that increase their stress level and adversely affect parenting. Data constraints on the sequence and timing of parental risk factors, parental stress, and maltreatment make it impossible for this study to explicitly test these relationships. Parental risk and parental stress were measured simultaneously and were therefore combined into one measure of parental risk. Poor parenting was measured at the same point in time, but entered separately to better understand whether it was family risk and stress itself that was influence placement decisions or subsequent behavior, or whether parenting behavior exhibited greater influence. Results indicate that parenting behavior influences placement experiences more than parental risk, and neither parental risk nor parenting behavior at baseline predict behavior 18 and 36 months later. Though questions about what causes poor parenting or maltreatment are beyond the scope of this study, results suggest that parenting behavior and certain types of maltreatment are an important predictor of placement into kinship or foster care.

The second part of the family stress model for child welfare pertains to the effects of out-of-home placement on behavior, both directly and indirectly through the care environment offered in substitute families. Hypothesized effects of out-of-home placement were ambiguous because placement is extremely disruptive, which could lead to negative outcomes. Alternatively, the substitute family was assumed to provide a better care environment than biological family, which could lead to positive outcomes.

Results from this study suggest that substitute families offer a better care environment than do investigated biological families with regard to parental monitoring. Certainly there are other important aspects of the care environment that are not examined

in this study. Family researchers have used *family processes* to describe how families fulfill their role and function in facilitating healthy child development (Burton & Jarrett, 2000). More research is needed that encompasses a wider array of family processes with child welfare populations. This study is a first step, providing preliminary evidence that placement in substitute families does improve some aspects of the care environment.

Results also support the tenet that the proximal care environment is the strongest predictor of adolescent behavior. This finding is consistent with the family stress model for child welfare, even when baseline and pre-placement experiences are taken into account. Adolescents in this sample are resilient with respect to maltreatment experiences, as well as risk and stress in their biological family. Even in a population of youth with substantial risk for poor behavioral outcomes, a close relationship with caregiver and increased levels of parental monitoring can significantly improve adolescent behavior.

Together, results of this study provide strong support for continuing the use of the family stress model for child welfare as a framework for examining the antecedents and consequences of out-of-home placement. Though some of the hypotheses were not supported in directionality, the overall structure of the proposed path model remains appropriate and could continue to guide child welfare research. The risk and protective factors incorporated in this study remain important areas for continued theoretical and empirical investigation.

Implications for Research

Comparison Group

This study found that kinship and foster care placement did not have a negative effect on adolescent internalizing or externalizing behavior. Instead, kinship care had a direct protective effect and foster care had an indirect protective effect via increased parental monitoring. These findings are important because decades of research have dramatically overestimated the negative effects of placement on behavior, with studies consistently finding higher rates of emotional and behavior issues for youth placed out-of-home. Differences in results can be attributed to comparison groups. Previous literature generally compared foster youth to the general population or did not include any comparison group. A more appropriate comparison should be made to youth investigated by Child Protective Services, but not placed, because they are open to child welfare placement in a way that youth in the general population are not. Rates of behavior problems and baseline risk factors are universally high for youth investigated by CPS who are at high-risk of subsequent behavior problems regardless of placement status. This study highlights the importance of including an appropriate comparison group, which should become regular practice in child welfare research.

Care Environment

The current care environment emerged as an important predictor of adolescent behavior in this study. Relationship with caregiver and level of parental monitoring was a stronger predictor of adolescent behavior than placement status or pre-placement maltreatment experiences, controlling for baseline behavior and other child

characteristics. This finding shifts attention from a categorical description of placement status to a much richer description of family processes. Accordingly, measures of parenting behavior and child/caregiver relationship should continue to be examined and included in models predicting child outcomes for youth involved with child welfare. Other measures of the care environment or parenting behavior that could not be included here due to data constraints should be the focus of future research. These measures could include the transient and enduring risk and protective factors identified by Cicchetti and colleagues (1981; 1995), the family characteristic constructs included in Orme and Buehler's (2001) comprehensive review of scientific evidence, and the family- and parent-level processes described in Burton and Jarrett's (2000) review of literature. Continued exploration of family processes within the care environment will better explain how placement affects behavior and where child welfare professionals should target intervention efforts to improve adolescent behavior.

Measuring Placement Instability

This study found that placement instability did not adversely affect adolescent behavior, but is subject to challenges in sampling and measurement. Previous studies included categorical definitions of placement stability that group high- and low-movement youth together and allowed for a threshold of placement moves that had to be reached before behavior was affected. Based on the clinical assumption that every placement change is disruptive, this study proposed a continuous variable that could not be used because of multicollinearity with all other placement variables. Inclusion of a comparison group meant that all cases who were "not placed" had a "0" value for number of placements, making the cumulative number of placements variable highly collinear

with the placement status variable. Whether youth are placed or not accounted for most of the variation in outcomes, leaving little sensitivity left to detect incremental changes in behavior due to changes in placement stability.

Though the average length of stay variable used in its place was less correlated with placement status, it does not seem to be a good predictor of outcomes when a comparison group is included. A youth who is not placed would have a 0-day average length of stay, while a youth who has had many short placements (indicating an unstable placement experience) could have a small number for average length of stay. A youth in one long placement (indicating a stable placement experience) would have a larger number for average length of stay. This makes interpretation tricky because change in expected outcomes is not linear—youth with a 0-day length of stay would be expected to have better outcomes than youth with a longer length of stay, followed by youth with a shorter length of stay.

To best examine the effect of placement on behavior, youth who are placed should be compared to youth who are investigated, but not placed. To best examine the effect of placement stability on behavior, youth who experience many placements should be compared to youth who have experienced only one placement. Combining the two questions poses challenges in measurement and analytical design. If this study were restricted only to youth who were placed out-of-home it is likely that placement instability would adversely affect adolescent behavior, as it has in other studies.

Applications for Child Welfare Policy and Programs

Family Programming to Improve the Care Environment

Results of this study suggest that the current care environment is a better predictor of adolescent behavior than out-of-home placement or pre-placement experiences. This is good news for child welfare practitioners! The care environment is malleable through family programming. Developing and implementing programs designed to increase parental monitoring and improve child/caregiver relationships is an important step toward improving the care environment in biological and substitute families. In particular, parent education courses could incorporate tips and techniques for increasing parental monitoring as part of training for foster or kinship parents or for families investigated by child welfare. Clinical family therapy could be offered at the close of the investigation of families not placed or early in the placement experiences for youth in kinship or foster care. Therapy could focus on enhancing understanding and communication and reducing conflict between youth and their caregivers to improve their relationship.

Favoring Kinship Placements over Foster Placements

In these analyses, kinship care is a successful alternative to placement in foster care or remaining in the biological family. It has a direct protective effect on adolescent behavior, particularly for girls. As such, child welfare workers making placement decisions should continue to favor kinship families over foster families when possible and appropriate. Kinship placements are a heterogeneous group of providers who may or may not be licensed, and may or may not be affiliated with the child welfare system. Support services and other benefits extended to foster care providers should be extended

to kinship care providers and recognize the latter as an important influence in promoting child well-being.

Screening Substitute Caregivers and Assessing Biological Parents

Results also suggest that a positive relationship with caregiver and improved parenting quality are the best predictors of adolescent behavior. This is important information for risk assessments of biological parents and screening substitute caregivers. When assessing risk in biological families, caseworkers could incorporate strengths-based measures that incorporate positive aspects of parenting that are associated with improved outcomes for youth. When screening prospective foster or kinship caregivers, individuals or couples should be evaluated based on their parenting ability or ability to form a positive relationship with youth instead of the demographic considerations that currently drive foster parent selection. Further research is needed, but it may be the case that positive relationship and parenting quality are more important than marital status, sexual orientation, education, income, or other characteristics that are currently used to screen foster parent applicants.

Limitations

Design and Internal Validity

Though this study makes substantial contributions to child welfare literature, it cannot claim to determine the causal effect of foster care. It is impossible to completely isolate the effects of placement on behavioral outcomes without randomly selecting youth from the general population and randomly assigning them to out-of-home placement conditions. Since such a design is not feasible and unethical, researchers are left to

examine effects of out-of-home placement in quasi-experimental designs that face substantial selection issues.

This study attempts to correct for selection issues by controlling for baseline characteristics and experiences. Child age, race, gender, maltreatment history, biological family risk and parenting, and prior receipt of child welfare services were all taken into account. Baseline behavior was also controlled to increase confidence in results.

This study also compares youth placed in kinship or foster care to the best available comparison group of families that were referred to Child Protective Services for investigation, but not placed. Youth referred to CPS have experienced significant risks and are open to child welfare in a way that other youth in the general population are not. Including a comparison group exposed to similar risks helps to correct for the influence of pre-placement experiences. These design elements improve internal validity but cannot support causal inferences.

External Validity and Generalizability

NSCAW data are only nationally representative when the full sample is retained and sampling weights are used. The sample analyzed in this study is not nationally representative because: only adolescents age 11 and up at baseline were studied, youth who experienced group care were excluded, cases with missing data on critical variables were deleted, and samples from waves three and four were pooled. This subset of the original NSCAW sample was used to compare coefficients across models. The purpose of restricting the sample was to attribute changes in the coefficients to changes in the strength or significance of the predictors when other variables are considered, instead of

changes in the samples used to construct each model based on missing data. Restricting the sample sacrificed some external validity in exchange for increased internal validity.

Population weights were not used. However, variables used to select the sample, such as race/ethnicity and other factors were controlled in the analysis. This generally produced similar results to weighted analyses. Robust standard errors were calculated that take into account the presence of the same youth more than once in the pooled data. The unweighted sample used in this study is still drawn from 97 county sampling units, providing considerable geographic variation. The study does not have as strong external validity and generalizability as if sampling weights were used, but could still be considered representative of adolescents investigated by Child Protective Services.

Measurement

Out-of-Home Placement

Measuring the placement experiences of youth involved with child welfare is a challenge because they are a highly transitory population. In NSCAW, some youth may have experienced placements prior to wave one that are not documented, though known experiences receiving child welfare services were statistically controlled. Furthermore, youth may have experienced placements between waves that are not captured in wave data. This study uses a combination of cumulative placement experiences and placement experiences at wave to provide the best possible measures of out-of-home placement given these data constraints.

Care Environment

Measures of the care environment could be improved with an objective standardized assessment in place of the self-reports of youth. Though the question of how youths' perceptions of their care environment affect their behavior is interesting, this first attempt is far from a comprehensive examination of the care environment or array of familial influences on adolescent behavior. The use of youth reports for both the mediating and dependent variables is not ideal, but represents a first step toward examining issues of the care environment in out-of-home placement.

Measures of risk and parenting in biological families could also be improved. In NSCAW, caseworkers respond yes or no to a series of questions about the biological family without explicit criteria for when a "yes" response is warranted. These questions are only asked of biological families in wave one, but are not repeated for subsequent waves or different placement types—rendering comparison of family risk and stress impossible between placements. Ideally, objective and standardized measures of parenting behavior could be collected for all types of placements at all waves to examine their impact on adolescent behavior.

Future Directions

This study has made substantial advances on existing child welfare literature. Specific next steps and future papers from this project include finding and using appropriate weights on the data to increase generalizability. A subset of youth who were placed in kinship or foster care will be examined separately to understand the effects of placement stability on behavior. A more careful examination of family processes can further explore parental monitoring and relationship with caregiver within biological,

kinship and foster families. Finally, changes in the care environment can be tracked over time and across placements to better understand their effect on adolescent behavior.

Hopefully other researchers will continue to move beyond “black box” measures of placement type in favor of a more comprehensive examination of the care environment. Family literature on family processes coupled with the family stress model for child welfare provides a good framework for ongoing research. Research that uses comprehensive, objective, and standardized measures of the care environment in different placement conditions is sorely needed.

It is also important that researchers use an appropriate comparison group of youth who are investigated by child welfare. When comparison groups are not possible, researchers should correct for selection effects. Researchers should use caution when drawing conclusions about the effects of placement on behavior and place their findings in a context that acknowledges the possible effects of pre-placement circumstances on post-placement outcomes.

More generally, child welfare researchers should continue to conduct applied research activities. A research agenda should be developed that aims to better understand the effects of intervention strategies on child outcomes. Program developers and policy makers can benefit from good quality research as they make decisions that affect the services available to this high-risk population.

Table 19. Summary of results

<i>Hypothesis</i>	<i>Results</i>
1) Are there systematic differences in placement experiences?	
a) Greater risk in the biological family home, maltreatment, and greater behavior problems at baseline will be associated with OOH (out-of-home placement).	a) Partially supported. Poor parenting is associated with placement, but not family risk. Maltreatment type differentially predicts foster and kinship placements. Child special needs predict foster care placement, but not kinship care placement. Child behavior does not predict placement in kinship or foster care.
b) Youth with greater behavior problems will experience a greater number of placements and longer lengths of stay.	b) Not supported, though youth with special needs experience a greater number of placements and longer lengths of stay. Increased internalizing behavior is associated with decreased cumulative length of stay.
2) What is the effect of OOH on behavior?	
a) Compared to remaining at home, OOH will be associated with greater behavior problems. Foster care will be associated with greater behavior problems than kinship care.	a) Not supported. Kinship and foster care placement have no direct effect on internalizing behavior. Foster care has no direct effect on externalizing behavior while kinship care has a protective effect for girls.
b) Controlling for unstable placement history will reduce the relationship between OOH and behavior problems.	b) Not supported. Average length of stay does uniquely contribute to behavior. It does not change the effect of foster care and only strengthens the protective effect of kinship care on externalizing behavior.
3) Does the effect of OOH on behavior remain after correcting for selection type?	
Controlling for preexisting characteristics will reduce the relationship between OOH and behavior problems.	Not supported. Foster care remains non-significant for both internalizing and externalizing behavior. Kinship care does not predict internalizing behavior and continues to protect against externalizing behavior.
4) Do substitute families offer better care environments than biological families not placed?	
Placement in foster care or kinship care will be associated with an improved care environment with regard to monitoring, relationship, and number of activities.	Partially supported. Foster caregivers provide a greater level of parental monitoring. There are no differences in number of activities with caregiver. There is some evidence that relationship with caregiver is better at home versus in foster care.
5) What is the effect of the care environment on behavior?	
Better care environments will be associated with fewer problem behaviors.	Partially supported. Increased parental monitoring and improved relationship with caregiver have protective effects on problem behavior. Number of activities with caregiver does not affect behavior.
6) Is the effect of placement on behavior mediated by the care environment provided in OOH?	
Controlling for care environment will reverse the relationship between OOH and behavior problems to reveal a negative association between placement and behavior problems.	Mediating relationship is not supported. There is a direct protective effect of kinship care on externalizing behavior for girls. There is an indirect protective effect of foster care on behavior for girls, through increased parental monitoring.

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