CHILD DEVELOPMENT AT THE INTERSECTION OF EARLY CARE AND EDUCATION AND CHILD WELFARE

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ABSTRACT

Empirical interest in the developmental outcomes of young foster children has surged in recent years, leading to a large knowledge base describing the risks associated with their experiences of trauma and toxic stress, and the potential of foster care experiences to compound or ameliorate those risks. A parallel literature documents the benefits that can accrue to similarly at-risk populations of young children from early care and education (ECE) programs that are explicitly designed to support developmental well-being and growth, as well as the detrimental impacts that can arise from poor quality programs. Despite growing empirical and policy interest surrounding the developmental consequences of both child welfare and ECE for at-risk children, there is a dearth of research at the critical nexus of these systems. This dissertation addresses this gap by utilizing national, state, survey and administrative data to (1) provide descriptions of the ECE arrangements experienced by young children who become involved with the child welfare system, with a focus on those in foster care; (2) identify predictors of ECE experiences including foster parent and child demographics, and child welfare placement type; and (3) explore the relationship of foster placement stability and developmental outcomes to ECE use, type, number of arrangements, and public funding. Foster child age, ethnicity and disability status, as well as foster parent employment, education, and relationship to child (kin vs. non-kin) predicted both the use and type of ECE experienced by children in foster care. Public funding for ECE was associated with more stable foster placements. Children receiving in-home services displayed different patterns of association between developmental outcomes and ECE experiences than children in kinship foster placements. Children in kinship placements demonstrated benefits from Head Start, but other childcare arrangements appeared to be less advantageous. Children living at home benefitted only from other childcare. These results have implications for developmental science with regard to the potential role of ECE in mitigating or
exacerbating the impacts of toxic stress within this vulnerable population of young children and for policies aimed at promoting developmentally supportive linkages between ECE and child welfare services.
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# TABLE OF CONTENTS

CHAPTER I:
Introduction........................................................................................................................................... 1
Developmental Supports in Foster Care: The Potential of ECE to Address the Impacts of Toxic Stress… 3
The Policy Landscape................................................................................................................................ 6
Developing a Framework for Research on the Role of ECE in Foster Care........................................... 10
Dissertation Objectives.......................................................................................................................... 21

CHAPTER II: Early Care and Education Experiences for Young Children in Child Welfare: Evidence of
Developmental Effects............................................................................................................................ 25
Methods................................................................................................................................................... 28
Results..................................................................................................................................................... 33
Discussion................................................................................................................................................ 45

CHAPTER III: Child Development at the Crossroads of Child Welfare and Childcare: Foster Care,
Childcare Assistance, and Placement Stability........................................................................................... 50
Method.................................................................................................................................................... 54
Results..................................................................................................................................................... 58
Discussion................................................................................................................................................ 64

CHAPTER IV: Childcare selection in the context of foster care: A survey of Maryland foster parents....68
Method.................................................................................................................................................... 72
Results..................................................................................................................................................... 75
Discussion................................................................................................................................................ 79

CHAPTER V: General Discussion and Implications for Research, Policy, and Practice......................... 82
Key Findings............................................................................................................................................ 82
Predictors of ECE Experiences for Foster Children.............................................................................. 86
Limitations............................................................................................................................................... 89
LIST OF FIGURES

Figure 1: Developmental Framework for Exploring the Role of ECE in FosterCare ......................... 22
Figure 2: Predicted Standardized BDI Scores by ECE Status for Children Receiving In-home Services ... 36
Figure 3: Predicted Standardized BDI Scores by ECE Status for Children in Kinship Foster Placements................................................................................................................................................... 37
Figure 4: Predicted Standardized BDI Scores by ECE Type for Preschoolers Receiving In-home Services.......................................................................................................................................................... 39
Figure 5: Predicted Standardized BDI Scores by ECE Type for Preschoolers in Kinship Foster Placements.................................................................................................................................................................. 39
Figure 6: Predicted Auditory Comprehension Scores by ECE Type for Preschoolers Receiving In-home Services.......................................................................................................................................................... 40
Figure 7: Predicted Expressive Communication Scores by ECE Type for Preschoolers Receiving In-home Services.......................................................................................................................................................... 41
Figure 8: Predicted Expressive Communication Scores by ECE Type for Preschoolers in Kinship Foster Placements.......................................................................................................................................................... 43
Figure 9: Hazard Estimates of Placement Disruption Over Time, by CCA Status ................................ 62
Figure 10: Hazard Estimates of Preschooler Placement Disruption Over Time, by CCA Status ........ 64
LIST OF TABLES

Table 1: Linking the Needs of Foster Parents and Foster Children to the Functions of ECE

Table 2: Aligning Datasets with Dissertation Objectives

Table 3: Descriptive Statistics by Type of Child Welfare System Placement

Table 4: Predictors of ECE and Head Start Exposure among Children in Child Welfare

Table 5: ECE Experiences and Growth in Battelle Developmental Inventory (BDI) Scores

Table 6: ECE Experiences and Growth in Preschool Language Scale (PLS-3) Scores

Table 7: ECE Experiences and Growth in Child Behavior Checklist (CBCL) Scores

Table 8: Descriptive Comparison of Children who Entered Foster Care as Infants/Toddlers and Preschoolers

Table 9: Logistic Regression: Contribution of Child Demographics and Foster Placement Type to CCA Use

Table 10: Survival Analysis for Placement Disruption

Table 11: Inter-correlation Matrix for Predictors of ECE Use, Type, and Number of Arrangements

Table 12: Predictors of ECE Experiences for Maryland Foster Children
CHAPTER I: Introduction


The early care and education (ECE) and child welfare (CW) systems were each born out of a similar vision, developed in the New Deal and Great Society eras, to establish a federal role in protecting children at risk due to “deprived” and abusive family environments (White & Phillips, 2001; Zigler & Hall, 2000). However, the policies that guide these systems have developed along largely separate tracks, leading to program structures, funding streams, and research agendas with minimal overlap or coordination. This dissertation is built upon the argument that deliberate integration across the ECE and CW systems aimed at providing developmentally supportive experiences for foster children has the potential to reduce costs in the short-term by streamlining service provision (Foster, Stephens, Krivelyova, & Gamfi, 2007; Barbee, & Antle, 2011) and, in the long-term, by capitalizing on the potential of early investment to promote healthy child development. The promise of reducing the $124 billion annual indirect costs of child maltreatment due to special education, mental health services, delinquency, and lost productivity to society (Fang, Brown, Florence, & Mercy, 2012; Heckman & Masterov, 2007) provides a strong incentive to consider the role of ECE in preventing and reducing children’s contact with the child welfare system. Beyond this fiscal incentive, the child welfare system has a moral and legal obligation to promote the developmental well-being of the children it serves. Advancing the potential of ECE experiences to facilitate this goal, and ensuring that they do not undermine it, should be of central concern to scientists, practitioners, and policymakers who focus on either or both of these interrelated systems.

“The best interests of the child” were intended to guide service provision within the child welfare system from its inception (Goldstein, Freud, & Solnit, 1973). However, interpretation of this guiding principle has been somewhat narrowly focused on child safety and permanency planning for abused and neglected children, leaving few resources to provide directly for their developmental well-being. This, in
turn, has led to a concentration on services for biological parents aimed at preventing removal of the child and facilitating reunification, and on payments to foster parents to defray the costs of temporarily caring for a child, rather than on child-directed services aimed at promoting his or her developmental well-being (Dicker, Gordon, & Knitzer, 2001; Stolzfus, 2008; Stepleton, McIntosch, & Corrington, 2010). This imbalance is likely linked to the lack of **substantive** attention to child well-being in child welfare legislation prior to the education and health directives of 2008 (P.L. 110-351), as well as to a more general lack of attention to prevention in federal policies for children (Ripple & Zigler, 2003). Taken together, these neglected issues have undoubtedly contributed to the lack of attention to ECE in child welfare policy. Nonetheless, in order to uphold their full mandate, child welfare agencies must provide developmentally appropriate supports for young children who spend time in foster care (P.L. 105-89, 1997).

The empirical literature on the developmental impacts of ECE, summarized below, provides a firm rationale for explicit attention to ECE-child welfare linkages as a potential strategy for addressing the developmental well-being of foster children. For example, evidence from a number of early intervention programs, as well as from Head Start and state pre-K programs has demonstrated that ECE that is designed to foster developmental growth can not only achieve this aim (Barnett, 1995; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Gormley, Phillips, & Gayer, 2008; Magnuson, Meyers, & Waldfogel, 2007; Phillips & Lowenstein, 2011; Schweinhart, 2004; Schweinhart, Barnes & Weikart, 1993; Zigler & Hall, 2000), but can reduce child maltreatment and its sequelae (Conyers, Reynolds, & Ou, 2003; Reynolds & Robertson, 2003; Reynolds, Temple, & Ou, 2003). The literature on community-based childcare presents a more complex portrait of developmental impacts that vary greatly with the features of the settings being studied (Belsky et al., 2007; NICHD ECCRN, 2005; Vandell et al., 2010). Of particular significance for children in the child welfare system is research that suggests at-risk children who are not enrolled in early intervention programs (e.g. Head Start) not only experience relatively poor quality care (Ryan, Johnson, Rigby & Brooks-Gunn, 2011; Phillips, Voran, Kisker,
Howes, & Whitebrook, 1994; Phillips & Lowenstein, 2011), but bear the effects of this care in detrimental impacts on development (Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b). These strikingly different possibilities regarding the role of ECE in the lives of children highlight the critical importance of examining the ECE experiences of children who experience maltreatment and enter foster care, and the developmental consequences that accompany these experiences. Nonetheless, there is a dearth of research at this important service intersection. Practitioners and policymakers are thus forced to make decisions about the best mix of services, including ECE, for foster children in the absence of an empirical knowledge base—a situation that limits their ability to successfully integrate the child protective function of child welfare and the espoused developmental aims of ECE programs.

This dissertation is designed to begin to address this gap at the intersection of ECE and child welfare research. This introductory chapter highlights the need for developmentally appropriate supports for children in the child welfare system, with a focus on those in foster care, and the potential of ECE to provide such support. It then discusses policy barriers to ECE and child welfare service integration, including the lack of provisions for foster children as an eligible population in ECE policy. The chapter concludes with a framework for understanding the potential roles, both beneficial and detrimental, of ECE within the context of child welfare, with a focus on children in foster care.

**Developmental Supports in Foster Care: The Potential of ECE to Address the Impacts of Toxic Stress**

Children who enter foster care at an early age do so with a myriad of developmental challenges, including developmental delays, mental and physical health problems, and attachment disorders. Many of these children come from impoverished biological homes, have experienced trauma in the form of abuse and neglect, and are thus at increased risk of developmental delays (Bruce, Fisher, Pears, & Levine, 2009; Dicker, et al, 2001; Vig, Chinitz, & Shulman, 2005). Trauma in early childhood is extremely detrimental to children’s healthy development (Evans, 2003; National Scientific Council on the Developing Child, 2005; Middlebrooks & Audage, 2008), especially when it is experienced in the absence of a stable supportive adult caregiver. Child maltreatment and poverty are both potential sources of toxic stress that
induces strong, frequent, and/or prolonged activation of the body’s stress-response systems in the absence of the buffering protection of stable adult support (Shonkoff, 2010). As such, foster children are highly likely to display the negative sequelae of experiences of toxic stress. One of the ways in which the adverse experiences that lead to toxic stress are thought to “get under the skin” to affect children’s development is by altering the neural circuitry of the developing stress response system. Indeed, neurobiological impacts on levels of diurnal cortisol, cortisol reactivity, electrophysiological measures of response monitoring (e.g. ERPs), and respiratory and vagal regulation have been documented in both children growing up in poverty and those who have experienced abuse and neglect (Blair, et al., 2008; Bruce, et al., 2009; Cicchetti, 2007; Dozier, et al. 2009, Lewis, Dozier, Ackerman, & Sepulveda-Kozakowski, 2007; Evans, 2004; Oosterman, DeSchipper, Fisher, Dozier, & Schuengel, 2010).

The most important buffer of the effects of early detrimental experiences on children’s cognitive, behavioral and neurobiological development is sensitive and stable caregiving, usually studied as part of the maternal-child attachment relationship (Ahnert, Pinquart, & Lamb, 2006; Belsky & Fearon, 2002; Berlin, Cassidy, & Appleyard 2008; Berlin, Zeanah, & Lieberman, 2008; Gunnar & Quevedo, 2007; Thompson, 2008; van IJzendoorn, 1995), but increasingly as a focus of research on ECE (Blair, Berry, & Friedman, in press; Howes & Hamilton, 1992; Phillips, Fox, & Gunnar, 2011). Efforts to provide young children with sensitive, stable early care both at home and in extra-familial contexts are now being framed as supporting the normative development of children’s stress systems through the provision of consistent, contingent, and emotionally supportive care-giving (Blair, et al., in press; Phillips, 2011).

It is a small leap to hypothesize that supportive ECE experiences may be especially beneficial for children in foster care who have experienced the dual risks of poverty and maltreatment. The evidence from early intervention programs, such as Head Start, and from state pre-K programs, reviewed in more depth below, supports this possibility. Adding to this equation is the relatively high prevalence of special needs within the foster care population (Dicker et al., 2001; Goerge, Van Voorhis, Grant, Casey, & Robinson, 1992; Vig, et al., 2005). Evidence from evaluations of both school-based pre-K programs (Phillips & Meloy, 2012) and Head Start (U.S. Department of Health and Human Services, 2010) is
revealing that children with mild to moderate special needs exhibit comparable, if not greater, developmental gains than their typically developing peers when enrolled in high-quality, inclusive ECE settings.

Although the research linking ECE to developmental benefits for at-risk children is extensive, a largely separate line of research on childcare has documented detrimental effects of extensive exposure to such care and to arrangements that do not offer sensitive and stable caregiving (Belsky et al., 2007; Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b; NICHD ECCRN, 2005; Vandell et al., 2010). Specifically, findings from the NICHD Study of Early Child Care have linked the cumulative time spent in childcare to negative impacts on the social-emotional development of children, and the extensive variation in the quality of the caregiving experienced by children to a range of social and cognitive outcomes (Belsky et al., 2007; NICHD ECCRN, 2005; Vandell et al., 2010). More recent research has linked non-parental and subsidized childcare experiences among low-income children, specifically, to lower scores on measures of cognitive ability, literacy, and numeracy, as well as increased behavior problems (Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b).

Despite the connecting strands provided by theory and research on the developmental impacts of toxic stress arising from poverty, maltreatment, and special educational needs, and on the potential of ECE experiences to either benefit or detract from the well-being of children who have been affected by toxic stress, there is a dearth of research at the intersection of child welfare and ECE. Investigators who study ECE have neglected to include or examine samples of foster children in their research designs. By the same token, those who study foster families and children have focused on the children’s biological and foster home environments to the neglect of ECE settings (Buehler, Rhodes, Orme, & Cuddeback 2006; Chipungu & Bent-Goodley 2004; Dozier, Albus, Fisher, & Sepulveda, 2002).

It is likely that the underrepresentation of foster children in the ECE literature is driven, in part, by an assumption that foster parents who are receiving payments from the state to care for young children should be staying at home with them, thus obviating the need for ECE (Simms, Dubowitz, & Szilagyi, 2000). In stark contrast to this assumption, analysis of Wave 1 data from the National Survey of Child
and Adolescent Well-being (NSCAW) revealed that, in 1999, 41% of all primary foster parents were working full-time and only 27% were not working at all (NSCAW, 2003). These data also revealed that 78% of all foster parents reported the need for daycare services (NSCAW, 2003). As such, it is reasonable to expect that a sizeable share of young children in foster care, like most children in the U.S., is spending time in care arrangements with adults other than their foster parents. Yet the landscape of child welfare and ECE policies, characterized as it is by a complicated web of funding streams and eligibility criteria, militates against efforts to gain an understanding of their possible intersections.

**The Policy Landscape**

The role of ECE within the context of foster care is necessarily affected by both ECE and child welfare policies. These policies affect funding and eligibility for, and thus access to, ECE arrangements for at-risk children, including those in foster care. It is, however, surprisingly difficult to specify the potential or actual overlap among ECE and foster care funding streams, eligibility provisions, and service use.

The main federal funding stream that supports social services, including ECE services (primarily respite care), for the child welfare population is Title IV-B of the Social Security Act. Title IV-B funds are not accompanied by any specific eligibility criteria (all children who are involved in any way with the child welfare system are eligible to receive Title IV-B-funded services) and are used to provide a wide range of social services for both children and adults. These services include, for example, substance abuse treatment, housing and transportation assistance, transition services for youth aging out of the foster care system, and parenting education (Allen & Bissell, 2004). ECE thus competes with a vast array of other important services needed by individuals whose lives are touched by the child welfare system and that are not directly focused on young children’s developmental well-being. Title IV-E funds, in contrast, provide foster care and adoption assistance payments for the care of children whose biological families live in poverty as defined by eligibility for Temporary Assistance for Needy Families (TANF) as of 1996. Title IV-E agencies may claim reimbursement for allowable licensed childcare costs for children in foster
care, but, again, this is not the primary purpose of Title IV-E funds. At present, there are no data available to assess the percentage of either Title IV-B or IV-E funds that support ECE services.

ECE services are funded by a complex array of programs, subsidies, and tax benefits (Phillips & Lowenstein, 2011). They encompass programs that are identified as providing early education, school readiness, and intervention services for children living in poverty, such as Early Head Start, Head Start, and the growing number of state pre-K programs for 4-year-olds; those that provide similar services to children with special needs through the Individuals with Disabilities Education Act (IDEA). They also include childcare programs that are linked primarily to supporting maternal employment within the welfare system through the Child Care and Development Fund (CCDF) and thus focus on ensuring an adequate supply of arrangements with a lower priority placed on ensuring that these arrangements support the developmental well-being of enrolled children than is true of the other sources of funding.

Of these funding streams, both CCDF and Head Start programs identify children who are in need of protective services (including foster children) as eligible at the discretion of States and Territories, and localities, respectively. Thirty-seven States and Territories currently provide CCDF subsidy access to foster children (Giannarelli, 2011), but no data exist to indicate how many children benefit from this eligibility, let alone to describe the type or quality of ECE they experience. As noted above, there is actually cause for concern about the role of CCDF subsidies insofar as they have been linked to both use of ECE arrangements that are of poorer quality in comparison to Head Start and state pre-K programs that serve similarly low-income children and to poor developmental outcomes among at-risk children (Herbst & Tekin, 2010a, 2010b; Johnson et al., 2011). For other ECE programs, such as targeted school-based pre-K programs, young foster children become eligible by dint of the income status of their biological parent(s) or their own special needs, not as a result of their unique status as foster children. Again, no data exist regarding the share of any of these funding sources that actually supports ECE for foster families.

With the exception of Head Start, ECE policy in the U.S. is also highly decentralized. The federal government’s role is largely restricted to providing funds, thus leaving most decisions regarding the
structure and quality of ECE services, eligibility for these services, and funding priorities (e.g., upgrade quality or serve more families) up to the states, in effect creating fifty ECE systems. Thus, the array of ECE services that are available to be integrated with child welfare services also varies state by state. Compounding this variability in ECE services is the fact that funds for social services more generally are allocated to child welfare services in highly variable proportions from state to state. In FY 2006, for example, 20% of federal social service dollars were used to support child welfare services in seven states, while in nine states that proportion was more than 60% (Center for Law and Social Policy, 2009; DeVooght, Allen, & Green, 2008).

In sum, describing the policy landscape of ECE for children in foster care is an extremely difficult task. The general lack of specific provisions for ECE within child welfare funding streams suggests that policies that have evolved outside of child welfare policy (e.g. Early Head Start, Head Start, State pre-K and poverty/welfare policies) may have the greatest potential to influence the ECE experiences of foster children. With the exception of CCDF subsidies, most of these funding streams are more explicitly focused on children’s developmental well-being than is the case with services funded through child welfare funding streams. Moreover, their targeting on low-income families, as well as children with special needs, is likely to embrace a large share of children in foster care.

Foster Children in ECE Policy

Over the last 15 years, both federal and state policy makers have come to recognize the developmental importance of early childhood experiences, including children’s experiences in ECE, and have made substantial changes to ECE policies and funding (Barnett et al., 2010; Muenchow & Marsland, 2007). Most noteworthy are efforts to increase access to ECE, albeit of widely varying quality, for low-income and otherwise at-risk children. These changes include significant increases in funding for childcare subsidies for low-income populations linked to welfare reform through CCDF, small expansions in Head Start and Early Head Start, and significant growth in state-funded pre-K, which is typically restricted to low-income populations (and to 4-year olds), as well (Barnett, Epstein, Friedman, Sansanelli, & Hustedt, 2010).
In most states, foster parents are eligible to receive CCDF subsidies, but the eligibility criteria differ from state to state and may pose a challenge to navigate for some parents. Thus, it is likely that some foster children are enrolled in CCDF subsidized childcare arrangements, but it is unclear what portion of the foster care population is actually being served by this program. Foster children may be enrolled in Head Start or Early Head Start programs, especially given their explicit allotment for children with special needs, regardless of income. However, because Head Start and Early Head Start are not entitlement programs, there are limited spaces and not every eligible child is guaranteed entry. Foster children with special needs may also receive early intervention (EI) services through funding from IDEA. Under IDEA, infants, toddlers, and preschoolers with developmental delays, and in some states very young children who are at-risk for developmental delays, are eligible for EI services. Interestingly, it appears that many families with young children are linked to these services by their non-IDEA funded ECE providers who think they may be eligible for early intervention, rather than being linked to ECE as part of an IDEA-related service plan (Wall, et al., 2005). Again, no data are available on the number of foster children who receive IDEA-funded ECE.

There appear to be ample opportunities for ensuring that foster children gain access to publicly-supported ECE programs. Indeed, it is likely that a sizeable share of foster children is currently enrolled in these programs as a result of the poverty status of their biological families and/or their own special needs status. Descriptive data from the National Survey of Child and Adolescent Well-Being support this contention. Nearly two-thirds of children under the age of five and between 55% of preschool-aged children involved in the child welfare system are enrolled in some type of childcare program (Ward, et al., 2009), but only an estimated 17.4% of the subgroup of children aged 3-5 in foster care were reported to be enrolled in Head Start -- a surprisingly low proportion given the prevalence of poverty and special needs in this population (Ward, et al., 2009). Yet, research describing the ECE experiences of children involved with the child welfare system is virtually non-existent, and there is no evidence regarding the developmental impacts of these experiences for either the population of children in the child welfare system or for the subgroup of these children in foster care. This may be due, in part, to the lack of a clear
framework for conceptualizing the roles that ECE can play within the context of foster care and, as a result, for guiding research at this crucial intersection of services. The following section offers an outline for an initial framework to guide an integrated program of research at this intersection, specifically for children in foster care. This framework guided the studies that compose this dissertation.

**Developing a Framework for Research on the Role of ECE in Foster Care**

Despite the lack of policy and research overlap, similar theoretical frameworks have guided practice in both the child welfare system and significant portions of the ECE system since their inception (White & Phillips, 2001; Zigler & Hall, 2000). The similarities between these systems extend to shared goals insofar as they target vulnerable children to reduce risk factors and promote protective factors within their care-giving environments including, but extending beyond, the biological family. The child welfare system is mandated to ensure the “safety, permanency, and well-being” of the children in its care (P.L. 105-89, 1997). Sectors of the ECE system that emphasize support for child development embrace a similar goal to “enhance the development of [young children] and promote healthy family functioning” as articulated, for example, in the mission statement of Early Head Start (Early Head Start National Resource Center, 2011). In this vein, state pre-K programs are explicitly designed to support young children’s school readiness.

The primary consideration of child welfare has always been the immediate safety of the child and establishing a permanent home. In recent years, however, there has been growing attention within the child welfare community to the additional goal of supporting children’s developmental well-being as measured by their long-term social-emotional and cognitive development (Stepleton, McIntosh, & Corrington, 2010; US-DHHS, 2011). Pertinent research evidence has revealed negative developmental effects of the foster care experience on outcomes of young children (Cicchetti, 2007; Hansen, Mawjee, Barton, Metcalf, & Joy, 2004; Leslie, Gordon, Ganger, & Gist, 2002; Vig, et al., 2005). It is, however, difficult to determine causality given the absence of a true comparison group or counterfactual. As a result, some scholars have argued that foster care succeeds in serving a protective function for these children and improves their long-term wellbeing even though those outcomes may still appear poor
(Wulczyn, Barth, Yuang, Jones-Harden, & Landsverk, 2005). Nonetheless, children who become involved with the child welfare system, perhaps especially those who enter foster care, represent an extremely vulnerable population whose long term outcomes are generally poor (Cicchetti, 2007; Hansen, et al., 2004; Leslie, et al., 2002; Vig, et al., 2005).

In the case of ECE, there has been a long-standing split between programs that focus primarily on supporting parental work with minimal attention to their developmental impacts on young children and programs that are explicitly designed to provide ECE that benefits child development (Phillips & Lowenstein, 2011). Head Start and Early Head Start, as well as landmark intervention studies, are the primary exemplars of developmental ECE. Rather than being viewed primarily as a work support, or a child “container” intended merely to protect the child from harm while enabling the parents to work (Brauner, Gordic, & Zigler, 2004), these early childhood programs are seen as opportunities for improving child outcomes, particularly with regard to the school readiness of low-income and at-risk children. Recent research on state pre-K programs also falls within this tradition. Evaluations of these programs have confirmed their potential to protect children from the negative consequences associated with high-risk home environments (Barnett, 1995; Gormley, Phillips, & Gayer, 2008; Magnuson, Meyers, & Waldfogel, 2007; Phillips & Lowenstein, 2011; Schweinhart, 2004; Zigler & Hall, 2000). As an extremely high-risk group, foster children are among those whose development could likely benefit from these experiences (Pinderhughes, Harden, & Guyer, 2007. In contrast, childcare subsidy programs, such as CCDF, emphasize parental work support. Only 4% of all CCDF funding is allotted to quality improvement efforts. It thus comes as little surprise that children whose parents use CCDF subsidies experience poorer quality care than their low-income counterparts in Head Start and state pre-K programs (but higher quality care than their peers who are not in Head Start or pre-K), and that these experiences are not associated with improved developmental well-being (Herbst & Tekin, 2010a, 2010b; Johnson et al., 2011).

Understanding the influence of ECE in the context of foster care is essential to bridging the gap in research and informing service integration at the intersection of ECE and child welfare. This dissertation
represents an initial foray into the potential role of ECE in the lives of children who become involved in the child welfare system, with a focus on those in foster care. The literature suggests that ECE has the potential to affect foster children’s development both directly and indirectly through its impacts on foster parents. It also suggests that these impacts may be beneficial or detrimental. The following discussion addresses prior evidence of both risks and benefits deriving from exposure to ECE settings. Given the protective goals of the child welfare system, Table 1 focuses on the potential benefits that could accrue to the young children in this system.

Table 1: *Linking the Needs of Foster Parents and Foster Children to the Functions of ECE*

<table>
<thead>
<tr>
<th>Needs of Foster Children</th>
<th>Functions of High Quality, Publicly-Funded ECE</th>
<th>Potential Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs related to impoverished family backgrounds</td>
<td>Cognitive stimulation and early education</td>
<td>Increased School Readiness</td>
</tr>
<tr>
<td>Needs deriving from developmental delay and special needs</td>
<td>Early detection of developmental delay</td>
<td>Decreased school failure</td>
</tr>
<tr>
<td>Needs deriving from attachment difficulties</td>
<td>Provision of early intervention services</td>
<td>Fewer unmet special educational needs</td>
</tr>
<tr>
<td></td>
<td>Stable, consistent relationship with provider</td>
<td>Improved social emotional functioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Needs of Foster Parents</th>
<th>Functions of High Quality, Publicly-Funded ECE</th>
<th>Potential Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Support</td>
<td>Care for children during work hours</td>
<td>Increased employment and foster family income</td>
</tr>
<tr>
<td>Respite</td>
<td>Break from rigors of fostering</td>
<td>Increased foster parent retention</td>
</tr>
<tr>
<td>Support for Foster Parenting</td>
<td>Support and access to information</td>
<td>Improved foster care placement stability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved foster pare-child relationship quality</td>
</tr>
</tbody>
</table>

**ECE in the Lives of Foster Children**

Conceptualizing the risks associated with involvement in the child welfare system and placement in foster care requires acknowledging the many needs that children in foster care share with other groups
of at-risk children, as well as the needs that are likely exacerbated by or unique to their special status as foster children (Pinderhughes, et al., 2007). Of primary importance with regard to shared risks is the prevalence of impoverished backgrounds among children who enter foster care (Pinderhughes, et al., 2007; Wulczyn, Kogan, & Harden, 2002). Poverty heightens the risk of developing physical and mental health problems, and experiencing delayed cognitive development and poor academic achievement (Hernandez, Montana, & Clarke, 2010; Rouse & Fantuzzo, 2009). It is often associated with other adverse experiences such as parental mental illness, substance abuse and child maltreatment, all of which have been highlighted by the literature on toxic stress (National Scientific Council on the Developing Child, 2005) and can lead to child welfare involvement (Harden, Monahan, & Yoches, in press; Gassman-Pines & Yoshikawa, 2006). For foster children, the disruption of being removed from their biological homes may compound these risk factors and their adverse effects on development (Vig, et al., 2005).

The damaging repercussions of poverty are especially salient for very young children (Brooks-Gunn, & Duncan, 1997). They are also more likely when poverty is experienced in the context of other risk factors such as single parenthood and poor maternal education (Huston & Bentley, 2010). As such, it is highly pertinent that foster children who are placed with kin are more likely to be in the care of single, elderly, low-income, and low-educated foster parents, and that this is the fastest growing type of placement for foster children in the U.S. (Ehrle & Geen, 2002; Geen, 2004; Scannapieco, Hegar, & McAlpine, 1997).

Absent research on the ECE experiences of foster children, the following section examines the literature on ECE programs for low-income children, including those with special educational needs, insofar as these populations share important characteristics with foster children. For each of these areas of research, I discuss hypothesized links to the specific needs of foster children. I then discuss the potential impacts of ECE, both positive and negative, on these children’s development.

**Needs deriving from demographic risk.** Research suggests that the majority of children who enter foster care come from biological families who live below the poverty line (Pinderhughes, et al., 2007; Wulczyn, Hislop, & Harden, 2002), and that these children are disproportionately likely to be
children from racial and ethnic minorities (Chipungu & Bent-Goodley, 2004). Poverty has pervasive negative impacts on child development, and the risks of poverty are especially salient for very young children (Brooks-Gunn, & Duncan, 1997). In addition, researchers have noted that maltreated children have substantially lower grades and test scores, as well as more absences and grade repetitions than the general population (Eckenrode, Rowe, Laird, & Brathwaite, 1995, Leiter, & Johnsen, 1994). Other researchers have demonstrated that a history of involvement with the child welfare system, even in early childhood, is associated with increased risk for suspensions and dropout in adolescence (Trout, Hagaman, Casey, Reid, & Epstein, 2008).

The developmental literature has documented benefits of ECE for this population, most clearly within the early intervention and state pre-K literatures. Experimental studies of early intervention programs for children growing up in poverty provide short- and long-term evidence for the link between high quality early education and improved child outcomes (Campbell, et al., 2002; Schweinhart, et al., 1993; Vandell, Belsky, Burchinal, Stenberg, & Vandergrift, 2010). Recent evaluations of state pre-K programs (Gormley et al., 2008; Gormley, Phillips, Newmark, Adelstein, & Perper, 2011; Loeb, et al., 2004) and experimental research on Early Head Start and Head Start have also demonstrated the immediate benefits of these programs for children from impoverished backgrounds (U.S. Department of Health and Human Services, 2005, 2006).

At the same time, research on childcare has yielded a much more mixed portrait of developmental impacts linked to wide variation in the quality of caregiving received by children and to the extent of their exposure to such care (Belsky et al., 2007; Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b; NICHD ECCRN, 2005; Vandell et al., 2010). Low-income children generally experience poorer quality childcare programs than their more advantaged peers, unless they are enrolled in publicly funded programs such as Head Start and state pre-K programs (Pianta et al., 2005; Loeb et al., 2004). Additionally, economically disadvantaged children and ethnic minorities are enrolled in center and school based pre-K programs less often than more advantaged children (Gormley, et al., 2008; Loeb, et al., 2004;
Magnuson, Meyers, Ruhm, & Waldfogel, 2003). This is especially problematic in light of replicated evidence that exposure to high quality center-based programs, including state pre-K programs, predict positive child outcomes – especially with respect to early learning -- over and above characteristics of the family (Belsky, et al. 2007; Gormley, et al., 2008; Lowenstein, 2009; McCartney, et al., 2007). Moreover, recent evidence suggests that the negative social developmental impacts associated with extensive time in childcare prior to Kindergarten entry (Belsky, et al., 2007) do not necessarily extend to low-income children (Phillips & Lowenstein, 2011).

This body of research suggests that enrollment in particular types of ECE programs may play a protective role in the lives of young foster children. Young children in foster care typically come from low-income families, are disproportionately minority, and have poor school outcomes. Thus, it is reasonable to generalize from the literature on low-income children to foster children and to maintain an optimistic stance about the potential benefits of ECE programs, notably Head Start, state pre-K, and high-quality center-based programs, for these children. Yet, whether foster children actually experience the types of care whose protective influence has been documented remains unknown.

**Needs deriving from developmental delays and special needs status.** Developmental delays occur for children who enter the child welfare system before six years of age at 4 to 5 times the rate of the general population (Dicker et al., 2001; Goerge et al., 1992; Vig et al., 2005). It follows that foster children are also at higher risk for being identified as having special educational needs associated with developmental delays (Emerson & Lovitt, 2003). Previous research indicates that participation in high quality ECE programs may be associated with lower rates of special education placement in later years (Conyers et al., 2003; Gietzen & Vermeersch, 1980; Redden, Forness, Ramey, Ramey & Brezausek, 2003; Wall et al., 2005). Similarly, evidence from studies of Early Head Start indicate positive impacts on rates of participation in other early intervention services for children with special needs (Wall et al., 2005). Thus, the occurrence of special education referrals may be reduced and access to appropriate services may be increased when children with special needs, including foster children, experience high quality ECE.
There is very little research addressing patterns of ECE use by parents of young children with special needs and the available evidence is inconsistent. This may be due, in part, to the different criteria used to identify and categorize children with special needs across studies (e.g. IEP documentation, parent or teacher report). Nonetheless, some studies indicate that children with special needs, especially infants, are more likely to be cared for by relatives than in center-based ECE programs (Booth & Kelly, 1998, Booth-LaForce & Kelly, 2004; Warfield & Hauser-Cram, 1996), but others have reported that these children are actually over-represented in center-based settings when family income and structure are considered (Parish, Cloud, Huh, & Henning, 2005; Parish & Cloud, 2006). The effects of ECE experiences on the cognitive and social-emotional development of children with special needs have also been considered in only a few studies. Available research supports the notion that these children may also benefit from high quality ECE, especially intervention programs (Conyers et al., 2003; Gietzen & Vermeersch, 1980; Redden, et al., 2003; Wall et al., 2005). For example, children with special needs showed significant gains in pre-reading scores as a result of participation in the Tulsa pre-K program (Phillips & Meloy, 2012), and children with special needs were the only subgroup of children that demonstrated significant sustained gains through first grade in the Head Start Impact Study (U.S. Department of Health and Human Services, 2010). This limited research on the effects of ECE on children with special needs indicates that they may be exposed to ECE at lower rates than other children but that when they are exposed to developmentally supportive programs, they experience benefits similar in extent to those of typically developing children. It is reasonable to extrapolate from this literature that ECE does indeed have the potential to play a similar compensatory role for children in the foster care system.

**Needs deriving from attachment difficulties.** Children who are removed from their biological homes, especially those who have experienced the toxic stress that accompanies poverty and child maltreatment, are at unique risk for developing attachment disorders (Fish & Chapman, 2004; Morton & Browne, 1998). It is difficult to disentangle whether these disorders are the result of inconsistent
parenting in the biological home or of the disruption in early care giving environments caused by removal from those homes. Multiple foster care placements may further compound attachment disorders within the foster care population (Lewis et al., 2007; Webster, Barth, & Needell, 2000, Wulczyn, et al., 2003). The combined impact of these influences puts young foster children at-risk for adverse outcomes that persist throughout childhood, including poor peer relationships, behavior problems, and mental health issues (Carlson, 1998).

Traditionally, child welfare researchers have focused on the stability of the foster home placement itself. Foster home stability has been defined as limited movement from home to home, and is generally regarded as an important goal for child welfare agencies due to its effect on the developing child. In particular, placement stability has been linked to variation in inhibitory control and oppositional behavior on behalf of foster children (Lewis, et al., 2007) and, to the extent that placement instability represents low foster mother investment in a given child, to attachment security (Ackerman & Dozier, 2005). Research has shown that young foster children can form secure attachments to new caregivers, such as foster parents, regardless of the quality of the attachment relationship they had developed with their biological mothers (Ackerman & Dozier, 2005; Dozier, Stovall, Albus, & Bates, 2001). Thus, the opportunity to compensate for insecure attachment patterns in young foster children may exist.

Stability in ECE settings and caregivers may be a particularly important factor for children in foster care, insofar as it promotes the formation of secure attachments with these alternative caregivers. Research indicates young children are more likely to maintain stable, secure attachments to their childcare providers if that provider does not change (Howes & Hamilton, 1992; Ahnert, et al., 2006). If foster children experience stable ECE placements, they may be able to maintain a secure attachment bond with their ECE provider(s) and thus be less vulnerable to the negative outcomes associated with attachment disorders later in life. Indeed, evidence supports the notion that a secure attachment to childcare providers is beneficial even when children already have a secure attachment with their primary caregiver (Howes & Hamilton, 1992).
On the other hand, instability in ECE may be especially detrimental to young foster children. Research has shown that frequent changes in ECE arrangements are linked with negative social, emotional, and cognitive outcomes (e.g. Bacharach & Baumeister, 2003; Hayes, Palmer, & Zaslow, 1990; Howes & Hamilton, 1993; Huston et al. 2002; Loeb et al. 2004; Whitebrook, Howes, & Phillips, 1990). Some have suggested that ECE stability may moderate the relationship between access to (and the quality of) ECE and children’s developmental outcomes (Adams & Rohacek, 2010). Given the history of instability in familial contexts for most foster children, ECE experiences, if they too are unstable, may exacerbate the negative sequelae associated with foster care.

Despite the voluminous literature documenting the consequences of exposure to ECE arrangements that vary in their focus on and capacity to support early developmental growth for children who have similar needs (deriving from poverty or developmental delays) to children in the child welfare system, it is important to recognize both the multiplicity of risks associated with foster care placement and the strong likelihood that young foster children may be especially affected by the stability of their ECE arrangements and caregivers. Developmentally supportive, stable arrangements, in particular, could serve a therapeutic function for foster children over time, as studies of early interventions for low-income children would indicate. However it is also possible that ECE may be an added disruption in the lives of foster children, and thus exacerbate their developmental difficulties.

**ECE in the Lives of Foster Parents**

Recently, ECE scholars have noted the importance of examining the childcare-family mesosystem, or the joint developmental influences of the home and ECE environments (McCartney, 2006; Watamura, Phillips, Morrissey, McCartney & Bub, 2011). The mesosystem also offers a useful construct for examining the potential benefits of ECE for foster parents and related benefits for the foster children in their care. Table 1 outlines the potential benefits of ECE for foster parents, which include increased employment and income, respite from the rigors of fostering, and opportunities to improve their understanding of and skill in caring for their foster child. It then links these benefits to potential indirect
benefits for foster children, specifically through foster parent retention and placement stability, greater material resources within the foster home, and the quality of the foster parent-child relationship.

Despite the potential benefits of ECE programs in the context of foster care, the needs of many foster parents for ECE services remain unmet. Researchers have documented that 45-78% of foster caregivers, depending on the sample, report the need for daycare services (Cuddeback & Orme, 2002; NSCAW, 2003). However, in their study, Cuddeback & Orme (2002) found that only 27% of caregivers (both kin and non-kin) reported receiving these services or financial support for these services. When coupled with the lack of direct ECE provision for foster families, achieving and maintaining eligibility for ECE support may actually exacerbate stress (Grobe, Weber, & Davis, 2008).

**Employment support.** There is no research that explores the success of the child welfare system in supporting the employment needs of foster parents. Hudson and Levaseur (2002) found that 70% of foster parents surveyed reported the need for more money to successfully maintain their foster homes and care for their foster children. Access to ECE programs is an essential employment support for these foster parents. Such support could, in turn, have positive effects on the development of young children in foster care, provided that it is accompanied by access to stable, high quality ECE. For example, research has shown that traditional foster parents have more economic and social resources than kin caregivers (Harden, 2004), and that differences in resources mediate the effects of placement type on the foster parent-child relationship and child outcomes (Geen, 2004; Ehrle & Geen, 2002). If assistance with accessing ECE provides employment support for foster parents, particularly kin caregivers, it may have indirect effects on the well-being of foster children by improving material resources in the home and the emotional resources of the foster parent. At the same time, if ECE assistance is hard to come by, foster parents may have difficulty maintaining employment as a result of unmet childcare needs. For example, research has linked instability in subsidy eligibility and receipt to instability in parental employment (Blau & Robbins 1991; Hofferth & Collins 2000; Meyers 1997)

**Respite.** Respite care is a parent-centered service that provides temporary care for children (particularly children with special needs) as a means of giving foster parents a break from the rigors of
caring for their foster children. Typically, respite care involves the temporary placement of foster children in another foster home as a way of encouraging long-term placement stability by increasing foster parent satisfaction (Brown & Rodger, 2009). Research has shown that respite care is an especially important factor in the retention of foster parents. In a pre-posttest design, foster parents receiving respite care reported reduced stress, improved quality of life and reduced burden (Owens-Kane, 2007). Access to respite care has also been found to differentiate foster parents who intend to continue fostering and those who intend to quit (Rhodes, Orme, & Buehler, 2001). For the most part, respite care is provided by other foster parents either through informal connections or through formal short-term placements. A survey conducted by the U.S. Department of Health and Human Services (1994) found that 95% of foster care agencies reported that other family foster homes were the primary source of formal respite care. However, these programs appear to be reaching a relatively small proportion of the population in need given that most foster parents report that their respite care needs are unmet (Hudson & Levaseur, 2002). In addition, sporadic respite care may be less beneficial for both foster parents and foster children than the more sustained support provided by formal ECE.

**Support for Foster Parenting.** ECE may also serve as an avenue for formal and informal parenting education and support of foster parents. Parenting education has been studied in relation to foster parent satisfaction, recruitment, and retention (Puddy & Jackson, 2003). Foster parent training programs have been linked to stability of foster care placements and an increased likelihood for children of exiting foster care placement via reunification or adoption (Price, 2008). There are precedents for integrating parenting education programs into ECE programs. Head Start, for example, often requires parental participation in classes, and the Chicago Parent-Child Centers (CPCs) were able to successfully decrease levels of child maltreatment for children who participated in their program (Reynolds & Robertson, 2003) – an outcome that has been ascribed by the developers of the program, in part, to the strong parent involvement component of the CPCs. ECE programs may be able to provide similar services for foster parents. If foster parents who are better educated about the children in their care and
know how to provide for their unique needs are more satisfied with their care giving role, they may be more likely to continue in that role.

ECE that increases foster parent retention and satisfaction may have indirect benefits for foster children. More stable foster parents may help to reduce the incidence of multiple placements for young children. In addition, foster parents who are more satisfied with their role and who have increased self-efficacy may have better relationships with the children in their care (Buehler, Cox, & Cuddeback, 2003; Coakley, Cuddeback, Buehler, & Cox, 2007). On the other hand, if ECE support is difficult to find and/or maintain, foster children may experience indirect detrimental effects via the same mechanisms. Foster parents who experience increased stress and reduced satisfaction may have poorer relationships with the children they care for and provide less stable foster care placements (Buehler et al., 2003, Coakley et al., 2007).

**Dissertation Objectives**

The literature and policies reviewed in this chapter demonstrate that ECE has the potential to help the child welfare system achieve its responsibilities by contributing in multiple ways to the well-being of foster children both directly and through support to their foster parents. However, the same pathways may also produce detrimental impacts if the ECE that foster children experience is not developmentally supportive, stable, or easy to access and maintain. This dissertation is designed to initiate a program of research at the intersection of these two systems by describing the ECE experiences of foster children and exploring the impact of these experiences on both foster care stability and developmental outcomes (See Figure 1).
Specifically, this dissertation utilizes three datasets consisting of data about children under the age of five who are involved in the child welfare system and their caregivers to address four objectives: (1) to describe the ECE experiences of children involved in the child welfare system; (2) to understand the factors contributing to foster parents’ selection of particular ECE arrangements, (3) to explore the relationship between these children’s ECE experiences and their developmental growth; and (4) to explore the relationship between these children’s ECE experiences and their foster placement stability. Table 2 provides an outline of these objectives and the data available in each dataset to address them.

Chapter II describes a study that utilizes a nationally representative, federally funded dataset, the National Study of Child and Adolescent Well-being (NSCAW) to describe the ECE experiences of children who are under the supervision of child protective services in the United States, as well as the subpopulation of children who are removed from their biological homes and placed into foster care (objective 1). This study specifically explores predictors of ECE use, generally, and of Head Start enrollment, specifically (objective 2), and links these experiences to growth in young children’s cognitive, language and behavioral outcomes (objective 3).

Chapter III describes a study that integrates two administrative datasets from Illinois. One contains information on utilization of a Division of Child and Family Services (DCFS) childcare assistance program for foster parents. The other contains detailed demographic information about the
foster children being cared for by these foster parents, and their entry into, exit from, and placement moves within the foster care system. This study explores predictors of childcare assistance receipt among foster parents in Illinois (objective 2), and links this support and the childcare experiences that it funded, to the stability of foster children’s placements over time (objective 4).

Chapter IV describes a study that integrates administrative data in Maryland with an original survey of Maryland foster parents regarding their use of childcare for the foster children in their care. This study describes the ECE experiences of young foster children in Maryland (objective 1) and explores the contribution of foster parent characteristics, preferences, and access to public assistance to both the likelihood of foster children experiencing childcare and the type and amount of care they received (objective 2). This study is small-scale and thus not intended to be representative. Rather the inclusion of more detailed questions regarding the type and amount of care used by foster families, as well as about the childcare selection process, allows for the generation of hypotheses regarding results from chapters II and III, and highlights avenues for future research.

Table 2: Aligning Datasets with Dissertation Objectives

<table>
<thead>
<tr>
<th></th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
<th>Objective 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describe ECE experiences</td>
<td>Predict ECE use and understand foster parent childcare selection process</td>
<td>Link ECE experiences to developmental outcomes</td>
<td>Link ECE to foster placement stability</td>
</tr>
<tr>
<td>NSCAW</td>
<td>Headstart and “other childcare”</td>
<td>Child demographics, child welfare placement type, and caregiver demographics</td>
<td>Cognitive Development</td>
<td>Language Development Behavior Problems</td>
</tr>
<tr>
<td>Illinois</td>
<td>Childcare Assistance Program: informal care, family daycare, center-based care</td>
<td>Child demographics and foster parent type</td>
<td></td>
<td>Likelihood of experiencing a placement disruption</td>
</tr>
<tr>
<td>Maryland</td>
<td>Center-based care and other care, use of multiple arrangements</td>
<td>Child demographics, Foster parent type, demographics, beliefs, and public assistance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The intersection of ECE and child welfare represents a unique opportunity to affect the developmental outcomes of an extremely vulnerable population of young children. Yet, an empirical
knowledge base is essential to any effort to inform ECE policy and promote ECE experiences that have the potential to improve the development of these children. Taken together, these three studies provide valuable insights into the factors that contribute to the ECE experiences of children involved with the child welfare system, and specifically for those in foster care. They provide a blueprint for future research at the intersection of ECE and child welfare that has the potential to make significant contributions to the lives of these young children by informing the policies that govern these systems. The concluding chapter (V) summarizes the evidence across the studies and discusses their implications for both research and policy.
CHAPTER II: Early Care and Education Experiences for Young Children in Child welfare:

Evidence of Developmental Effects.

Understanding the role of early care and education (ECE) in the lives of children who are involved with the child welfare system, specifically within the context of foster care, is essential to informing service integration at the intersection of ECE and child welfare, and better protecting the healthy development of these vulnerable young children. Absent research on the ECE experiences of children involved with the child welfare system, it is necessary to draw from the literature on the impacts of ECE programs for low-income children and children with special needs for hypotheses about how ECE experiences may affect their development. This literature has been reviewed, in depth, in chapter I of this dissertation. The following section highlights the research that is most salient to the study being described in this chapter.

The majority of the children who become involved with the child welfare system come from impoverished biological homes (Pinderhughes, et al., 2007; Wulczyn, et al., 2002). Poverty has pervasive negative impacts on child development, and the risks of poverty are especially salient for very young children (Brooks-Gunn, & Duncan, 1997). Importantly, the evidence linking developmentally supportive ECE programs to children’s development, particularly school readiness outcomes, is also strongest for children growing up in low-income families (Campbell et al., 2002; McCartney, et al., 2007; Reynolds, Rolnick, Englund, & Temple, 2010; Schweinhart, et al., 1993). Recent evaluations of state pre-K programs (Barnett et al., 2005; Gormley, et al., 2008; Gormley, et al., 2011; Loeb, et al., 2004) and experimental research on Head Start (U.S. DHHS, 2005) have demonstrated the immediate benefits of these programs for children from impoverished backgrounds.

At the same time, research on ECE programs has demonstrated extensive variability in the type of care that children experience in the U.S., as well as inequities in access to the most developmentally supportive arrangements. Absent enrollment in intervention programs such as Head Start or state pre-K, low-income children generally experience less sensitive and stable caregiving in the context of their ECE arrangements (Herbst & Tekin, 2010a, 2010b; Johnson et al., 2011) and are less likely to be enrolled in
center-based care than their more advantaged peers (NICHD ECCRN, 1997; Phillips, et al., 1994). Access to public programs and to childcare subsidies increases the odds that low-income children will receive center-based care (Ryan, et al., 2011; Pianta et al., 2005; Loeb et al., 2004). However, subsidized center-based arrangements still typically offer less developmentally supportive care than do Head Start and state pre-K programs for low-income children (Herbst & Tekin, 2010a, 2010b; Johnson et al., 2011). These socio-economic inequities are especially problematic in light of evidence that exposure to high quality center-based programs, including state pre-K programs, predicts positive child outcomes – especially with respect to early learning –over and above characteristics of the family and home environment (Belsky, et al. 2007; Gormley, et al., 2008; Lowenstein, 2009; McCartney, et al., 2007).

Children in foster care, specifically, and their ECE experiences may also be affected by characteristics of the foster care environment. Research has documented that traditional (non-related) foster parents have more economic and social resources than do kin caregivers (Ehrle & Geen, 2002; Harden, 2004), and that differences in these resources moderate the effects of placement type on the foster parent-child relationship and child outcomes (Geen, 2004; Ehrle & Geen, 2002). To the extent that children in more disadvantaged circumstances stand to reap larger benefits from ECE, it is possible that children in kin care will exhibit more positive developmental outcomes from experiencing high-quality ECE and center-based arrangements. However, if foster children, especially those in kinship care placements, receive less developmentally supportive care, as research on low-income families suggests is likely (Herbst & Tekin, 2010a, 2010b, Johnson et al., 2011; NICHD ECCRN, 1997; Phillips, et al., 1994), their ECE experiences may be associated with poorer developmental outcomes (Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b).

Differences in foster home environments are also likely to impact ECE selection by foster parents for the children in their care. The literature exploring selection of ECE and type of ECE for the general population suggests that parent demographic characteristics play an important role. Parental employment, for example, is one of the strongest predictors of enrollment of children under the age of five in ECE (West, Hausken, & Collins, 1993). The lesser resources of kin caregivers may also necessitate
employment which, in turn, would predict heavier reliance on ECE as compared to traditional caregivers (Geen, 2004; Ehrle & Geen, 2002). Researchers have documented that a wide array of factors contribute to the selection of particular types of care, e.g. Head Start. Specifically, parent demographic characteristics such as income and education (Fuller et al., 1996; Huston, Chang, & Gennetian, 2002) have been linked to the type of care that parents select. Highly educated and higher-income mothers are more likely to select center care than their less educated, lower-income counterparts (Fuller, Holloway, & Liang, 1996). However, low-income mothers have much greater access to public ECE programs, such as Head Start, as a result of income-based eligibility criteria.

**Current Study**

The empirical literature on the developmental impacts of ECE, reviewed here and in Chapter I, provides a firm rationale for explicit attention to ECE-child welfare linkages as a potential strategy for addressing the developmental well-being of children who are involved with the child welfare system. ECE has the potential to help the child welfare system meet its responsibilities by contributing in multiple ways to the well-being of foster children (see Table 1). However, the same pathways may also produce detrimental impacts if the ECE that foster children experience is not developmentally supportive. No research exists that describes patterns of ECE reliance, predictors of ECE use, or the relationship between ECE and developmental outcomes for foster children. The present study is aimed at addressing this gap.

Specifically, I use longitudinal data from the National Survey of Child and Adolescent Wellbeing (NSCAW) to address two questions. (1) What is the relationship of type of child welfare placement (in homes with biological parent vs. traditional foster care vs. kinship foster care) as well as child gender, race, and disability status, to the likelihood of experiencing any ECE arrangement, and specifically to enrollment in Head Start? With regard to demographic predictors, this study is fundamentally exploratory and seeks to identify predictors of ECE experiences for children in the child welfare system, and determine whether those predictors map on to predictors that have been documented for the general population. I make no hypotheses with regard to the relationship between disability status and ECE experiences because the literature on ECE exposure for the general population of children with special
needs is inconsistent. Likewise, no evidence exists regarding associations between type of child welfare placement and reliance on ECE; However, the possibility that kinship caregivers may be more dependent on employment if they do not receive foster care payments would suggest that children in kinship placements may experience higher rates of ECE enrollment.

(2) What is the relationship between ECE experiences, including enrollment in Head Start, and the subsequent development of children in the child welfare system? With regard to Head Start, I hypothesize that enrollment will be associated with improved developmental outcomes. However, with regard to other childcare, the literature is inconsistent and the current dataset does not include information about the quality or stability of this care. Therefore, I make no hypotheses about the relationship between other childcare experiences and foster child development.

Methods

Sample

The National Survey of Child and Adolescent Wellbeing (NSCAW) is a federally funded, national-level longitudinal dataset consisting of five waves of data collection on the experiences and outcomes of families who become involved with the child welfare system. The sample of 5,501 children, ranging in age from birth to fourteen years who had been reported to the child welfare agency in their region in the fall of 1999, was recruited from 97 child welfare agencies nationwide. Wave 1 data collection took place 2-6 months after the close of the child protective services investigation into each child’s maltreatment report. Waves 2, 3, and 4 took place 12, 18, and 36 months after the investigation, respectively. The Wave 5 follow-up was conducted 59-97 months after the investigation. In addition to collecting data from the children, biological parents, caseworkers and, where applicable, foster parents were interviewed at each wave of data collection.

The current study examines the ECE experiences of the 2,255 children whose ages ranged from two months to five years at baseline (Wave 1) \((M = 1\) year and 4.5 months, \(SD = 1\) year and 1 month). Approximately half (52%) of these 2,255 children were male. Forty-one percent were white, 34% were
African American, 18% were non-white Hispanic, 4% were American Indian, and 3% were categorized as “other” race. Eighteen percent of these children had been diagnosed with a disability.

About one third of the children (34%, \(n = 897\)) experienced an out-of-home foster care placement and the remaining children (\(n = 1,358\)) received services while remaining in their biological homes. Among the children who entered foster care, 44% experienced at least one kinship foster placement, as distinct from those who only experienced traditional foster placements. Half (49%) of the children in foster care were male. With regard to race-ethnicity, 34% of the children were white, 40% were African American, 21% were non-white Hispanic, 3.5% were American Indian and 1.5% were categorized as “other” race. More than one quarter of these children (27%) had been diagnosed with a disability.

**Measures**

Each of the five waves of data in the NSCAW included two questions pertaining to the ECE experiences of the children who were sampled: (1) Is the target child currently in day care?; and (2) if yes, is the target child currently in Head Start? The first question was asked of all caregivers, the second question was asked only of caregivers who replied “yes” to the first question and whose children were at least three years of age and not yet enrolled in school. These questions were asked of the child’s caregiver (biological or foster parent) during an in-person interview that was conducted at each wave. "Day Care" was not formally defined during the interview process and could thus include the full array of center- and home-based arrangements that families use. As a result it is only possible to examine the impact of two types of care (Head Start and all other arrangements), and analyses examining type of care must be limited to preschool-aged children. These questions were used to create a dichotomous variable for ECE experience (yes/no) and, among preschool-aged children who were in ECE, a dichotomous variable for Head Start enrollment (vs. other type of day care). It is also important to note that histories of ECE reliance were not measured and that children may have experienced multiple childcare arrangements between points of data collection. Thus, it is also not possible to examine stability of ECE with this dataset.
The NSCAW dataset contains child demographic variables including gender and race/ethnicity, as well as caregiver report of whether the child had been diagnosed with a disability by a professional, all of which were collected at the caregiver interview at each wave. Information on the type of child welfare system involvement (receiving services in the biological home, kinship foster care placement or traditional non-relative foster care placement), was also collected during the caregiver interview at each wave. Finally, information was gathered on caregiver employment (whether caregiver was employed, and, if employed, whether part- or full-time), education (highest degree obtained), and household income during the caregiver interview at Waves 1, 3, 4 and 5. Many of the children in this dataset experienced caregiver instability meaning that this information was not necessarily obtained from the same adult over time. This information was utilized to create three dichotomous variables indicating whether children’s caregivers (at each time point) were employed, had obtained at least a High School Degree, and were low income (indicating a household income of less than $30,000 per year).

Outcome variables examined in this study are nationally aged-standardized scores from the Battelle Developmental Inventory (BDI) and the Preschool Language Scale version 3 (PLS-3), as well as caregiver report of child behavior problems from the Child Behavior Checklist (CBCL). The BDI Cognitive Domain subtest was used to assess the cognitive development of infants and children through age seven (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984). Specifically, the BDI provides data on whether children are meeting developmental milestones or showing early signs of learning disabilities and developmental delays (Bliss, 2007). The BDI was administered during the child interview at waves 1, 4, and 5. The BDI has a test-retest (4-month interval) reliability score of $\alpha = 0.98$. Scores on the BDI relate well to other instruments, including the Vineland Social Maturity Scale (Doll 1965) and the Developmental Activities Screening Inventory (Dubose & Langley 1977), with correlations ranging from $r = 0.78$ to $r = 0.94$, and are moderately associated with scores on the Stanford-Binet Intelligence Scale (Terman & Merrill 1960), with correlations that range from $r = 0.40$ to $r = 0.61$. BDI scores were age-standardized to the general population with a mean of 100 and standard deviation of 15.
The PLS-3 is a clinical diagnostic instrument often used in research with young children to evaluate language development (Zimmerman, Steiner, & Pond, 1992). The PLS-3 assesses receptive and expressive language skills of children from 2 weeks through 6 years of age. It also assesses behaviors considered to be language precursors such as babbling and gesturing. The PLS-3 contains two standardized subscales, Auditory (or receptive) Comprehension and Expressive Communication. Scores from both subscales are used in this study. The PLS-3 was administered during the child interview at waves 1, 3, 4, and 5. The PLS-3 was normalized to a nationally representative sample and has internal consistency reliability with Cronbach’s $\alpha$ ranging from 0.47 to 0.86 for Auditory Comprehension, from .68 to .86 for Expressive Communication, and inter-rater reliability of $r = 0.98$. Concurrent validity with the Clinical Evaluation of Language Fundamentals-Revised (CELF-R) is $r = 0.69$ for Auditory Comprehension, $r = 0.75$ for Expressive Communication. PLS-3 scores were age-standardized to the general population with a mean of 100 and standard deviation of 15.

The Child Behavior Checklist (CBCL) is one of the most widely-used standardized measures of maladaptive behavioral and emotional problems. This study utilizes the version designed to assess behavior in 4 to 18 year old children (Achenbach, 1991). Caregivers filled out this questionnaire which asked them about internalizing (i.e., anxious, depressive) and externalizing (i.e., aggressive, hyperactive, noncompliant) behaviors of the target child in Waves 3, 4, and 5 of data collection. The CBCL was evaluated on a nationally representative sample and found to have high inter-rater reliability, $r$ ranging from 0.93 to 0.96, and internal consistency Cronbach’s $\alpha$ ranging from 0.78 to 0.97. For this study, the CBCL total problem behavior standardized (T) score was used to measure the behavioral well-being of preschool-age children. Recommendations for classifying total T scores (Achenbach, 1991), suggest a score of $< 60$ is normal, a score from 60 to 63 is borderline, and scores $>63$ suggest clinical problems.

**Data Analysis**

Predictors of ECE experiences were estimated using generalized estimation equation (GEE) regressions (`xtgee` in Stata/SE Version 11.0), which is a method for analyzing discrete outcomes in correlated (e.g. time-series) data (Zeger & Liang, 1986). This method allows us to estimate odds ratios,
or the contribution of an independent variable to the likelihood of some event or characteristic occurring in an observation (the dependent variable), over time. Specifically, I estimated the contribution of type of child welfare placement (in home with biological parent vs. traditional vs. kinship), as well as child gender, race/ethnicity, disability status, and caregiver employment, education, and income to the likelihood that the child experienced ECE, and if enrolled as a preschooler, whether the child was in Head Start or another type of childcare.

Growth Curve Analysis (GCA) was used to examine the relationship between ECE experiences and cognitive development (BDI), language development (PLS-3), and behavior problems (CBCL) for children involved in the child welfare system, limited to children who were under the age of 5 at baseline. GCA is a longitudinal, dynamic method of analysis that models the impact of the independent variables on change in the dependent variable over time (Rogosa, Brandt, & Zimowski, 1982; McArdle & Epstein, 1987). In this study, GCA was estimated with the *xtmixed* command in Stata/SE Version 11.0, and a random coefficient model was used. These growth curve analyses estimated the change in outcome variables by both ECE experiences and type of child welfare system placement. The influence of time invariant demographic variables (child gender and race/ethnicity) on the growth curve (over time) was controlled for in each model. Time variant demographic variables (disability status, and caregiver employment, education and income) were also included in each model. The impact of ECE exposure was estimated through a series of interaction terms that produced estimates for the influence of ECE (Model 1) and ECE type (Model 2) on growth, as measured by the dependent variables over time (BDI, PLS-3 Auditory Comprehension and Expressive Communication, and CBCL) for children who were receiving in home services $\beta^3$ (the omitted category), children in kinship foster care placements $\beta^{10}$, children in traditional foster care placements $\beta^{11}$ in Model 1, and $\beta^3$ and $\beta^4$ for in-home services, $\beta^{13}$ and $\beta^{15}$ for kinship foster placements, and $\beta^{14}$ and $\beta^{16}$ for traditional foster placements in Model 2. The ECE experiences in Model 2 were limited to those that occurred after the age of 3, so that only children who were enrolled in other childcare or no ECE as preschoolers were compared to children in Head Start.
Model 1: \( \text{Outcome}_{ij} = \beta_1 + \text{Age}_{ij} + \beta_2 \text{ECE}_{ij} + \beta_3 \text{ECE}^* \text{Age}_{ij} + \beta_4 \text{Kin}_{ij} + \beta_5 \text{Traditional}_{ij} + \beta_6 \text{Kin}^* \text{ECE}_{ij} + \beta_7 \text{Traditional}^* \text{ECE}_{ij} + \beta_8 \text{Kin}^* \text{Age}_{ij} + \beta_9 \text{Traditional}^* \text{Age}_{ij} + \beta_{10} \text{Kin}^* \text{ECE}^* \text{Age}_{ij} + \beta_{11} \text{Traditional}^* \text{ECE}^* \text{Age}_{ij} + \beta_{12} \text{Covariates}_{ij} + \varepsilon_{ij} \)

Model 2: \( \text{Outcome}_{ij} = \beta_1 + \text{Age}_{ij} + \beta_2 \text{Other Childcare}_{ij} + \beta_3 \text{Head Start}_{ij} + \beta_4 \text{Other Childcare}^* \text{Age}_{ij} + \beta_5 \text{Head Start}^* \text{Age}_{ij} + \beta_6 \text{Kin}_{ij} + \beta_7 \text{Traditional}_{ij} + \beta_8 \text{Kin}^* \text{Age}_{ij} + \beta_9 \text{Traditional}^* \text{Age}_{ij} + \beta_{10} \text{Kin}^* \text{Other Childcare}_{ij} + \beta_{11} \text{Traditional}^* \text{Other Childcare}_{ij} + \beta_{12} \text{Kin}^* \text{Head Start}_{ij} + \beta_{13} \text{Traditional}^* \text{Head Start}_{ij} + \beta_{14} \text{Kin}^* \text{Other Childcare}^* \text{Age}_{ij} + \beta_{15} \text{Traditional}^* \text{Other Childcare}^* \text{Age}_{ij} + \beta_{16} \text{Kin}^* \text{Head Start}^* \text{Age}_{ij} + \beta_{17} \text{Traditional}^* \text{Head Start}^* \text{Age}_{ij} + \beta_{18} \text{Covariates}_{ij} + \varepsilon_{ij} \)

Illustrative figures for growth curves that differed significantly by ECE experience were produced by estimating predicted values for subgroups of children (by ECE experience and child welfare placement type) while holding all covariates at their mean and varying child age.

**Results**

**ECE experiences**

Sixty percent \((n = 1,342)\) of the children in this study experienced ECE during the study time frame. Of the preschool-aged children who experienced ECE \((845)\), more than half \((56\%)\) were enrolled in Head Start. About two-thirds of the children with disabilities experienced some ECE \((n = 276 \text{ or } 67\%)\), and, 59.5% of these children who were preschool-aged were enrolled in Head Start. Two-thirds of children in out-of-home foster care placements \((n = 602)\) experienced ECE.

Of the 319 preschool-aged foster children who experienced ECE, more than half \((56\%, n = 179)\) were enrolled in Head Start. More than one quarter \((27.3\%)\) of foster parents reported that their child had been diagnosed with a disability. The large majority of these children \((n = 211 \text{ or } 77\%)\) experienced ECE
and more than half who were preschool-aged were enrolled in Head Start (59%, n = 58). Table 3 presents descriptive statistics for all demographic characteristics, including caregiver employment, education, and income, by type of child welfare placement.

Table 3: Descriptive Statistics by Type of Child Welfare System Placement

<table>
<thead>
<tr>
<th></th>
<th>Receiving In Home Services M(SD)</th>
<th>Kinship Foster Placement M(SD)</th>
<th>Traditional Foster Placement M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In ECE</td>
<td>0.271 (0.314)</td>
<td>0.411 (0.457)</td>
<td>0.390 (0.434)</td>
</tr>
<tr>
<td>Male</td>
<td>0.525 (0.499)</td>
<td>0.463 (0.500)</td>
<td>0.511 (0.500)</td>
</tr>
<tr>
<td>White</td>
<td>0.425 (0.493)</td>
<td>0.341 (0.479)</td>
<td>0.350 (0.479)</td>
</tr>
<tr>
<td>Black</td>
<td>0.327 (0.473)</td>
<td>0.397 (0.490)</td>
<td>0.421 (0.492)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.183 (0.388)</td>
<td>0.212 (0.397)</td>
<td>0.170 (0.379)</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.037 (0.189)</td>
<td>0.035 (0.185)</td>
<td>0.033 (0.177)</td>
</tr>
<tr>
<td>Other</td>
<td>0.028 (0.162)</td>
<td>0.015 (0.132)</td>
<td>0.026 (0.167)</td>
</tr>
<tr>
<td>Disability</td>
<td>0.167 (0.282)</td>
<td>0.165 (0.353)</td>
<td>0.355 (0.436)</td>
</tr>
<tr>
<td>Caregiver education</td>
<td>0.764 (0.347)</td>
<td>0.798 (0.399)</td>
<td>0.918 (0.268)</td>
</tr>
<tr>
<td>High School or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed Caregiver</td>
<td>0.538 (0.383)</td>
<td>0.579 (0.490)</td>
<td>0.599 (0.476)</td>
</tr>
<tr>
<td>Caregiver Income</td>
<td>0.446 (0.358)</td>
<td>0.510 (0.482)</td>
<td>0.762 (0.408)</td>
</tr>
<tr>
<td>less than $30,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Means were calculated using the xtsum command in Stata/SE Version 11.0 and standard deviations presented here represent between subjects variation.

Predictors of Childcare and Head Start Exposure

Table 4 displays results from the generalized estimation equations that were used to identify factors that predicted ECE experiences and type of ECE (Head Start versus other childcare) for all children involved with the child welfare system. Results suggest that African American children were 5% more likely than white children to experience ECE, ($\beta = 0.048, SE = 0.014, p = 0.001$). Children with disabilities were 8.5% more likely to experience ECE than their typically developing peers ($\beta = 0.082, SE = 0.015, p < 0.001$). Additionally, children in kinship foster homes were 18% more likely to experience
ECE and children in traditional foster homes were 14% more likely to experience ECE than children receiving in-home services ($\beta = 0.162, SE = 0.033, p < 0.001$). Finally, children in the homes of employed caregivers (6.2%) and caregivers with at least a high school education (16.1%) were more likely to experience ECE than children in the homes of unemployed or less educated caregivers ($\beta = 0.060, SE = 0.014, p < 0.001$ and $\beta = 0.149, SE = 0.012, p < 0.001$, respectively).

Table 4: *Predictors of ECE and Head Start Exposure Among Children in Child Welfare*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>In ECE $\beta$ (SE)</th>
<th>OR</th>
<th>In Head Start $\beta$ (SE)</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in months</td>
<td>-0.001*** (0.000)</td>
<td>0.999</td>
<td>-0.000 (0.000)</td>
<td>0.999</td>
</tr>
<tr>
<td>Kin</td>
<td>0.162*** (0.033)</td>
<td>1.176</td>
<td>0.042* (0.018)</td>
<td>1.043</td>
</tr>
<tr>
<td>Traditional</td>
<td>0.134*** (0.027)</td>
<td>1.143</td>
<td>0.002 (0.015)</td>
<td>1.002</td>
</tr>
<tr>
<td>Black</td>
<td>0.048** (0.014)</td>
<td>1.049</td>
<td>0.024** (0.007)</td>
<td>1.025</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.028 (0.017)</td>
<td>0.972</td>
<td>-0.007 (0.009)</td>
<td>0.993</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.038 (0.032)</td>
<td>1.039</td>
<td>0.030+ (0.017)</td>
<td>1.031</td>
</tr>
<tr>
<td>Other Race</td>
<td>0.011 (0.040)</td>
<td>1.011</td>
<td>0.029 (0.021)</td>
<td>1.030</td>
</tr>
<tr>
<td>Male</td>
<td>0.004 (0.012)</td>
<td>1.004</td>
<td>-0.011+ (0.006)</td>
<td>0.989</td>
</tr>
<tr>
<td>Disability</td>
<td>0.082*** (0.015)</td>
<td>1.085</td>
<td>0.019* (0.008)</td>
<td>1.020</td>
</tr>
<tr>
<td>Caregiver Ed High School</td>
<td>0.060*** (0.014)</td>
<td>1.062</td>
<td>-0.001 (0.008)</td>
<td>0.999</td>
</tr>
<tr>
<td>Employed Caregiver</td>
<td>0.149*** (0.012)</td>
<td>1.161</td>
<td>0.003 (0.006)</td>
<td>1.003</td>
</tr>
<tr>
<td>Caregiver Income less than $30,000</td>
<td>0.005 (0.012)</td>
<td>1.005</td>
<td>-0.008 (0.007)</td>
<td>0.992</td>
</tr>
<tr>
<td>Constant</td>
<td>0.155*** (0.019)</td>
<td>0.052***</td>
<td>0.010 (0.007)</td>
<td>0.992</td>
</tr>
<tr>
<td>N</td>
<td>2,409</td>
<td>2,409</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: †$p<.10$, *$p < .05$, **$p < .01$, ***$p < .001$
Preschool-aged children with disabilities were also more likely to experience Head Start (2%) than typically developing children services ($\beta = 0.019$, $SE = 0.008$, $p = 0.020$). Preschool-aged boys were marginally less likely to experience Head Start (11%) than preschool-aged girls ($\beta = -0.011$, $SE = 0.006$, $p = 0.092$). Finally, preschool-aged children in kinship foster homes were 4.3% more likely to experience Head Start than children receiving in-home services ($\beta = 0.042$, $SE = 0.018$, $p = 0.020$).

Figure 2: Predicted Standardized BDI Scores by ECE Status for Children Receiving In-home Services.

Note: Predicted values were estimated by holding all covariates at their mean and varying child age, ECE status, and child welfare placement type.

Relationship between Childcare and Head Start Exposure and Child Outcomes

Cognitive Development. Table 5 displays the results of the growth curve analysis to determine the relationship between ECE experiences and growth on standardized BDI scores for children involved in the child welfare system. Results indicate that the BDI scores of children receiving in-home services who experienced ECE grew at a faster rate than those of children receiving in home services who did not experience ECE, ($\beta = 0.177$, $SE = 0.034$, $p < 0.001$) (See Figure 2). Children in kinship foster homes who experienced ECE demonstrated marginally faster growth on the BDI compared to children in kinship foster homes who did not experience ECE ($\beta = 0.819$, $SE = 0.480$, $p = 0.088$) (See Figure 3).
Figure 3: Predicted Standardized BDI Scores by ECE Status for Children in Kinship Foster Placements.

Table 5 also displays results of the growth curve analysis to determine the relationship between type of ECE experience at preschool age (compared to no ECE), and growth on the BDI for children involved in the child welfare system. Preschool-aged children receiving in-home services demonstrated significantly faster growth on the BDI if they were enrolled in “other childcare arrangements” ($\beta = 1.071$, $SE = 0.199$, $p < 0.001$) and marginally faster growth on the BDI if they were enrolled in Head Start ($\beta = 0.160$, $SE = 0.085$, $p = 0.059$) compared to preschoolers receiving in-home services who did not experience ECE (See Figure 4). Preschoolers in kinship foster homes demonstrated significantly faster growth on the BDI if they were enrolled in Head Start ($\beta = 1.707$, $SE = 0.870$, $p = 0.050$), but not if they experienced “other childcare arrangements”, compared to preschoolers in kinship foster homes who did not experience ECE. There was no relationship between type of ECE experience and growth in BDI scores for preschoolers in traditional foster care placements (See Figure 5).
Table 5: *ECE Experiences and Growth in Battelle Developmental Inventory (BDI) Scores*

<table>
<thead>
<tr>
<th></th>
<th>All Children</th>
<th>Preschooler Children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$ (SE)</td>
<td>$\beta$ (SE)</td>
</tr>
<tr>
<td>Age in months</td>
<td>-0.096*** (0.021)</td>
<td>-0.082*** (0.020)</td>
</tr>
<tr>
<td>In ECE</td>
<td>-3.347** (1.097)</td>
<td>--</td>
</tr>
<tr>
<td>In Other Childcare (CC)</td>
<td>--</td>
<td>-41.505*** (8.223)</td>
</tr>
<tr>
<td>In Head Start (HS)</td>
<td>--</td>
<td>-3.124 (3.246)</td>
</tr>
<tr>
<td>In Kinship Foster Care (Kin)</td>
<td>-4.197 (9.152)</td>
<td>-2.750 (9.018)</td>
</tr>
<tr>
<td>In Traditional Foster Care (Traditional)</td>
<td>6.643 (4.944)</td>
<td>3.588 (4.170)</td>
</tr>
<tr>
<td>ECE by Age in Months</td>
<td>0.177*** (0.034)</td>
<td>--</td>
</tr>
<tr>
<td>CC by Age in Months (Growth)</td>
<td>--</td>
<td>1.071*** (0.199)</td>
</tr>
<tr>
<td>HS by Age in Months (Growth)</td>
<td>--</td>
<td>0.160 (0.085)</td>
</tr>
<tr>
<td>ECE for Kin</td>
<td>-30.244* (18.346)</td>
<td>--</td>
</tr>
<tr>
<td>CC for Kin</td>
<td>--</td>
<td>-16.420 (30.090)</td>
</tr>
<tr>
<td>HS for Kin</td>
<td>--</td>
<td>-70.494* (36.562)</td>
</tr>
<tr>
<td>ECE for traditional</td>
<td>-4.408 (7.663)</td>
<td>--</td>
</tr>
<tr>
<td>CC for Traditional</td>
<td>--</td>
<td>2.153 (25.649)</td>
</tr>
<tr>
<td>HS for traditional</td>
<td>--</td>
<td>9.530 (38.890)</td>
</tr>
<tr>
<td>Kin by Age in Months (Growth)</td>
<td>0.047 (0.258)</td>
<td>0.021 (0.256)</td>
</tr>
<tr>
<td>Traditional by Age in Months (Growth)</td>
<td>-0.077 (0.152)</td>
<td>-0.017 (0.135)</td>
</tr>
<tr>
<td>Kin, ECE by Age in months</td>
<td>0.819* (0.480)</td>
<td>--</td>
</tr>
<tr>
<td>Traditional, ECE by Age in months</td>
<td>-0.028 (0.225)</td>
<td>--</td>
</tr>
<tr>
<td>Kin, CC by Age in months (Growth)</td>
<td>--</td>
<td>0.499 (0.765)</td>
</tr>
<tr>
<td>Traditional, CC by Age in months (Growth)</td>
<td>--</td>
<td>-0.207 (0.642)</td>
</tr>
<tr>
<td>Kin, HS by Age in months (Growth)</td>
<td>--</td>
<td>1.707* (0.870)</td>
</tr>
<tr>
<td>Traditional, HS by Age in months (Growth)</td>
<td>--</td>
<td>-0.136 (0.967)</td>
</tr>
<tr>
<td>Black</td>
<td>-0.063*** (0.017)</td>
<td>-0.055** (0.017)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.065** (0.021)</td>
<td>-0.060** (0.021)</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.036 (0.039)</td>
<td>0.040 (0.039)</td>
</tr>
<tr>
<td>Other Race</td>
<td>0.008 (0.048)</td>
<td>0.008 (0.048)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.067*** (0.015)</td>
<td>-0.068*** (0.015)</td>
</tr>
<tr>
<td>Disability</td>
<td>-0.181*** (0.021)</td>
<td>-0.172*** (0.021)</td>
</tr>
<tr>
<td>Caregiver Ed High School or more</td>
<td>1.039* (0.507)</td>
<td>1.166* (0.506)</td>
</tr>
<tr>
<td>Employed Caregiver</td>
<td>-0.081 (0.449)</td>
<td>0.001 (0.443)</td>
</tr>
<tr>
<td>Caregiver Income less than $30,000</td>
<td>1.769*** (0.461)</td>
<td>1.808*** (0.462)</td>
</tr>
<tr>
<td>Constant</td>
<td>45.890*** (0.586)</td>
<td>45.443*** (0.568)</td>
</tr>
<tr>
<td>N</td>
<td>1,944</td>
<td>1,942</td>
</tr>
</tbody>
</table>

Notes: †p<.10, *p < .05, **p < .01, ***p < .001
Figure 4: Predicted Standardized BDI Scores by ECE Type for Preschoolers Receiving In-home Services.

Note: Predicted values were estimated by holding all covariates at their mean and varying child age, ECE status, and child welfare placement type.

Figure 5: Predicted Standardized BDI Scores by ECE Type for Preschoolers in Kinship Foster Placements.

Note: Predicted values were estimated by holding all covariates at their mean and varying child age, ECE status, and child welfare placement type.
Language Development. The same method was utilized to explore the relationship between foster children’s childcare exposure and preschool language development (PLS-3 scores). There was no relationship between experiencing ECE (overall) and growth in children’s scores on either the Auditory Comprehension or the Expressive Communication subscales of the PLS-3 for any of the children involved with the child welfare system (See Table 6). However, children receiving in home services who experienced other childcare arrangements as preschoolers did demonstrate faster growth on both the Auditory Comprehension ($\beta = 0.355, SE = 0.076, p < 0.001$) (See Figure 6) and the Expressive Communication ($\beta = 0.475, SE = 0.078, p < 0.001$) (See Figure 7) subscales of the PLS-3 compared to children who did not experience any type of ECE.

Figure 6: Predicted Auditory Comprehension Scores by ECE Type for Preschoolers Receiving In-home Services.

![Predicted Auditory Comprehension Scores by ECE Type for Preschoolers Receiving In-home Services.](image)

*Note: Predicted values were estimated by holding all covariates at their mean and varying child age, ECE status, and child welfare placement type.*
In addition, children in kinship foster homes who experienced other childcare arrangements as preschoolers demonstrated marginally slower growth on the Expressive Communication subscale of the PLS-3 ($\beta = -0.690$, $SE = 0.362$, $p = 0.056$) than children in kinship foster homes who did not experience ECE as preschoolers (See Figure 8). There was no relationship between type of ECE experience and growth in language development for children in traditional foster care placements (See Table 6).

Figure 7: Predicted Expressive Communication Scores by ECE Type for Preschoolers Receiving In-home Services.

Note: Predicted values were produced by holding all covariates at their mean and varying child age, ECE status, and child welfare placement type.
Table 6: ECE Experiences and Growth in Preschool Language Scale (PLS-3) Scores

<table>
<thead>
<tr>
<th></th>
<th>PLS Auditory Comprehension All children</th>
<th>PLS Expressive Communication All children</th>
<th>PLS Expressive Communication Preschool children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β (SE)</td>
<td>β (SE)</td>
<td>β (SE)</td>
</tr>
<tr>
<td><strong>Age in months</strong></td>
<td>0.120*** (0.019)</td>
<td>0.111*** (0.019)</td>
<td>0.032 (0.020)</td>
</tr>
<tr>
<td>In ECE</td>
<td>0.200 (1.452)</td>
<td></td>
<td>-2.060 (1.425)</td>
</tr>
<tr>
<td>In Other Childcare (CC)</td>
<td>-18.048*** (3.814)</td>
<td>-24.529*** (3.878)</td>
<td></td>
</tr>
<tr>
<td>In Head Start (HS)</td>
<td>0.755 (3.959)</td>
<td>0.522 (3.907)</td>
<td></td>
</tr>
<tr>
<td>In Kinship Foster Care (Kin)</td>
<td>-14.279* (7.230)</td>
<td>-22.670*** (7.275)</td>
<td>-18.320** (6.854)</td>
</tr>
<tr>
<td>In Traditional Foster Care</td>
<td>0.838 (4.824)</td>
<td>-4.681 (4.823)</td>
<td>-6.083 (4.024)</td>
</tr>
<tr>
<td>ECE by Age in Months (Growth)</td>
<td>-0.005 (0.034)</td>
<td>0.037 (0.034)</td>
<td></td>
</tr>
<tr>
<td>CC by Age in Months (Growth)</td>
<td>0.355*** (0.076)</td>
<td>0.475*** (0.078)</td>
<td></td>
</tr>
<tr>
<td>HS by Age in Months (Growth)</td>
<td>-0.018 (0.085)</td>
<td>-0.010 (0.085)</td>
<td></td>
</tr>
<tr>
<td>CC for Kin</td>
<td>24.357 (16.347)</td>
<td>37.979* (16.665)</td>
<td></td>
</tr>
<tr>
<td>HS for Kin</td>
<td>6.540 (29.314)</td>
<td>15.865 (29.578)</td>
<td></td>
</tr>
<tr>
<td>ECE for Traditional</td>
<td>-11.454 (7.675)</td>
<td>-2.536 (7.675)</td>
<td></td>
</tr>
<tr>
<td>CC for Traditional</td>
<td>-6.557 (12.662)</td>
<td>5.367 (12.898)</td>
<td></td>
</tr>
<tr>
<td>HS for traditional</td>
<td>28.244 (23.665)</td>
<td>22.003 (23.931)</td>
<td></td>
</tr>
<tr>
<td>Kin by Age in Months (Growth)</td>
<td>0.251 (0.157)</td>
<td>0.421** (0.161)</td>
<td>0.359* (0.156)</td>
</tr>
<tr>
<td>Traditional by Age in Months (Growth)</td>
<td>-0.013 (0.110)</td>
<td>0.104 (0.113)</td>
<td>0.134 (0.102)</td>
</tr>
<tr>
<td>Kin, ECE by Age in Months (Growth)</td>
<td>-0.026 (0.290)</td>
<td>-0.283 (0.298)</td>
<td></td>
</tr>
<tr>
<td>Traditional, ECE by Age in Months (Growth)</td>
<td>0.185 (0.177)</td>
<td>0.008 (0.181)</td>
<td></td>
</tr>
<tr>
<td>Kin, CC by Age in months (Growth)</td>
<td>-0.401 (0.351)</td>
<td>-0.690* (0.362)</td>
<td></td>
</tr>
<tr>
<td>Traditional, CC by Age in months (Growth)</td>
<td>0.062 (0.268)</td>
<td>-0.153 (0.276)</td>
<td></td>
</tr>
<tr>
<td>Kin, HS by Age in months (Growth)</td>
<td>-0.198 (0.615)</td>
<td>0.388 (0.624)</td>
<td></td>
</tr>
<tr>
<td>Traditional, HS by Age in months (Growth)</td>
<td>-0.486 (0.492)</td>
<td>-0.458 (0.502)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-0.103*** (0.017)</td>
<td>-0.103*** (0.017)</td>
<td>-0.053** (0.018)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.138*** (0.021)</td>
<td>-0.139*** (0.021)</td>
<td>-0.099*** (0.022)</td>
</tr>
<tr>
<td>American Indian</td>
<td>-0.036 (0.041)</td>
<td>-0.042 (0.041)</td>
<td>0.000 (0.043)</td>
</tr>
<tr>
<td>Other Race</td>
<td>-0.031 (0.048)</td>
<td>-0.038 (0.048)</td>
<td>0.005 (0.050)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.058*** (0.015)</td>
<td>-0.058*** (0.015)</td>
<td>-0.086*** (0.016)</td>
</tr>
<tr>
<td>Disability</td>
<td>-0.134*** (0.018)</td>
<td>-0.140*** (0.019)</td>
<td>-0.171*** (0.019)</td>
</tr>
<tr>
<td>Caregiver Ed High School or more</td>
<td>1.888** (0.719)</td>
<td>1.804* (0.715)</td>
<td>1.819* (0.714)</td>
</tr>
<tr>
<td>Employed Caregiver</td>
<td>0.336 (0.611)</td>
<td>0.351 (0.605)</td>
<td>0.685 (0.604)</td>
</tr>
<tr>
<td>Caregiver Income less than $30,000</td>
<td>2.421*** (0.636)</td>
<td>2.277*** (0.636)</td>
<td>1.587* (0.635)</td>
</tr>
<tr>
<td>Constant</td>
<td>88.715*** (0.804)</td>
<td>89.183*** (0.781)</td>
<td>90.785*** (0.789)</td>
</tr>
<tr>
<td>N</td>
<td>2,062</td>
<td>2,060</td>
<td>2,062</td>
</tr>
</tbody>
</table>

Notes: †p<.10, *p < .05, **p < .01, ***p < .001
Figure 8: Predicted Expressive Communication Scores by ECE type for Preschoolers in Kinship Foster Placements.

![Graph showing predicted expressive communication scores by ECE type for preschoolers in kinship foster placements.](image)

Note: Predicted values were produced by holding all covariates at their mean and varying age in months, ECE status, and child welfare placement type.

**Child Behavior.** The same method was utilized a third time to explore the relationship between ECE experiences among children involved in the child welfare system and behavior problems over time, as measured by the Child Behavior Checklist (CBCL). There was no relationship between experiencing ECE or type of ECE experience and the development of problem behaviors over time for any children involved in the child welfare system (See Table 7).
Table 7: *ECE Experiences and Growth in Child Behavior Checklist (CBCL)* Scores

<table>
<thead>
<tr>
<th></th>
<th>ECE for all Children $\beta$ (SE)</th>
<th>ECE for Preschoolers $\beta$ (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in months</td>
<td>-0.022 (0.041)</td>
<td>-0.023 (0.041)</td>
</tr>
<tr>
<td>In ECE</td>
<td>0.390 (5.707)</td>
<td>--</td>
</tr>
<tr>
<td>In Other Childcare (CC)</td>
<td>--</td>
<td>3.833 (6.674)</td>
</tr>
<tr>
<td>In Head Start (HS)</td>
<td>--</td>
<td>-0.401 (12.297)</td>
</tr>
<tr>
<td>In Kinship Foster Care (Kin)</td>
<td>-12.099 (16.246)</td>
<td>-11.961 (16.220)</td>
</tr>
<tr>
<td>In Traditional Foster Care (Traditional)</td>
<td>11.207 (13.041)</td>
<td>11.099 (13.022)</td>
</tr>
<tr>
<td>ECE by Age in Months</td>
<td>-0.004 (0.085)</td>
<td>--</td>
</tr>
<tr>
<td>CC by Age in Months (Growth)</td>
<td>--</td>
<td>-0.046 (0.096)</td>
</tr>
<tr>
<td>HS by Age in Months (Growth)</td>
<td>--</td>
<td>-0.016 (0.213)</td>
</tr>
<tr>
<td>ECE for Kin</td>
<td>18.055 (25.175)</td>
<td>--</td>
</tr>
<tr>
<td>CC for Kin</td>
<td>--</td>
<td>31.787 (27.696)</td>
</tr>
<tr>
<td>HS for Kin</td>
<td>--</td>
<td>-54.358 (72.237)</td>
</tr>
<tr>
<td>ECE for traditional</td>
<td>-20.268 (24.526)</td>
<td>--</td>
</tr>
<tr>
<td>CC for Traditional</td>
<td>--</td>
<td>-19.680 (25.590)</td>
</tr>
<tr>
<td>HS for traditional</td>
<td>--</td>
<td>60.952 (102.153)</td>
</tr>
<tr>
<td>Kin by Age in Months (Growth)</td>
<td>0.142 (0.219)</td>
<td>0.142 (0.218)</td>
</tr>
<tr>
<td>Traditional by Age in Months (Growth)</td>
<td>0.019 (0.174)</td>
<td>0.018 (0.173)</td>
</tr>
<tr>
<td>Kin, ECE by Age in months</td>
<td>-0.140 (0.380)</td>
<td>--</td>
</tr>
<tr>
<td>Traditional, ECE by Age in months</td>
<td>0.432 (0.371)</td>
<td>--</td>
</tr>
<tr>
<td>Kin, CC by Age in months (Growth)</td>
<td>--</td>
<td>-0.330 (0.409)</td>
</tr>
<tr>
<td>Traditional, CC by Age in months (Growth)</td>
<td>--</td>
<td>0.451 (0.383)</td>
</tr>
<tr>
<td>Kin, HS by Age in months (Growth)</td>
<td>--</td>
<td>1.111 (1.309)</td>
</tr>
<tr>
<td>Traditional, HS by Age in months (Growth)</td>
<td>--</td>
<td>-1.078 (1.721)</td>
</tr>
<tr>
<td>Black</td>
<td>-0.045** (0.015)</td>
<td>-0.046** (0.015)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.058** (0.018)</td>
<td>-0.058** (0.018)</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.014 (0.033)</td>
<td>0.014 (0.033)</td>
</tr>
<tr>
<td>Other Race</td>
<td>-0.039 (0.043)</td>
<td>-0.038 (0.043)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.009 (0.013)</td>
<td>-0.009 (0.013)</td>
</tr>
<tr>
<td>Disability</td>
<td>0.219*** (0.014)</td>
<td>0.221*** (0.014)</td>
</tr>
<tr>
<td>Caregiver Ed High School or more</td>
<td>-0.866 (1.068)</td>
<td>-0.984 (1.069)</td>
</tr>
<tr>
<td>Employed Caregiver</td>
<td>-2.963** (0.882)</td>
<td>-2.912** (0.883)</td>
</tr>
<tr>
<td>Caregiver Income less than $30,000</td>
<td>-1.979* (0.923)</td>
<td>-2.009* (0.927)</td>
</tr>
<tr>
<td>Constant</td>
<td>34.550*** (3.035)</td>
<td>34.672*** (3.032)</td>
</tr>
<tr>
<td>N</td>
<td>2,053</td>
<td>2,052</td>
</tr>
</tbody>
</table>

*Notes: †p<.10, *p < .05, **p < .01, ***p < .001*
Discussion

This is the first investigation to provide evidence that ECE may play a constructive role in the development of children in the child welfare system. Like the literature on other groups of at-risk children, results from analysis of the NSCAW suggest that ECE experiences may have positive impacts on the development of children involved with the child welfare system. Specifically, experiencing ECE was associated with more rapid cognitive development during the first seven years of life for children receiving in-home services and for those in kinship foster care placements. Preschool-aged children who were receiving in-home services displayed these associations regardless of the type of ECE they experienced. It is unclear why type of care was not related to developmental outcomes for this subgroup. It is possible that the home environments of children who become involved with the child welfare system but are not removed from their biological homes remain poor, creating the potential for any out-of-home experience (e.g. childcare) to improve their outcomes. In contrast, preschool-aged children in kinship foster care placements displayed positive associations between ECE experiences and cognitive development only when enrolled in Head Start.

With regard to the relationship between ECE experiences and the language development of children involved with the child welfare system, preschool-aged children receiving in-home services who were enrolled in ECE demonstrated faster growth in their language development (both subscales) than preschoolers who were not enrolled in ECE only if they experienced childcare arrangements other than Head Start. By contrast, preschool-aged children in kinship foster care placements demonstrated marginally slower growth in their Expressive language development when they experienced ECE of all types than children who did not experience ECE. I did not find any relationship between ECE enrollment, or type of ECE enrollment, and Child Behavioral Checklist scores.

On the one hand, these findings replicate substantial evidence regarding linkages between ECE and improved cognitive and language development (Belsky, et al. 2007; Campbell et al., 2002; Conyers et al., 2003; Gormley, et al., 2008; Loeb, Fuller, Kagan, & Carol, 2004; Lowenstein, 2009; McCartney et al., 2007; Phillips & Lowenstein, 2011; Phillips & Meloy, 2012; Schweinhart et al., 1993; U.S. DHHS,
These findings are also in line with research that suggests that linkages between ECE exposure and poorer social-emotional development found for non-risk samples may not exist for children at greater risk, including those involved with the child welfare system (Phillips & Lowenstein, 2010; Belsky, et al., 2007). They are also in line with findings from research on Early Head Start that suggests that exposure to ECE may actually reduce behavior problems for some children (McCartney, et al., 2007; US-DHHS, 2006). Children at-risk may be least likely to display detrimental impacts on behavior when they are enrolled in high-quality ECE consistently (and perhaps also when that ECE is stable over time) (Love et al., in press). Unfortunately, the data presented here do not allow for an examination of whether quality, consistency or stability account for the lack of relationship between ECE and child behavior (CBCL scores) in this study.

On the other hand, these findings are also somewhat supportive of recent evidence that documents associations between community-based childcare programs and poor developmental outcomes. Specifically, these findings indicate that experiencing “other childcare arrangements” was less advantageous to Expressive language development for children in kinship foster placements than remaining in the foster home. Importantly, this was not the case for children receiving in home services. For these children, “other childcare arrangements” were associated with faster growth in language and cognitive development. These inconsistencies may be a function of differences in the quality and stability of care, however this study is unable to examine these moderating influences. These differences may also be a function of systematic differences in the children who are placed with kinship foster parents compared to those who are not. Kinship care providers are able to select into foster parenting on the basis of children’s needs, and research confirms that kin are less likely to take on these responsibilities for children with multiple and/or serious health and behavioral problems (Berrick, Barth, & Needell, 1994).

Another interesting finding was the relatively high rate of childcare use, especially Head Start enrollment, in this sample despite the documented lack of specific provisions for foster children in ECE program policies (Meloy & Phillips, 2012). This finding is encouraging, especially given our results linking Head Start to improved cognitive development, and highlights the importance of understanding
factors that may lead to experiencing ECE, especially Head Start, for this population. Our findings regarding predictors of childcare exposure within this sample of children involved in the child welfare system revealed the contributions of child race/ethnicity and disability status, caregiver employment and education, and type of foster care placement. African American children were more likely than children of other races to experience ECE and Head Start, specifically. This finding confirms documented patterns of childcare exposure among ethnic minorities (Loeb, et al., 2004; Magnuson, et al., 2003). Children with disabilities were also more likely to experience ECE, and Head Start, specifically, than their typically developing peers. This finding appears to confirm recent evidence that children with disabilities may actually be over-represented in ECE (Parish, et al., 2005; Parish & Cloud, 2006), but is inconsistent with prior evidence that these children were underrepresented in ECE programs (Booth & Kelly, 1998; Booth-LaForce & Kelly, 2004; Warfield & Hauser-Cram, 1996). The high rates of ECE (and Head Start) enrollment among children with special needs in the current sample could be linked to the reservation of 10% of Head Start enrollment slots for this population. In addition, caregiver employment and education level consistently predicted the ECE experiences of children in foster care. Specifically, employed and high-school educated caregivers were more likely to enroll children in their care in ECE programs, but not in Head Start specifically. These findings are also consistent with the larger ECE literature which suggests that employment is associated with childcare use but not Head Start enrollment (Phillips & Cabrera, 1996) and that parent education is the strongest predictor of childcare selection (NICHD-ECCRN & Duncan, 2003).

Finally, children in kinship foster homes were more likely to experience both ECE and preschoolers were more likely to experience Head Start, specifically, than children receiving in-home services. Previous research has suggested that kinship foster parents have fewer resources and are more likely to work outside of the home (Cuddeback & Orme, 2002) than traditional foster caregivers. In this sample, foster placement type, not just foster parent employment status, was linked to the likelihood that children would experience ECE. These results suggest that many aspects of ECE selection may operate
through similar mechanisms for children in the child welfare system and low-income children in the homes of their biological families who have previously been studied.

This study is not without limitations. Primarily, it does not employ an experimental design, and therefore cannot establish a causal relationship between ECE experiences and well-being for children involved in the child welfare system. This correlational design also introduces the question of selection effects. This study attempts to address this problem with the inclusion of controls for caregiver employment, education and income, and child race/ethnicity, gender, and disability status. Yet, it is unlikely that these controls completely eliminate the potential for selection bias (NICHD-ECCRN & Duncan, 2003). In addition, the ECE variables available for analysis were extremely rudimentary and did not include type (other than Head Start versus other), quality, or dosage.

Finally, childcare stability may be particularly important for these children given their likelihood of having experienced instability in their home and foster care placements (Rubin, O’Reilly, Luan, & Localio, 2007; Lewis et al., 2007). The NSCAW did not collect data on ECE experiences in such a way that makes it possible to examine stability of care, thus preventing the examination of stability as a mediator of differences in developmental growth for children who experienced or did not experience childcare and for those enrolled in Head Start versus some other form of potentially less stable childcare.

A research agenda built around understanding relationships between ECE and child development for children in the child welfare system has the potential to inform policy and practice at the intersection of ECE and child welfare to better serve this vulnerable population. This study is the first of its kind to explore the role of ECE in the lives of these children. The associations that this study revealed carry important implications, namely that the ECE experiences of children involved in the child welfare system have the potential to either facilitate or detract from the goal of promoting their well-being. The most consistent finding was a positive association between enrollment in Head Start and the developmental outcomes of preschoolers in kinship foster placements. The fact that ECE may or may not benefit the
development of these vulnerable children, compared to staying at home, ups the ante for those who work on either side of this critical intersection. Child welfare researchers and practitioners, in particular, should pay explicit attention to the role of ECE in the lives of these children and consider strategies for steering these children into high-quality and stable care arrangements. Future research that minimizes selection effects and explores the role of type, quality, dosage, and stability of ECE experiences in the lives of these vulnerable young children will be critical to uncovering the characteristics of ECE that support beneficial impacts for children in the child welfare system. Research that is able to tease apart these associations will inform policy and practice and encourage service integration at a time when multi-system coordination and efficiency, especially in early childhood, has become a focus of state and federal agendas (US-DHHS, 2011).
CHAPTER III: Child Development at the Crossroads of Child Welfare and Childcare:

Foster Care, Childcare Assistance, and Placement Stability.


Chapter II offered a national-level landscape of the ECE experiences of children in the child welfare system, including those in foster care, and linked those experiences to their developmental outcomes. The results of the study presented in Chapter II supports the hypothesis that children who have experienced toxic stress arising from involvement with the child welfare system may benefit directly from enrollment in ECE settings. Yet, as both Table 1 and Figure 1 indicate, ECE also has the potential to influence the placement instability common to children in foster care that compounds the adverse developmental outcomes associated with child welfare involvement. To date, no evidence exists regarding whether and when ECE has the potential to support foster parents and perhaps, as a result, increase foster placement stability. The study presented here is designed to begin filling this gap in the empirical literature by exploring the role of childcare assistance (given its potential to alleviate foster parent stress) in promoting or decreasing placement stability for children in foster care.

Children in foster care exhibit a range of neurobiological, cognitive, academic, and psychosocial difficulties (Cooley & Petren, 2011; Lipscomb & Pears, 2011). In addition to the risks they share with other children growing up in poverty, these high rates of delays and difficulties are likely affected by additional risks that are especially prevalent among the child welfare population. Those who experience the toxic stress associated with child maltreatment, for example, are also more likely to display post-traumatic stress like symptoms (Margolin & Gordis, 2000).

Foster children also display notably high rates of attachment disorders (Dozier, et al., 2001; Morton & Browne, 1998). The disruption of being removed from their biological homes and the instability that characterizes foster care placements in this country (Wulczyn, et al., 2003) may compound
these risks and their developmental effects (Lewis et al., 2007; Rubin, et al., 2007; Vig, et al., 2005). Research has confirmed that these transitions exacerbate the negative developmental outcomes associated with abuse and neglect (Rubin, et al., 2007; Lewis, et al., 2007). Multiple placements, in particular, increase the risk for attachment disorders among young foster children (Morton & Browne, 1998; Lewis, et al., 2007; Webster, et al., 2000; Wulczyn, et al., 2003), and can lead to adverse long-term outcomes including poor peer relationships, behavior problems, school dropout, and mental health issues (Carlson, 1998; Trout, et al., 2008).

Thus, variation in children’s experiences within the context of foster care may be important predictors of foster children’s long-term development. Specifically, the quality and stability of their foster care placements may buffer young foster children from—or compound—the poor developmental outcomes associated with their high-risk childhoods. Thus, identifying avenues for increasing the quality and stability of foster care placements could be critical to supporting the healthy development of these children. Among the candidates for this role, childcare assistance programs that link foster children to early educational experiences, warrant explicit attention.

The vast literature on ECE, which combines research on childcare, preschool, and early intervention programs, has documented the wide variation in every imaginable feature of ECE programs, confirmed the developmentally supportive role of ECE, and highlighted the detrimental impacts that are associated with poor quality and unstable care (Ahnert, et al., 2006; Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Herbst & Tekin, 2008; NICHD ECCRN, 2005; Phillips & Lowenstein, 2011). Recent theorizing suggests that variation in the quality of ECE may matter more for children experiencing vulnerability arising from biologically based sources, poverty, or other forms of toxic stress because of its impacts, for better or for worse, on the development of neural systems that underlie the stress response system (Blair et al., in press). This possibility, in turn, is highly pertinent to children in foster care given their common exposure to toxic stress. At present, there is no evidence regarding the role of childcare experiences or the quality of those experiences as a potential compensatory influence in the lives of children in foster care.
To the extent that childcare is examined at all in the context of foster care, it is in the form of respite care. Respite care is a form of assistance that is designed to alleviate foster parent stress by offering short-term alternative care arrangements for foster children. Evidence indicates that access to respite care improves foster parent outcomes, including reduced stress and stronger intentions to continue fostering—factors that may promote foster parent retention and satisfaction (Brown & Rodger, 2009; Owens-Kane, 2007; Rhodes, et al., 2001). No evidence on child impacts exists.

While generalizing results from respite care to more typical ECE arrangements is questionable, these findings raise the possibility that access to more regular and dependable ECE may offer even greater support for foster parents. This evidence also highlights that, when examining foster children, it is important to consider ECE as a potentially beneficial intervention with both direct impacts on the child and indirect impacts that are mediated through the foster parent.

**Childcare Assistance and Foster Families**

The vast majority of states offer federal childcare subsidies to foster parents as part of efforts to provide for both their economic and social support needs (Minton, Durham & Giannarelli, 2011). No research has been conducted on whether these subsidies or other childcare assistance programs explicitly for foster parents do, indeed, promote positive outcomes for foster parents or the children in their care. However, research on the implications of childcare assistance for families in poverty offers a conceptualization of a potentially constructive role within the foster care system. First, evidence indicates that CCDF subsidies support the employment and economic independence of low-income parents (Blau & Tekin, 2007; Forry, 2009; Gennetian, Crosby, Huston, & Lowe, 2004; Tekin, 2005; 2007). While this literature has focused on biological parents, there is every reason to believe that childcare has the same potential to serve as an essential employment support for foster parents who need additional financial resources in order to successfully maintain their homes (Hudson & Levassuer, 2002). In this context, childcare assistance could lead to greater foster parent retention if these efforts promote the economic security of the home. However, research has also linked instability in subsidy eligibility and receipt to
instability in parental employment (Blau & Robbins 1991; Hofferth & Collins 2000; Meyers 1997) for low-income parents. If ECE assistance is hard to come by or retain, foster parents may have difficulty maintaining employment as a result of unmet childcare needs, or they may opt not to foster (especially among kinship care providers), thus exacerbating problems the child welfare system already faces in recruiting and maintaining foster parents.

Second, childcare assistance in the form of subsidies typically leads parents to choose center-based over home-based care (Berger & Black, 1992; Brooks, 2002; Crosby, Gennetian, & Huston, 2005; Henly, Ananat, & Danziger, 2006; Tekin, 2005; Weinraub, Shlay, Harmon, & Tran, 2005; Wolfe & Scrivner, 2004). In general, center care is of higher quality than home-based care (Coley, Li-Grinning, & Chase-Lansdale, 2006; Rigby, Ryan, & Brooks-Gunn, 2007), and more strongly linked to positive school readiness outcomes (NICHD ECCRN 2005, 2006). Subsidy receipt has also been linked to selection of higher quality home-based (Ryan et al., 2011) and center-based childcare (Johnson, et al., 2011) as compared to eligible, non-recipients who do not use other forms of publicly-funded care (e.g., Head Start). To the extent that access to center-based and possibly higher quality childcare options for foster children offers both consistent respite from the rigors of providing foster care and dependable support for employment that can enhance foster family resources, this literature further supports the possibility that childcare assistance may play an important role in promoting placement stability for foster children.

The Current Study

The literatures on risk and toxic stress, the benefits of developmentally supportive ECE experiences, and on childcare assistance all bear on the potentially positive role that high-quality, stable childcare can play within the child welfare system, and suggest a vast landscape of needed research at this policy intersection (see Meloy & Phillips, 2012). As an initial step, this study takes as its point of departure the importance of foster placement stability for young foster children and the potential of childcare assistance to either promote or exacerbate it.

Specifically, I examine the relationship between childcare assistance receipt among foster parents and the stability of foster care placements for young children ages birth to five years in Illinois.
Administrative data from Illinois, which offer the unique opportunity to model the relationship between Division of Child and Family Services childcare assistance (CCA) use and the occurrence and timing of foster placement disruptions, are used to explore this question. I hypothesize that children whose foster parents use childcare assistance will be less likely to experience placement disruptions. Importantly, all foster parents in Illinois are eligible to receive childcare assistance regardless of family income and work status. I also explore whether the relationship between childcare assistance and foster placement stability is moderated by type of childcare used or duration of assistance receipt. I hypothesize that among children who experience CCA supported childcare, receiving center-based childcare will be associated with a lower risk of placement disruption. Finally, I explore potential interactions between assistance use and both type of foster care placement and age of entry into foster care as they affect placement disruptions over time. I hypothesize that the impact of childcare assistance on the likelihood of placement disruption will be more pronounced for older children, who are at higher risk for placement instability (Wulczyn et al., 2003), and for children in kinship care given their more disadvantaged circumstances.

**Methods**

**Data Sources**

Data utilized in this study were obtained by merging data from the Illinois Department of Child and Family Services’ (DCFS) Child and Youth Centered Information System (CYCIS)-Child Pull and the Illinois Department of Human Services’ Child Care Tracking System (CCTS). The CYCIS-Child Pull included information on children’s foster placement histories, as well as child demographics for all children who entered the child welfare system between the ages of one and sixty months in the state of Illinois between January 2003 and January 2009. Data from the CYCIS-Child Pull included total number of placements and dates of entry into and exit from foster care, as well as start and end dates for each foster care placement. These dates were utilized, along with the child’s date of birth, to calculate age of entry into foster care and total time in foster care.
Dates of entry into and exit from foster care were also utilized in conjunction with child's date of birth and age (in months) at the time of foster parent childcare assistance use to confirm that children’s foster parents were using this assistance while in foster care. The CYCIS-Child Pull also contained child demographic information: child gender, child race (white, black, Hispanic and other), and child disability status. Disability status was an administrative variable entered by either the CPS investigator or caseworker without specification of the basis of “disability” determination. The type of each foster care placement, kin vs. traditional, was also included in the CYCIS.

The CCTS contained information on childcare assistance (CCA) issued via DCFS on a monthly basis from 1-60 months of child age. It included information on type of care purchased with the assistance and date of assistance receipt for every monthly payment through June, 2010. All foster parents in Illinois are eligible to receive childcare assistance, regardless of family income or their employment status. It is important to note that CCA provided funds directly to the childcare provider, rather than in the form of a voucher to the foster parent. The merged CCTS/CYCIS Illinois dataset contains a total sample size of 21,320 children.

**Sample**

The sample for this study consisted of 18,944 of the 21,320 children from the merged dataset who entered foster care in the state of Illinois prior to their fifth birthdays and remained in foster care for at least three months during the study time frame given the lag that often exists, following foster care placement, for families to receive childcare assistance. Approximately half of these children were male (52%). With regard to race/ethnicity, half of the children were African American (52%), 39% were white, 6% were Hispanic, and the remaining 3% were categorized as "other" race. In addition, 16% of these children had been diagnosed with a disability, according to DCFS records. Of these 18,944 children, 3,922 (21%) had caregivers who used childcare assistance at some point prior to their fifth birthday. However, only 2,028 children (11% of the study sample) had foster parents who used childcare assistance while they were in foster care. Of the 18,944 children under the age of five in this sample, 15,462 were infants and toddlers (under age 3), and 3,686 were preschoolers (age 3-5) when they entered foster care.
Measures

The predictor variables for the primary analysis consisted of whether a child’s foster parent used childcare assistance (CCA), duration of CCA receipt, and type of childcare that was purchased for the foster child in the study sample. CCA use was determined by utilizing the monthly data (Yes/No) from the Child Care Tracking System in conjunction with entry and exit dates into foster care. Children were considered to have experienced CCA supported childcare while in foster care if at least one month of CCA use fell between their entry and exit dates in foster care. Duration of CCA was measured by calculating the total number of months in foster care during which a child’s foster parent used CCA. The type of care variable indicated whether the childcare being purchased was center care, family day care, or informal care. All types of care were licensed or licensed exempt. Informal care was care provided in the recipient’s own home or another family home for less than 8 children and fewer than four unrelated children. Family day care was care regularly provided for more than 8 children in a family home or less than 3 children in a facility other than a family home. Finally, center-based care was care regularly provided in a facility other than a family home for three or more children (Illinois Action for Children, 2010). It is possible that some foster parents combined CCA funded arrangements with Head Start, pre-K or other programs (Thomas, Fowler, Cerasone, & Rothenberg, 2011); however, the type of care variable in the CCTS does not reflect use of these non-CCA funded arrangements. Finally, the outcome variable for the primary analysis (placement disruption) was created using data from the CYCIS on start and end dates for the initial foster care placement and whether a placement disruption occurred.

Demographic information from the CYCIS was used in secondary analyses to predict foster parents’ use of CCA as well as duration of CCA use and type of care being purchased. Specifically, the following variables were used: child age at entry into foster care, race, gender and disability status, and whether the child was ever in a kinship care foster placement. Kin arrangements are those in which children were placed with adults who are related to them (e.g. grandparents, aunts, older siblings) who are not necessarily licensed by the state to provide foster care, in contrast to traditional arrangements that
involve the placement of a child with a non-relative who is licensed to provide foster care. These
demographic variables were also used as controls in the primary analysis.

**Data Analysis**

Initial analyses examined predictors of childcare assistance use among foster parents. Specifically, logistic and multinomial logistic regressions were utilized to determine the contribution of child gender, race, disability status, age at entry into foster care, and type of foster care placement (kin vs. other) to the likelihood that foster parents used CCA for a given child while in foster care and to determine whether the assistance was used to purchase center, family day care, or informal childcare arrangements, as well as the duration of their CCA use (OLS).

I then turned to the primary analyses aimed at examining whether use of childcare assistance was associated with foster placement stability. Given the skewed nature of the distribution of error terms that resulted from the extremely high placement stability in the sample, survival analysis, using a Cox proportional hazards model (Cox, 1972; Cox 1975; Willett, Singer, & Martin, 1998), was employed to estimate the impact of (1) CCA use, (2) duration of CCA use, and (3) type of childcare purchased with the assistance on the risk of placement disruption over time (Willett et al., 1998). Unconditional models were run first. Then, two sets of control variables were added step-wise to the models. Structural child welfare variables (child age at entry into foster care and type of foster care placement) were added first and then child demographic variables (race, gender, disability status) were added to the final model. Finally, two interaction terms were added separately to the model to determine whether the impact of CCA use varied by age of entry into foster care or by type of foster care placement (ever kin vs. all non-kin).

A final analysis was run based on results from these analyses to further explore the relationship that emerged between the impact of CCA receipt on the likelihood of placement disruption and child age of entry into foster care. Specifically, I examined, in separate models, whether the effect of CCA use on placement stability differed for infants and toddlers (those who entered foster care before 3 years of age) and preschoolers (those who entered foster care between the ages 3 and 5).
Results

Descriptive Statistics

The average age of entry into foster care for the 18,904 children in this study was 1 year and 5 months, with a range from birth to 4 years and 11 months (see Table 8 for a comparison of children who entered foster care as infants/toddlers or as preschoolers). Their average duration of time in foster care was three years, with a range from 3 months to 12 years and three months (children are eligible for CCA until age 13 and were followed in this study until they exited foster care). Forty-one percent of all children had experienced at least one kinship foster care placement, while the remaining children were never placed with kin. Of those placed with kin, 6.8 percent had also experienced a traditional foster placement. The total number of placements ranged from one to seven, with 11% of all children (7.2% of infants and toddlers, 16% of preschoolers) experiencing at least one placement disruption. Children who did experience multiple placements averaged 2.1 placements while in foster care ($SD = 0.337$).

Only 11% of the sample (8.6% of infants and toddlers, and 14% of preschoolers) had been in the care of foster parents who used childcare assistance. Among these children, 51% were enrolled in informal care, 20% were enrolled in center-based care, and 29% were enrolled in family day care. On average, assistance was used for 13 months with a range from 1 to 56 months.

Descriptive Predictors of CCA receipt

Table 9 presents results of the logistic regression analyses to determine the contribution of child gender, race, disability status at entry into foster care, and type of foster care placement (kin vs. other) to the likelihood that the child’s foster parent used CCA. Children who entered foster care as preschoolers were 27% more likely than those who entered as infants/toddlers to experience CCA supported childcare while in foster care ($\beta = 0.239$ per year, $SE = 0.015$, $p < 0.001$), as were African American children and children of “other” race ($54\%$ and $57\%$ more likely than white children, $\beta = 0.434$, $SE = 0.052$, $p < 0.001$ and $\beta = 0.463$, $SE = 0.141$, $p = 0.001$, respectively). Children with diagnosed disabilities were 42% less likely to experience CCA supported childcare while in foster care than were
typically developing children ($\beta = -0.539, SE = 0.079, p < 0.001$). Children who were ever placed with kin were 41% more likely than those who were only placed in traditional foster care placements to experience CCA childcare ($\beta = 0.344, SE = 0.050, p < 0.001$).

Table 8: Comparison of Children who Entered Foster Care as Infants/Toddlers and Preschoolers.

<table>
<thead>
<tr>
<th></th>
<th>Infants and Toddlers</th>
<th>Preschoolers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at foster care entry (m)</td>
<td>10 (11) mos.</td>
<td>47 (7) mos.</td>
</tr>
<tr>
<td>Time in foster care (m)</td>
<td>36 (20) mos.</td>
<td>34 (20) mos.</td>
</tr>
<tr>
<td>Ever Kin Care</td>
<td>37%</td>
<td>56%</td>
</tr>
<tr>
<td>Placement Disruption</td>
<td>7.2%</td>
<td>16%</td>
</tr>
<tr>
<td>CCA Receipt</td>
<td>8.6%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Subgroup of Children receiving CCA

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of CCA Receipt</td>
<td>11 (10) mos.</td>
<td>18 (13) mos.</td>
</tr>
<tr>
<td>Center Care</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Family Day Care</td>
<td>32%</td>
<td>23%</td>
</tr>
<tr>
<td>Informal Care</td>
<td>48%</td>
<td>59%</td>
</tr>
</tbody>
</table>

*Note: * $p<.05$, **$p<.01$, ***$p<.001$*
Table 9: Logistic Regression: Contribution of Child Demographics and Foster Placement Type to CCA Use.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$\beta$</th>
<th>SE</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at foster care entry</td>
<td>0.239***</td>
<td>0.015</td>
<td>1.270</td>
</tr>
<tr>
<td>Ever Kin Care</td>
<td>0.344***</td>
<td>0.050</td>
<td>1.412</td>
</tr>
<tr>
<td>Black</td>
<td>0.434***</td>
<td>0.052</td>
<td>1.543</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-0.226</td>
<td>0.123</td>
<td>0.798</td>
</tr>
<tr>
<td>Other</td>
<td>0.463**</td>
<td>0.141</td>
<td>1.568</td>
</tr>
<tr>
<td>Male</td>
<td>0.021</td>
<td>0.048</td>
<td>1.022</td>
</tr>
<tr>
<td>Disability</td>
<td>-0.539***</td>
<td>0.079</td>
<td>0.583</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.860***</td>
<td>0.061</td>
<td></td>
</tr>
</tbody>
</table>

Note: * $p<.05$, **$p<.01$, ***$p<.001$

Predictors of CCA duration and type of care used

OLS regression analyses revealed that duration of CCA use for the population of children whose foster parents used CCA ($n = 2,028$) was predicted by child age of entry into foster care, type of foster care placement, and child ethnicity. Children who entered foster care at an older age experienced 1.8 additional months of CCA supported childcare per year ($SE = 0.170$, $p < 0.001$). Children who were ever in kinship foster care placements also experienced more months of CCA childcare ($\beta = 1.343$, $SE = 0.498$, $p = 0.007$) than children who were only placed in traditional foster care, as did African American children ($\beta = 2.283$, $SE = 0.523$, $p < 0.001$) and children categorized as “other” race ($\beta = 4.285$, $SE = 1.417$, $p = 0.003$) when compared to white children. Neither child gender nor disability status predicted duration of CCA use.

With regard to the type of care supported by CCA, the age of the child at entry into foster care predicted the type of care that was purchased. Specifically, children were 19% less likely per year to experience center care ($\beta = -0.212$, $SE = 0.029$, $p < 0.001$) and 13% less likely to experience family day
care ($\beta = -0.121, SE = 0.028, p < 0.001$) than informal care if they entered foster care at an older age (years). Type of foster care placement (kin vs. traditional) did not predict the type of care the children experienced. Children’s race also predicted the type of CCA supported childcare they experienced. African American children were 77% less likely than white children to be enrolled in center care ($\beta = -1.136, SE = 0.091, p < 0.001$) and 53% less likely to be enrolled in family day care arrangements ($\beta = -0.732, SE = 0.080, p < 0.001$). Children categorized as other race were 57% less likely than white children to be enrolled in center based care ($\beta = -0.747, SE = 0.269, p = 0.006$). In contrast, Hispanic children were twice as likely as white children to be enrolled in center care ($\beta = 0.498, SE = 0.211, p = 0.018$). Boys were more likely (26%) than girls to be enrolled in center based care ($\beta = 0.206, SE = 0.086, p = 0.016$). Children with disabilities were 88% less likely to be enrolled in family day care if they received CCA ($\beta = -0.301, SE = 0.123, p = 0.015$) than typically developing children, but disability status did not affect enrollment in other forms of care.

**Impact of CCA receipt on risk of placement disruption**

Children whose foster parents used childcare assistance were significantly less likely to experience a foster placement disruption (see Table 10). No relationship was found between duration of CCA use or type of care and the likelihood of placement disruption. Children whose foster parents used CCA were about half as likely (47%) to experience a placement disruption in any given year than were children whose foster parents did not use childcare assistance ($\beta = -0.609, SE = 0.107, p < 0.001$). This relationship is displayed as a smoothed distribution of hazard estimates (probability of experiencing a placement disruption over time) for the children whose foster parents did and did not use assistance in Figure 9. The relationship between CCA use and risk of placement disruption was maintained when both sets of control variables (structural child welfare characteristics and child demographics) were added to the model. Children whose foster parents used CCA were 61% less likely per year to experience a placement disruption than were children whose foster parents did not when all controls were included in the model ($\beta = -0.953, SE = 0.107, p < 0.001$).
The relationship between CCA use and the foster child’s likelihood of experiencing a placement disruption was moderated by the age of the child at entry into foster care, but not by whether the child was in kin or traditional foster care ($\beta = -0.421, SE = 0.074, p < 0.001$). Given this significant interaction, the relationship between CCA use and placement disruption was examined separately for children who entered foster care as infants and toddlers and as preschoolers (see Table 10).

These subgroup analyses revealed no significant relationship between CCA use and placement disruptions for children who entered foster care as infants and toddlers ($\beta = -0.103, SE = 0.122, p > 0.10$). However, experiencing CCA supported childcare assistance was associated with an 80% reduction in the likelihood of placement disruption, in a given year, for children who entered foster care as preschoolers ($\beta = -1.615, SE = 0.222, p < 0.001$). This relationship is displayed as a distribution of hazard functions in Figure 10.

Figure 9: *Hazard Estimates of Placement Disruption over Time, by CCA Status.*
Table 10: Survival Analysis for Placement Disruption

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>SE</th>
<th>HR</th>
<th>β</th>
<th>SE</th>
<th>HR</th>
<th>β</th>
<th>SE</th>
<th>HR</th>
</tr>
</thead>
<tbody>
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<td><strong>Whole Sample</strong></td>
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<tr>
<td>CCA use</td>
<td>-0.609***</td>
<td>0.107</td>
<td>0.544</td>
<td>-0.943***</td>
<td>0.107</td>
<td>0.390</td>
<td>-0.953***</td>
<td>0.107</td>
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<td>Ever in Kin Care</td>
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<td>0.049</td>
<td>1.472</td>
<td>0.316***</td>
<td>0.049</td>
<td>1.371</td>
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<td>Age at foster care entry</td>
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</tr>
<tr>
<td>Male</td>
<td>0.043</td>
<td>0.048</td>
<td>1.044</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Black</td>
<td>-0.266***</td>
<td>0.051</td>
<td>0.766</td>
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<td>-0.663***</td>
<td>0.117</td>
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<tr>
<td>Other</td>
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<td>0.658</td>
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<tr>
<td><strong>Infants and Toddlers</strong></td>
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<tr>
<td>CCA use</td>
<td>-0.103</td>
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<td>0.902</td>
<td>-0.204</td>
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<td>0.816</td>
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<td>Other</td>
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<td><strong>Preschoolers</strong></td>
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</tr>
<tr>
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<td>0.199</td>
<td>-1.627***</td>
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<td>-1.638***</td>
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<td>Ever in Kin Care</td>
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<td>0.078</td>
<td>1.392</td>
<td>0.280***</td>
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<td>1.323</td>
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<td>0.077</td>
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<td></td>
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</tr>
<tr>
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<td>0.081</td>
<td>0.816</td>
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<tr>
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<tr>
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<td>0.231</td>
<td>1.064</td>
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<tr>
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</table>

Note: * p<.05, **p<.01, ***p<.001
Discussion

The most important finding to emerge from this study concerns the positive association between use of childcare assistance and stability of young children’s foster care placements. As hypothesized, having a foster parent who used childcare assistance was associated with a reduction in the likelihood of experiencing a placement disruption for young children in foster care. Also as hypothesized, this finding was largely attributable to children who entered foster care as preschoolers who, in turn, were more likely than those who entered foster care as infants/toddlers to experience placement disruptions and to have foster parents who used childcare assistance. Contrary to our hypothesis, the association between childcare assistance and placement stability was not moderated by whether the child was in a kin or traditional foster placement, nor was it linked to use of center-based arrangements.

This pattern of results needs to be placed in the context of the fact that, in the current study, only a very small share (11%) of the children were cared for by foster parents who used childcare assistance despite their categorical eligibility in Illinois – a finding that is of concern given the contribution of
assistance receipt to placement stability found for this sample. This percentage is notably lower than national estimates of federal childcare subsidy uptake (26%) among eligible low-income biological parents of young children (Collins, Layzer, & Kreader, 2007). While I cannot elucidate the reasons for such meager take-up of assistance, it is vitally important to explore this issue given its implications for both possible selection confounds and for public policy. It is possible that many foster parents are single parents who do not work and may not feel the need to enroll their foster children in childcare. It is also reasonable to hypothesize that child welfare caseworkers function under incentives to be conservative with their distribution of scarce childcare funds. Finally, foster parents may experience difficulty obtaining and retaining eligibility for childcare subsidies (Grobe, Weber, and Davis 2008; Adams, Synder, and Sandfort 2002), as well as locating providers who are willing to accept them, leading to low utilization of the program.

Use of childcare assistance was more likely when the foster parent was related to the foster child, which is in contrast to other evidence indicating that kin foster parents are less likely than traditional foster parents to receive support services (Ehrle & Geen, 2002; Geen, 2004). However, kin foster parents, in general, are also more likely to be economically and educationally disadvantaged, which may have led caseworkers to encourage their employment by referring them to childcare assistance. Assistance use was also more likely when the child was older, of African-American or other race, and did not have a disability. Evidence on biological parents indicates that, as with this sample of foster parents, minorities and those with typically developing children are more likely to use childcare (Loeb et al., 2004; Magnuson, et al., 2003; Fuller, Holloway & Liang, 1996) perhaps because they also have higher rates of employment, or because they have fewer social supports, leading to fewer informal childcare options. Case workers may prioritize employed foster parents for childcare assistance. Indeed, in Illinois, administrative rules give case workers discretion to determine “when a child in foster care can benefit from day care services” (Illinois PL 89.3.302.330, 1997).

Most of the children whose foster parents use childcare assistance were placed in informal childcare arrangements, rather than in family day care or childcare centers. This was the case for infants
and toddlers, and, to an even greater extent, for preschoolers, which runs counter to evidence on more representative samples of children (U.S. Census Bureau, 2010). This is of concern given prior evidence that center-based care is more strongly associated with positive cognitive and language outcomes than are other forms of care (Loeb et al., 2004; NICHD ECCRN 2000, 2005a) and calls attention to the need for center-based programs, especially state and federally funded care, to adopt non-traditional hours and offer transportation assistance to address the most common reasons parents select informal care. However, in this study, use of center care was not positively related to placement stability perhaps because of the quality and stability of the options that were readily available to the foster parents and perhaps because center care is often unable to accommodate non-standard work hours and is thus less helpful for foster parents seeking to sustain employment.

Also in contrast to other evidence was the finding that Hispanic foster children, but not African-American children or those of other races, were more likely than white children to be in center-based arrangements (Loeb et al., 2004; Magnuson et al., 2003; U.S. Census Bureau, 2010). The reasons for these inconsistencies cannot be identified in the current study. It is possible that foster parents who seek out center care, perhaps especially for minority children, utilize programs like Head Start or state pre-K rather than using childcare assistance programs. It is also possible that foster parents who use childcare assistance have jobs that entail non-standard hours and thus militate against the use of both center care and many family day care homes, or have trouble accessing center and family day care arrangements that will accept CCA funds. National estimates suggest that low-income families that receive childcare subsidies through the federal Child Care Development Fund rely heavily on center based care (U.S. Department of Health and Human Services, 2012). However, in Illinois, reliance on family day care and informal care is more common, suggesting that Illinois may have fewer centers available who are willing to take state assistance dollars (Illinois Action for Children, 2010) or that foster parents utilize friends or relatives in order to benefit financially from the assistance program. It may also be the case that foster parents who elect to place their foster children in Head Start or in preschool programs do not rely on the childcare assistance provided by the Division of Child and Family Services. If true, then rates of the
foster families’ use of center-based care in this sample – and especially the rates for preschool-age foster children – would be underestimated.

In addition to the fact that the source of childcare assistance for which I had data precluded inclusion of Head Start and state preschool arrangements in our examination of type of care, this study has additional limitations. Primary is the possible role of selection effects in the association between childcare assistance and placement stability. While this association was highly significant and became even stronger when I controlled for child welfare characteristics and child demographics, it is possible that unmeasured dimensions of the foster parents or of these children’s lives played a role in this finding. For example, more competent and stable foster parents may also be more motivated to seek and more capable of obtaining childcare assistance. With regard to the larger research agenda regarding the interface between child welfare and ECE policies, this study was able to address only a small, albeit important question given the lack of data regarding the quality or stability of the childcare arrangements for which the childcare assistance was used.

A research agenda built around developing a better understanding of the relationships between publicly funded ECE experiences, child welfare (foster care) experiences, and child development for young foster children has the potential to inform policy and practice at the intersection of ECE. This study is the first to explore the role of childcare assistance in the lives of foster children and the adults who care for them. The results from this study point to the potential of childcare assistance to facilitate placement stability and, thus, potentially benefit the development of foster children. Future research that minimizes selection bias and explores the role of quality, dosage, and stability of these experiences will be critical to informing efforts to integrate services for promote the well-being of these vulnerable young children.
CHAPTER IV: Childcare Selection in the Context of Foster Care: A Survey of Maryland Foster Parents.

It is clear from the empirical and theoretical literatures that bear on the developmental outcomes associated with poverty, maltreatment, and other sources of toxic stress (see chapter I) that young children who enter foster care are at-risk for developing a myriad of physical, social-emotional, and cognitive/academic problems. I have also argued that early care and education (ECE) has the potential to either improve the lives of at-risk children or to exacerbate the many risks they face. Children’s ECE experiences affect self-regulation, academic achievement, and psychosocial functioning, beginning in early childhood and lasting through adolescence (Campbell et al., 2004; Reynolds, et al., 2003; Schweinhart et al., 1993, Schweinhart, 2004; Vandell et al., 2010). Extensive research indicates that the magnitude and direction of these developmental effects depend on specific features of the care they receive (Ahnert, Pinquart & Lamb, 2006; Phillips & Lowenstein, 2011). Children who experience center-based (including HS and pre-K) and stable arrangements tend to demonstrate better cognitive and language outcomes than children who experience informal and unstable arrangements (Adams & Rohacek, 2010; Belsky et al., 2007; Burchinal, Roberts, Nabors, & Bryant, 1996; Burchinal et al., 2000, 2010; Coley et al., 2006; Gormley et al., 2008; Herbst & Tekin, 2010a, 2010b; McCarthy et al., 2007; Peisner-Feinberg & Burchinal, 1997; Tran & Weinraub, 2006). The evidence regarding social developmental outcomes is more complex, as discussed in chapter I, with outcomes varying by the risk status of the child and by whether the ECE the child attends is a community-based childcare center or a program like Head Start (Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b; Ryan, et al., 2011; Phillips, et al., 1994; Phillips & Lowenstein, 2011; U.S. Department of Health and Human Services, 2005, 2006).

Yet, prior to the studies presented in chapters II and III, the existing literature on ECE and on child welfare services fell short of offering even basic descriptive data about the ECE experiences of
foster children. This study augments the evidence regarding predictors of ECE experiences and the role of assistance receipt presented in chapters II and III by exploring the contribution of foster parent beliefs and preferences, in addition to the contribution of foster parent and child characteristics, to the ECE selection process. It is most appropriately viewed as hypothesis generating research given the small and unrepresentative sample.

Use of ECE

The literature exploring predictors of ECE use for the general population suggests that parent demographic characteristics play an important role. It is no surprise that employment is the strongest predictor of enrollment of children under the age of five in ECE (West, Hausken, & Collins, 1993). Nonetheless, many children of non-employed mothers are also in care (Hofferth, Brayfield, Deich, & Holcomb, 1991). Family income does not consistently predict the likelihood of selecting non-parental care (Hofferth, et al., 1991) for employed or unemployed parents, perhaps as a result of extensive access to public childcare subsidies and programs for low-income families, as well as the availability of care by relatives, for example, that may not entail payment. Data from the NICHD Early Child Care Research Network, for example, documented that high-income and impoverished families were equally likely to place their young children in non-parental care (NICHD ECCRN, 1997). Exploration of the role of maternal education, on the other hand, has consistently demonstrated that more highly educated mothers are more likely utilize care (Fuller, et al., 1996; Huston, et al., 2002; West et al., 1993), perhaps because they are more likely to work and may also be more likely to value the educational benefits of ECE. In addition, race/ethnicity predicts use of ECE, with African American families being the most likely to utilize non-parental care, followed by white families, and Hispanic families being the least likely to use ECE (Hofferth, West, Henke, & Kaufman, 1994).

Type of ECE

Perhaps an even more important goal than understanding the factors that lead families to use non-parental care is the task of uncovering factors that lead families to choose different types of care given documented associations between center care, especially the quality and the extent of exposure (number
of hours in care) that children experience, and both positive (cognitive and language) and negative (social) developmental outcomes (Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Burchinal et al., 1996; Burchinal, et al., 2000; Gormley, et al., 2008; Gormley, et al., 2008; Loeb et al., 2004; NICHD-ECCRN, 2006; Peisner-Feinberg & Burchinal, 1997). Researchers have documented that many factors contribute to the selection of center care over family day care or informal childcare arrangements.

Demographic characteristics such as ethnicity, income and education (Huston, Chang, & Gennetian, 2002; Fuller et al. 1996) have been linked to the type of care that parents select. Hispanic families, in particular, have low rates of center-based care selection, suggesting a role for cultural preferences (Hofferth, et al., 1994; Liang, Fuller, & Singer, 2000). Highly educated and high income mothers are more likely to select center care than their less educated and low-income counterparts (Fuller, Holloway, & Liang, 1996).

In addition to these demographic factors, research has demonstrated that the quantity and quality of care available (Adams & Rohacek, 2002; Kisker, Hofferth, Phillips & Farquhar, 1991, Fuller & Liang, 1996; Singer, Fuller, Keiley, & Wolf, 1998) are related to the selection of center care. When center care is both easy to access and of high quality, parents are more likely to use it. Finally, personal and cultural preferences or beliefs about differing arrangements (Liang, Fuller, & Singer, 2000), as well as constraints including convenience, hours of operation, and affordability (Blau & Hagy, 1998; Hofferth & Wissoker, 1991; Johansen, Leibowitz, & Waite, 1996; Peyton, Jacobs, O’Brien, & Roy, 2001), have been linked to the selection of informal and family daycare.

**Number of Arrangements**

Nearly 15% of children younger than five years regularly attend more than one childcare arrangement (Morrissey, 2009). The use of multiple arrangements is one form of childcare instability that may negatively affect child development (DeSchipper, Tavecchio, Van Ijzendoorn, & Van Zeijl, 2004). Stability of care has strong and consistent positive impacts on children’s cognitive and social outcomes (Loeb et al. 2004); instability predicts poorer language comprehension (Tran & Weinraub, 2006) and is associated with less competent play, poorer social behavior, problems adjusting to school, and a higher
risk of severe externalizing problems (for a review see Morrissey, 2009). Further, research suggests that instability seems likely to present particular problems for more vulnerable children (Adams & Rohacek, 2010). Thus, it is also extremely important to understand factors that may contribute to the use of multiple arrangements among foster families. Childcare instability, including the use of multiple arrangements, is most common among low-income families (Adams & Rohacek, 2010). Use of multiple arrangements has also been linked to the same practical constraints (convenience, hours of operation, and affordability) that predict the use of non-center based arrangements (Hofferth & Wissoker, 1991; Johansen, Leibowitz, & Waite, 1996; Peyton, Jacobs, O’Brien, & Roy, 2001).

**Public Assistance and the Maryland Policy Context**

An understanding of the predictors of ECE use, selection of type, and reliance on multiple arrangements is relatively well-developed for the general population of mothers selecting ECE for their young children. Recent research has focused on the potential of public assistance programs (e.g. Child Care Development Fund [CCDF] subsidies) to alter parental choices and specifically encourage the use of center-based arrangements (Brooks, 2002; Tekin, 2005; Johnson, et al., 2011). Indeed, the role of public assistance in ECE decision-making is an important consideration, especially for vulnerable children and families. While research has documented the contribution of childcare subsidies to the selection of center-based care, they have also been linked to greater instability (including use of multiple arrangements) in arrangements for low-income families (Adams, Snyder, & Sandfort, 2002; Chaudry, 2004; Davis, Grobe, & Weber, 2010; Ha, & Meyer, 2010; Grobe et al., 2008; Meyers, Heintze, & Wolf, 2002; Washington, 2008). Thus it is important to consider the role of public assistance (in all forms) in encouraging both the use of center-based care and, perhaps, reliance on multiple arrangements. In many states, including Maryland, foster parents actually are not eligible to receive CCDF subsidy payments to support their foster children’s childcare arrangements (Research Connections, 2009). However, the overall policy climate across the nation, and in Maryland, specifically, in recent years has focused on increasing access to and the quality of ECE experiences for all children (US-DHHS, 2011).
Current Study

The current study focused on identifying predictors of childcare use, selection of center care, and use of multiple arrangements among foster parents caring for children under five years of age in the state of Maryland. Of particular interest was the relationship between foster parent type (kin versus non-kin) and (1) receipt of public assistance, given the previously documented scarcity of services for kinship foster parents (Ehrle & Geen, 2002; Harden, 2004); and (2) the likelihood of selecting center-based care, given research that identifies this form of ECE as carrying important developmental consequences (See chapter I).

Methods

Sample

The sample is composed of 84 Maryland foster parents who were caring for a child under the age of five as of March 15th, 2011. Participants filled out a mailed survey and their responses were merged with data from the Maryland Department of Human Resources (DHR) Children’s Electronic Social Services Information Exchange (CHESSIE), which contained child demographic and foster care placement information. Preliminary analyses compared the respondents (n = 84) with the non-respondents (n = 116) on child demographics and reasons for removal, and found that respondents and non-respondents did not differ on available variables.

On average, foster parents in this sample were 47.6 years old, and 12% were older than age 60. The majority of foster parents were nonwhite (60.7%), were employed (55.4%), had incomes greater than $30,000 (69%), and were at least high school educated (81.5%). Twenty-one percent of the children in the sample were infants (age less than 1 year), approximately half were toddlers (ranging from 1 to 3 years of age; 51.2%), and the remaining children were preschoolers (ages 3-5 years; 27.4%). The majority of the sampled children (78.6%) were nonwhite, 50% identified as exclusively African American, and an additional 9.5% identified as part African American. Gender was evenly split in the sample (50% female). The majority of children were removed from their biological homes due to neglect (n=60) rather than as the result of physical (n=5) or sexual abuse (n=1) or some other reason (e.g.
domestic violence) (n= 18). Finally, the sample was split evenly between kin (50%) and non-relative foster parents (50%).

Measures

Survey. A 15-question foster parent survey was designed to collect demographic information about foster parents (age at sampling, race/ethnicity, employment, household income, education level, and relationship to child) as well as descriptive information about the ECE arrangements they were using for the target foster child (number, type, payment method, and reasons for selection). The survey was designed to take less than 15 minutes to complete. It was derived from parent interviews in the NICHD Study of Early Child Care (NICHD-ECCRN, 2006), a survey used in the Durham Child Health and Development Study (Pungello & Kurtz-Costes, 2000), and information gleaned from a focus group of case workers in Montgomery County, MD convened on February 5th, 2010.

Administrative Data. Additional data on the participating foster families was imported from CHESSIE. Variables used in this study included demographic information on the foster children (ethnicity; disability status; age at removal from biological home, and age at placement into foster care) as well as factors instigating removal from the biological home: abandonment, behavior, neglect, physical abuse, sexual abuse, parental relinquishment, biological parent incarceration, drug addiction, alcohol addiction, and death.

Variables of interest. Foster parents reported whether the target child was in ECE, and if so what type of arrangement was being used as a primary arrangement (at least 10 hours per week in the care of an individual other than the foster parent(s)) and as secondary and tertiary arrangements (if applicable). The options for type of care were: center, day care or nursery, in someone else’s home, in own home, and Head Start. Number of arrangements was calculated based on information provided by foster parents about all childcare arrangements they were using. Foster parents were also asked to identify their relationship and the child’s relationship to the childcare provider(s) (spouse, sibling, friend/neighbor, aunt/uncle, parent, grandparent or unrelated adult). Two-thirds of foster parents in this sample were utilizing some form of childcare at the time of the survey (n = 52, 62%). Type of care was coded as
home-based ($n = 21$) or center/nursery/ Head Start ($n = 31$). Number of arrangements was coded as either one or more than one (only six foster parents reported a tertiary arrangement).

Foster parents were then asked to identify how the primary childcare arrangement was being funded. They could select any/all of the following options: paid out of pocket ($n = 12$), reimbursed by the child welfare agency ($n = 5$), paid for directly by an agency ($n = 20$), childcare subsidy ($n = 6$), and free ($n = 10$). Nearly half of all foster parents reported more than one method of payment ($n = 21$). These payment options were collapsed to create three mutually exclusive payment variables: free, paid solely out of pocket, and received any public assistance (subsidy and agency payments).

Foster parents were asked to rank their top three reasons for selecting the primary childcare arrangement currently used for their foster child. Foster parents could select any/all of the following options: cost of the arrangement ($n = 13$), convenience of hours ($n = 16$), convenience of location ($n = 21$), availability of childcare options ($n = 7$), quality of the physical space ($n = 16$), quality of the provider/ teacher ($n = 33$), quality of the program ($n = 17$) and personal preference for a particular type of care ($n = 14$). These selection variables were collapsed into cost, convenience (including convenience of hours, location, and availability), quality, and preference.

Foster parents were asked to rate their perception of both the quantity and quality of childcare options available in their community. These ratings used likert scales ranging from 1 (very few options/ very few high quality options) to 5 (many options/ almost all options are high quality). Both of these rating scales were then collapsed to reflect perception of high quantity (4, 5) compared to low quantity (3 and under), and perception of high quality (4, 5) compared to low quality (3 and under). Finally, foster parents were asked to indicate whether, in an ideal world without fiscal or employment constraints, they would choose to place their foster child in ECE, or keep him/her at home.

**Procedure**

From the monthly inventory of their child welfare system ($N = 657$ foster parents), DHR identified a sample of all foster parents caring for a child under the age of five as of March 15th, 2011. DHR staff stratified the sample by licensed (including both kin and non-relative) providers and non-
licensed (i.e., only kin) providers. One hundred caregiver-child pairs were randomly selected from each group \((N = 200)\) and these 200 caregivers were mailed a copy of the optional survey that was incentivized with a $10 gift card. Since initial response rates were low (32%), a second wave of surveys was mailed to those who did not initially respond (see Brennan & Charbonneau, 2009). Ultimately, 84 foster parents responded to the survey (42% response rate).

The final dataset was created by merging the survey responses \((N = 84)\) with the corresponding demographic information from the administrative dataset using the unique identification numbers assigned to each foster family by DHR at the time of sampling.

**Analytic Approach**

The first goal of this study was to explore the use of childcare within the context of Maryland’s foster care system. To address this goal, given the small sample size, preliminary chi-squares and t-test analyses were used to examine whether characteristics of the children and of the foster parents (including type of foster care arrangement [kin vs. non-kin], and parental beliefs, preferences, and payment method) differed by whether foster parents were using childcare, and by characteristics of the childcare they were using (center vs. other, and multiple vs. one arrangement). Logistic regressions were then utilized to examine the joint influence of the significant predictors identified in the chi-square analyses and t-tests. Logistic regressions were estimated separately for each of the three outcome variables (childcare use, type of care, and number of arrangements) in order to conserve power.

**Results**

**Descriptive Findings**

Two-thirds of foster parents in this sample were utilizing some form of childcare at the time of the survey \((n = 52, 62\%)\). Among these 52 foster parents, 31 (60%) had placed children in center care (including 3 in Head Start), 14 (27%) had placed children in family day care, and 7 (13%) children were being cared for by a non-relative in the foster parent’s home as a primary arrangement. Among foster parents whose children were in childcare arrangements, 13 children or (25%) were in a secondary arrangement (2 in centers, 5 in family daycare homes, 6 in own home). Exactly 62% \((n = 26)\) of children
in both kin and traditional foster placements were in childcare. 73% of children in traditional foster homes were in center-based care (n = 19). A significantly smaller proportion (46%) of children in kinship foster placements were in center-based care, ($\chi^2 (1, n = 52) = 3.914, p = .048$). Among foster children in childcare, 19% of children in traditional placements were in a secondary arrangement (n = 5), and 31% of children in kinship placements were in a secondary arrangement (n = 8), ($\chi^2 (1, n = 52) = 0.9231, p = .337$).

With regard to the reasons for selecting their primary ECE arrangement, a majority of foster parents identified quality of the care (73%) and convenience (57%). In addition, 27% of foster parents identified a personal preference for the type of care they were using, 25% identified cost, 14% identified availability, and only one foster parent identified continuity of care from previous home as a reason for selecting the current ECE arrangement. Kin foster parents were more likely to identify cost as a reason for selecting the primary care arrangement ($\chi^2 (1, n = 51) = 4.699, p = 0.030$) and traditional foster parents were more likely to identify personal preference for a specific type of arrangement ($\chi^2 (1, n = 51) = 3.878, p = 0.049$).

More than half of all foster parents (54%) reported receiving some form of public assistance to support their use of ECE. Nineteen percent of foster parents reported that the arrangement they used was free of charge, and the remaining 27% reported that they paid the full cost of the ECE they used. Kinship foster parents were marginally less likely to report receipt of public assistance of any kind than were traditional foster parents (including childcare subsidies and agency assistance), ($\chi^2 (1, n = 52) = 2.786, p = 0.095$). Finally, more than half of foster parents reported a preference for placing their foster child in some form of childcare rather than keeping them at home (61%). At the same time, fewer than half of foster parents perceived that there was a high quantity of ECE options in their community (44%) and that the available options were of high quality (47%).
Predictors of ECE Experiences

ECE use. Individual chi-square analyses revealed that foster parent employment ($\chi^2 (1, n = 83) = 30.921, p < 0.001$), and foster parent age (above 60) ($\chi^2 (1, n = 82) = 2.691, p = 0.100$) were each independently associated (at least marginally) with the use of ECE. These variables were not significantly correlated (see Table 11). The logistic regression revealed that foster parent employment was the strongest predictor of ECE use. Table 12 displays these results. Children whose foster parents were employed were twenty times more likely to be enrolled in ECE ($\beta = 3.002, SE = 0.637, p < 0.001$) than those whose parents were not employed. In addition, elderly foster parents were nearly 80% less likely to enroll their foster children in ECE than younger parents, but this effect was only marginally significant ($\beta = -1.548, SE = 0.921, p = 0.093$).

Table 11: Inter-correlation Matrix for Predictors of ECE Use, Type, and Number of Arrangements.

<table>
<thead>
<tr>
<th>Child Age</th>
<th>Employed Foster Parent</th>
<th>Foster Parent less than HS educated</th>
<th>Low-Income Foster Parent</th>
<th>Kinship Foster Parent</th>
<th>Elderly Foster Parent</th>
<th>Foster Parent Perception of High Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Age</td>
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<td></td>
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<td></td>
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<tr>
<td>Employed Foster Parent</td>
<td>0.088</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foster Parent less than HS educated</td>
<td>-0.139</td>
<td>-0.033</td>
<td>1.000</td>
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<td></td>
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<tr>
<td>Low-Income Foster Parent</td>
<td>-0.059</td>
<td>-0.390***</td>
<td>0.123</td>
<td>1.000</td>
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<td></td>
</tr>
<tr>
<td>Kinship Foster Parent</td>
<td>-0.114</td>
<td>-0.114</td>
<td>0.280*</td>
<td>0.458***</td>
<td>1.000</td>
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</tr>
<tr>
<td>Elderly Foster Parent</td>
<td>0.160</td>
<td>-0.051</td>
<td>0.014</td>
<td>0.013</td>
<td>0.070</td>
<td>1.000</td>
</tr>
<tr>
<td>Foster Parent Perception of High Quality</td>
<td>-0.032</td>
<td>-0.185</td>
<td>-0.026</td>
<td>-0.184</td>
<td>-0.062</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Notes: *p < .05, **p < .01, ***p < .001

Use of center-based care. Individual t-test and chi-square analyses revealed that child age ($t(52) = -2.231, p = 0.030$), foster parent relationship to child($\chi^2 (1, n = 52) = 3.914, p= 0.048$), foster parent
education level ($\chi^2(1, n = 52) = 4.706, p = 0.030$) and income ($\chi^2(1, n = 52) = 4.476, p = 0.034$), and foster parent perception of the quality of ECE available in the community ($\chi^2(1, n = 52) = 3.502, p = 0.061$) were each independently associated with the use of center-based care. Examination of the Inter-correlation matrix for these variables (see Table 11) did reveal significant, moderate correlations between foster parent relationship to child and both foster parent education and income.

Table 12: Predictors of ECE Experience for Foster Children in Maryland

<table>
<thead>
<tr>
<th></th>
<th>ECE Use</th>
<th>Center-based Care</th>
<th>Multiple Arrangements</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>SE</td>
<td>OR</td>
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<tr>
<td><strong>Foster Parent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>3.002***</td>
<td>0.637</td>
<td>20.12</td>
</tr>
<tr>
<td>Elderly</td>
<td>-1.548†</td>
<td>0.921</td>
<td>0.213</td>
</tr>
<tr>
<td>Education HS -</td>
<td>1.790*</td>
<td>0.852</td>
<td>5.988</td>
</tr>
<tr>
<td>Low Income</td>
<td>-1.006</td>
<td>0.869</td>
<td>0.366</td>
</tr>
<tr>
<td>Kin</td>
<td>-0.260</td>
<td>0.740</td>
<td>0.771</td>
</tr>
<tr>
<td><strong>Child</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (y)</td>
<td>0.436†</td>
<td>0.265</td>
<td>1.547</td>
</tr>
<tr>
<td><strong>Beliefs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Quality</td>
<td>1.424*</td>
<td>0.717</td>
<td>4.153</td>
</tr>
<tr>
<td>Care Available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.530</td>
<td>0.508</td>
<td>-0.552</td>
</tr>
</tbody>
</table>

Notes: † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Nonetheless, a logistic regression including all of these variables, was estimated to determine the factors that were predictive of using center-based care in this sample. Logistic regressions revealed that the strongest predictor of utilizing center-based care was foster parents’ perception that most or all of the ECE arrangements in their community were of high quality. These parents were four times more likely to enroll their foster children in center-based care ($\beta = 1.424, SE = 0.717, p = 0.047$). Foster parent
education and child age were marginally predictive of using center-based care. The trends suggest that foster parents with a high school education or less may be less likely to utilize center-based care ($\beta = -1.626$, $SE = 1.001$, $p = 0.104$) than foster parents with higher levels of education, and older children may be more likely to be enrolled in center-based care ($\beta = 0.436$, $SE = 0.265$, $p = 0.100$) than younger children (See Table 12).

**Number of arrangements.** Individual t-tests and chi-square analyses revealed that only child age ($t(52) = 1.920$, $p = 0.061$) and foster parent education level ($\chi^2 (1, n = 52) = 7.091$, $p = 0.008$) were independently associated with the use of multiple childcare arrangements. Examination of the inter-correlation matrix for these variables revealed that they were not significantly correlated. Therefore, a logistic regression was estimated, which revealed that foster parent education was the strongest predictor of number of arrangements. Foster parents with a high school education or less were nearly six times more likely to use multiple childcare arrangements than foster parents with higher education levels ($\beta = 1.790$, $SE = 0.852$, $p = 0.036$). However, the association between child age and number of arrangements was no longer significant when foster parent education was accounted for (See Table 12).

**Discussion**

The results of this study are consistent with those of the studies presented in chapters II and III. They confirm that foster parent employment, education, and income are the strongest predictors of the ECE experiences of young foster children. As for all parents, employed foster parents were significantly more likely to utilize childcare than their unemployed counterparts. In addition, less educated foster parents were significantly less likely to utilize center-based arrangements and marginally more likely to utilize multiple childcare arrangements than their more highly educated counterparts.

These exploratory findings also, however, add to this knowledge base. Specifically, our finding that older foster parents were less likely to use childcare was unique to the foster parent population but is likely linked to previous research that documents lower levels of employment, education, and social support among older foster parents (Harden, 2004; Minkler & Fuller-Thomson, 1999). Surprisingly,
neither foster parent’s self-reported reasons for selecting their ECE arrangement nor payment method predicted the use of center-based care or multiple arrangements.

Despite the lack of evidence in this study of an association between foster parent relationship to child (kin vs. non-kin) and childcare use, this study did find differences in the education, income, and likelihood of public assistance receipt among kinship caregivers as compared to traditional foster parents. Kinship caregivers reported lower incomes and less educational attainment than traditional foster parents, yet they were also less likely to receive public assistance for their childcare arrangements (despite their greater need). This trend may be the result of difficulties foster parents face in obtaining and retaining eligibility for public assistance for ECE programs (Grobe, et al., 2008; Adams, et al., 2002). On the one hand, this finding is not surprising given previous research documenting a dearth of services for kinship foster parents (Harden, 2004; Cuddeback, 2004). On the other hand, it is contrary to the findings of the other two studies in this dissertation (Chapters II and III) which documented a greater likelihood that kinship foster parents would utilize Head Start and receive Childcare Assistance (CCA). Nonetheless, the evidence suggesting kinship foster parents in Maryland are at greater risk and are less likely to receive public assistance to fund their childcare is of concern given results from Chapter II that children in kinship foster care placements may actually be more apt to benefit from particular types of publicly funded ECE (e.g. Head Start).

This study also uncovered differences in the ECE selection process for kin and traditional foster parents. Kinship foster parents were more likely to select ECE based primarily on cost, while traditional foster parents were more likely to select ECE based on their personal preferences regarding the ECE they wanted the foster child to experience. These measures of reasons for selecting care were not significant predictors of reliance on particular types of care, or of using multiple arrangements. They may, however, be important to understanding how efforts to encourage the selection of high quality care might differentially impact kinship and traditional foster parents. Specifically, kinship foster parents may be more limited by economic constraints affecting the childcare selection process. For this group,
encouraging use of high-quality (and generally more expensive) care is likely to require provision of financial assistance.

This study included questions about type of care, receipt of public assistance and the childcare selection process that have not been asked in national surveys and are not included in the administrative datasets that provide the majority of information on foster children. The results of this study augment the analyses of general childcare use at a national level and evidence on the role of a state-specific childcare assistance program presented in chapters II and III of this dissertation. While these results are interesting, the small sample size suggests a strong potential for Type II error, particularly for hypothesis tests that were conducted on the subsample of foster parents who utilized childcare. Nonetheless, this study offers critical insights into potentially important selection factors and provides a model for more explicit attention to the childcare selection process and constraints foster parents may face when seeking childcare, which should be replicated in larger surveys of children involved with the child welfare system.
Chapter V: Discussion and Implications for Research, Policy, and Practice.

This dissertation initiated a program of research at the intersection of the early care and education (ECE) and child welfare systems. The key findings of this dissertation are those that link ECE experiences to foster children’s developmental outcomes and foster placement stability. Although these studies are correlational, this dissertation is the first investigation to provide evidence that ECE plays a role in the well-being of children in the child welfare system and the stability of their foster care placements. This chapter summarizes these key findings, as well as the descriptive findings regarding the ECE arrangements of children who enter the child welfare system and the factors that are associated with reliance on ECE. This summary is followed by acknowledgement of the limitations of each study. The chapter concludes with a discussion of the implications of the collective findings for policy and practice, followed by recommendations for future research.

Key Findings

Results from my examination of the NSCAW (chapter II) suggest that ECE experiences are generally associated with improved development for children involved with the child welfare system. Yet, children receiving in-home services displayed different patterns of association between developmental outcomes and ECE experiences than did children in foster care, specifically those in kinship foster placements. Children receiving in-home services demonstrated more rapid developmental growth when they experienced ECE arrangements encompassing the full spectrum of potential programs. Preschoolers receiving in-home services demonstrated positive associations between enrollment in childcare arrangements, excluding Head Start, compared to children who did not experience ECE as preschoolers. For preschoolers in kinship foster care, in contrast, enrollment in Head Start was associated with positive developmental outcomes compared to preschoolers who did not experience ECE, while other childcare arrangements appeared to be less advantageous than not experiencing ECE at all. There was no relationship between ECE experiences and behavior problems over time for any of the subgroups of children (in home, traditional foster care, kin care) in the child welfare system.
These findings replicate substantial evidence regarding the potential of ECE to positively affect the developmental trajectories of young children (Belsky, et al. 2007; Campbell et al., 2002; Conyers et al., 2003; Gormley, et al., 2008; Loeb, Fuller, Kagan, & Carol, 2004; Lowenstein, 2009; McCartney et al., 2007; Phillips & Lowenstein, 2011; Phillips & Meloy, 2012; Schweinhart et al., 1993; U.S. DHHS, 2010; Bernal & Keane, 2011; Herbst & Tekin, 2010a, 2010b). Specifically, these findings indicate that experiencing childcare arrangements other than Head Start (as compared to not experiencing ECE) was associated with more rapid Expressive language development for preschoolers who remained with their biological parents despite being involved with the child welfare system. Importantly, this was not the case for preschoolers in kinship foster care, for whom positive growth was associated with enrollment in Head Start, but not with enrollment in other arrangements. Children in traditional foster care placements did not benefit significantly from ECE exposure, regardless of age or type of care. It is not clear why these inconsistencies emerged within the NSCAW sample. It is likely that “other childcare arrangements,” as measured in the NSCAW, varied widely with regard to both quality and stability of care, and that these unmeasured features of childcare – combined with unobserved selection effects – are responsible for the differing patterns.

The concept of biological sensitivity to context may also apply here (Belsky & Pluess, 2009; Boyce & Ellis, 2005; Phillips, Fox, & Gunnar, 2011; Phillips et al., in press). Biological sensitivity to context refers to the phenomenon in which some children are more susceptible to both positive and negative environmental influences than are other children. Children who are removed from the biological home and placed into foster care (and perhaps especially into kinship foster care) may experience levels of trauma that children who remain in their biological homes do not. These traumatic experiences and their developmental sequelae may make foster children more vulnerable to variation in the quality and stability of ECE settings, leading them to benefit more from programs like Head Start that are typically of higher quality than community-based childcare. This mechanism may also help to explain the differential patterns uncovered for the relationship between ECE experiences and developmental outcomes for foster children compared to those who remain in in-home care. Children receiving in-home services may be at
higher risk of continuing to experience compromised parenting if not on-going maltreatment. As such, these children may be primed to gain more from “other childcare” arrangements than children whose home environments have significantly improved as a result of foster care placement.

Disentangling these potential relationships is an important avenue for future research. Nevertheless, the detrimental social-emotional impacts associated with community-based childcare that some studies have documented (Bernal & Keane, 2011; Belsky et al., 2007; Herbst & Tekin, 2010a, 2010b; NICHD ECCRN, 2005; Vandell et al., 2010) were not confirmed in this study. Again, it is difficult to interpret the differing patterns of results across outcomes. Data on the quality and stability of care, not available within the NSCAW, will likely be revealing.

The most important finding to emerge from the Illinois study (Chapter III) concerns the positive association between receipt of childcare assistance and stability of young children's foster care placements. This finding was largely attributable to children who entered foster care as preschoolers who, in turn, were more likely to have foster parents who used childcare assistance. Contrary to my hypothesis, the association between childcare assistance (CCA) and placement stability was not moderated by whether the child was in a kin or traditional foster placement, nor was it linked to use of center-based arrangements. This finding may be interpreted as evidence that foster parents benefit personally and/or financially from the support that CCA provides and that these benefits are translated into greater stability for children who are placed in their homes. These results must also be interpreted in the context of the fact that, in Illinois, only a very small share (11%) of the children were cared for by foster parents who used CCA— a finding that is of concern given the contribution of assistance receipt to placement stability found for this sample. This percentage is notably lower than national estimates of federal childcare subsidy uptake (26%) among eligible low-income biological parents of young children (Collins, Layzer, & Kreader, 2007). While this study is not able to elucidate the reasons for such meager take-up of assistance, it is vitally important to explore this issue given its implications for public policy.
It is reasonable to hypothesize that child welfare caseworkers function under incentives to be conservative with their distribution of scarce childcare funds.

Another interesting finding was the relatively high rate of ECE use, especially Head Start enrollment, in the NSCAW sample (chapter II), despite the absence of specific provisions for foster child eligibility in Head Start and other ECE program policies (Meloy & Phillips, 2012). This finding is encouraging, especially given our results linking Head Start to improved cognitive development for children in kinship foster care, and highlights the importance of understanding factors that may lead foster parents to enroll their foster children in ECE, especially Head Start and other arrangements that are explicitly designed to support the development of children at risk. In Illinois (chapter III), most of the children whose foster parents used childcare assistance were placed in informal childcare arrangements, rather than in family day care homes or childcare centers. This was the case for infants and toddlers, and, to an even greater extent, for preschoolers, which runs counter to evidence from more representative samples of children that, as children move into the preschool years, reliance on center-based arrangements increases (U.S. Census Bureau, 2010). This is of concern given prior evidence that center-based care is more strongly associated with positive cognitive and language outcomes than are other forms of care (Loeb et al., 2004; NICHD ECCRN 2000, 2005a). However, in Illinois, use of center care did not promote placement stability to any greater extent than other types of care.

This suggestion is also supported by the most important finding to emerge from the Maryland foster parent survey (chapter IV). One of the goals of chapter IV was to understand the childcare selection process among foster parents, including the selection of center-based care. However, the finding that stands out from this study is that foster parent preferences and beliefs about childcare were not related to the selection process. It is unclear if this null finding is the result of a small sample size, or if foster parents really do constitute a special population of parents for whom (1) constraints on the selection process do not substantially vary, or (2) constraints do not ultimately affect selection of care. The results of chapter IV did, however, point to an important difference in the important considerations of kinship and traditional foster parents when selecting childcare. Kinship foster parents reported that they
selected the ECE they used because of cost more so than did traditional foster parents, while traditional foster parents were more likely to report that they selected their ECE arrangements based on personal preference. These results suggest that kinship foster parents may be especially in need of childcare funding assistance.

**Predictors of ECE experiences for Foster Children**

Predictors of ECE experiences were examined in all three studies that compose this dissertation. The findings regarding predictors of ECE experiences of foster children were not completely consistent across studies. Specifically, similar child and foster parent characteristics were associated with ECE use and type of ECE, across studies; however, the direction of these relationships differed substantially when comparing ECE experiences, as measured by the NSCAW, and childcare assistance receipt in Illinois. Nonetheless, some common predictors did emerge across the three studies, especially with regard to the NSCAW (Chapter II) and the study of Maryland foster parents (Chapter IV). Specifically, caregiver employment and education consistently predicted both the use of ECE and the type of ECE utilized. In the NSCAW, employed and more highly educated foster parents were more likely to utilize ECE. Similarly, in Maryland, employed foster parents were more likely to utilize ECE, and more highly educated foster parents were more likely to use center-based care. These results align with the literature on ECE use for the general population (NICHD-ECCRN, 1997; Phillips & Cabrera, 1996).

In addition, both the NSCAW and the Illinois data indicated that African American children involved in the child welfare system were more likely to experience ECE than white children. These findings are also consistent with the literature indicating that African American children are the most likely ethnic group to experience ECE (Loeb et al., 2004; Magnuson, et al., 2003; Fuller, Holloway & Liang, 1996). Finally, findings regarding the relationship between type of child welfare placement and ECE experiences were somewhat consistent. Children in foster care were more likely to experience ECE in the NSCAW sample than children receiving in-home services, while kin and traditional foster parents did not differ in their likelihood of utilizing ECE. Children in kinship foster placements were more likely to experience HS, which is consistent with the finding in Illinois that kinship foster parents were more
likely to receive CCA. These findings run somewhat counter to the literature that documents a dearth of services for kinship foster parents (Ehrle & Geen, 2002; Geen, 2004). However, given the fact that kinship foster parents, in general, are also more likely to be economically and educationally disadvantaged (Harden, 2004; Cuddeback, 2004), they may be more likely to meet eligibility requirements for Head Start than traditional foster parents. In addition, caseworkers in Illinois may intentionally encourage their employment by referring them to childcare assistance. It is also important to note that, in recent years, Illinois has been working consistently to improve child welfare-ECE linkages. These findings are encouraging given the greater risk associated with kinship foster placements, and the potential for ECE, specifically Head Start, to improve these foster children’s outcomes, as documented with the NSCAW data.

Other predictors of ECE use and type were less consistent. Specifically, the relationship between ECE use and type and child disability status, child age, and to a lesser extent child race/ethnicity, differed across studies—perhaps as a function of the different ECE experiences being measured. Children with disabilities were more likely to experience ECE, as measured by the NSCAW, than typically developing children, including Head Start. Yet, foster parents of children with disabilities were less likely to receive CCA in Illinois than foster parents of typically developing children. This may be the result of foster parents of children with disabilities accessing services via IDEA, which is not a possibility for foster parents of typically developing children. Nonetheless, these inconsistencies map directly onto the broader ECE literature that is also inconsistent. In some studies, children with disabilities are over-represented in ECE programs (Parish, Cloud, Huh, & Henning, 2005; Parish & Cloud, 2006), while others report under-representation of these children in ECE programs (Booth & Kelly, 1998, Booth-LaForce & Kelly, 2004; Warfield & Hauser-Cram, 1996). These findings suggest that, at least for foster children with disabilities, the likelihood of experiencing ECE may be linked to features of the ECE program being measured, specifically with regard to whether and how the care is publicly funded.

Child age was also an inconsistent predictor of ECE experiences across studies. Specifically, foster parents of older children were more likely to receive CCA but less likely to experience center-based
care in Illinois, while older children were more likely to be enrolled in center-based care in Maryland. The literature documenting ECE use in the general population suggests that older children are more likely to be enrolled in center-based care than younger children (Loeb et al., 2004; U.S. Census Bureau, 2010). Thus, the finding that this was not the case for children whose foster parents received CCA in Illinois is surprising and difficult to interpret. Perhaps these foster parents also care for young children and attempt to use a single ECE arrangement, or other constraints, such as cost and convenience may steer them away from center-based arrangements. Unfortunately, the Illinois data do not permit exploration of these, or other, possibilities.

Child race/ethnicity, although a consistent predictor of enrollment in ECE, did not consistently predict type of ECE across studies. In the NSCAW, African American foster children were more likely to be enrolled in Head Start. However, in Illinois, African American foster children were less likely to experience center care. Again, the reason for this inconsistency is unclear. The datasets defined “type” of ECE in somewhat different ways. The supply of Head Start and center-based care, along with other options, also likely differs across localities. But, again, the available foster care datasets do not provide the necessary data to examine these issues. Finally, several predictors of ECE experiences were unique to individual studies. Hispanic children in Illinois whose foster parents received CCA were more likely to experience center-based care than informal or family day care. This finding was not replicated in either of the other two studies and runs counter to previous evidence indicating that Hispanic families are among the least likely to utilize ECE, especially center care (Loeb et al., 2004; Magnuson et al., 2003; U.S. Census Bureau, 2010). In addition, in Maryland, foster parent age predicted use of ECE and foster parent education predicted utilization of multiple arrangements. Specifically, elderly foster parents were less likely to utilize ECE and highly educated foster parents were less likely to utilize multiple arrangements. Our finding that older foster parents were less likely to use childcare was unique to the foster parent population but is likely linked to previous research that documents lower levels of employment, education, and social support among older foster parents (Harden, 2004; Minkler & Fuller-Thomson, 1999).
Limitations

This dissertation is not without limitations. Primarily, none of the studies employed an experimental design and, therefore, none of the relationships reported in this dissertation can be considered causal. The correlational designs of these studies also introduce the question of selection effects. Each study attempted to address this problem with the inclusion of controls, whenever available, for caregiver employment, education and income, child welfare placement type and child race/ethnicity, gender, and disability status. Yet, it is unlikely that these controls completely eliminated the potential for selection bias. Of greatest concern is the possible role of selection effects in both the association between ECE experiences and child developmental outcomes and between childcare assistance and foster placement stability. The associations between ECE experiences and child outcomes were present even when controlling for foster parent and child demographic characteristics. Nevertheless, it is likely that the differential effects of ECE by type of child welfare placement are driven, in part, by unmeasured differences in the home environments and traumatic experiences of these three groups of children. The association between childcare assistance and placement stability was highly significant and became even stronger when I controlled for child welfare characteristics and child demographics. Nevertheless, it is possible that unmeasured characteristics of the foster parents or aspects of these children’s lives played a role in this finding. For example, more competent and stable foster parents may also be more motivated to seek and more capable of obtaining childcare assistance. The survey study in Maryland (chapter IV) attempted to remedy this limitation but, the small sample size suggests a strong potential for Type II error, particularly for hypothesis tests that were conducted on the subsample of foster parents who utilized childcare.

Limitations in the kinds of data available, particularly with regard to detailed childcare histories and measurement of childcare quality and stability, were prominent in all of the studies. The ECE variables available for analysis in the NSCAW (chapter II) were extremely rudimentary and did not include type (other than Head Start versus other), quality, or dosage. In addition, the NSCAW did not
collect data on ECE experiences in such a way that made it possible to examine stability of care, thus preventing the examination of stability as a mediator of differences in developmental growth for children who experienced or did not experience ECE and for those enrolled in Head Start versus some other form of potentially less stable care. Type of care as measured in the Illinois data included informal, family day care, and center arrangements, but no additional information regarding the quality, stability or dosage of the care was available. In addition, the source of childcare assistance data precluded inclusion of Head Start and state preschool arrangements in our examination of type of care, because these programs are not subsidized in the same way and therefore, were not tracked in the administrative dataset.

**Implications**

This dissertation highlights a critical intersection for early childhood policy. There is no question that young children who become involved with the child welfare system are at significant risk for delayed or derailed development, physically, cognitively, and emotionally. The results presented in this dissertation clearly justify explicit attention to the ECE experiences of these children as a potentially beneficial strategy for addressing their developmental needs. The results of this dissertation also revealed that the group of children who enter the child welfare system, including those in foster care, represents a diverse population. Patterns of ECE reliance, as well as outcomes associated with ECE experiences, differed by child welfare placement type and by characteristics of foster parents and children. While immediate action on behalf of foster children is warranted, prudent examination of whether ECE (and what type of ECE) is beneficial for these children, and under what circumstances, is also called for. For example, this dissertation suggests that children in kinship foster care placements may be at greatest risk for poor developmental outcomes, based on the demographic characteristics of kinship foster parents. Importantly, this dissertation also documented the strongest benefits of enrollment in Head Start for the subgroup of foster children in these placements. Previous research has documented that kinship foster parents receive fewer services than traditional foster parents, though the results of this dissertation indicate that some childcare services may be more readily available to kinship foster parents (e.g. CCA).

This dissertation also documented a dearth of ECE services for children who become involved in the child
welfare system but are not removed from their homes. Thus, as policymakers consider strategies for improving services for these caregivers, ECE services and subsidies should receive explicit attention.

There is an inherent role for policymakers in both enabling foster parents to purchase care and ensuring the purchase of (or enrollment in) high quality, stable care. Specifically, publicly funded ECE programs (both Head Start and the CCA program) were explicitly linked to positive outcomes for foster children. Promoting coordination across these two early childhood systems falls first on the shoulders of the federal agencies responsible for setting research agendas and allocating funding. This responsibility has recently been recognized by the Administration on Children, Youth, and Families and the Office of Child Care in the form of a joint memorandum that encourages Child Care and Development Fund (CCDF) Lead Agencies and State and local child welfare agencies to form partnerships to better serve vulnerable children and families and suggests strategies for effective collaboration (US-DHHS, 2011). While this is a promising development, the extremely limited empirical foundation available to guide practice at the intersection of these two systems leaves administrators with no choice but to make blind decisions about how best to serve the vulnerable children and families involved with the child welfare system. The Children’s Bureau and the Office of Child Care should extend their recognition of this critical intersection to the release of a joint call for proposals directed at bridging this gap in empirical knowledge and promoting coordinated efforts to fill it. Ultimately, however, it falls on State and local officials to act on behalf of the vulnerable young children who enter the child welfare system under their jurisdiction. An important initial step on behalf of these officials, would apply this research to state and local ECE policies by prioritizing access to high-quality, stable, subsidized care for foster children, especially those in kinship foster care and those who become involved with the child welfare system but remain in their biological homes.

**Future Directions**

The critical next step for research is to examine mechanisms through which ECE experiences may impact placement stability and developmental outcomes for children in foster care. The obvious candidates for this role are the quality and stability of the ECE arrangements that children in foster care
experience. For this notably vulnerable population of children, the experience of toxic stress is prevalent, and thus, notions of biological sensitivity to context come into play and imply that variation in their experience of high- versus low-quality care will be especially powerful with regard to their well-being and development over time (Belsky & Pluess, 2009; Boyce & Ellis, 2005; Phillips, Fox, & Gunnar, 2011; Phillips et al., 2011). The stability (or instability) of ECE, and the opportunity it may or may not afford for the development of a secure attachment relationship with adult caregivers, is also likely to be especially salient in the lives of these children for whom caregiving disruptions are commonplace (Meloy & Phillips, 2012).

Questions regarding variation in the characteristics of ECE experienced by foster children and the effects of this variation on the cognitive and social-emotional development of these children offer a fruitful departure point for this area of empirical work. Based on extensive knowledge about the best models for understanding the developmental effects of childcare (NICHD Early Child Care Research Network, 2005), it is essential to (1) control for selection effects, especially those arising from the home environment, (2) examine different dimensions of ECE (e.g., quality, type, amount, stability, dosage), and (3) examine interactions between child characteristics (e.g., age, special needs, temperament) and ECE experiences. When studying children whose lives intersect with public policies and service programs, it is also essential consider the context – both opportunities and constraints – that can also have a large impact on their ECE experiences.

Examining the effects of different dimensions of the ECE programs that foster children experience will involve assessing the type, quality, amount and stability of ECE programs. Stability of care, defined at the level of both providers and settings, may be uniquely important for foster children – a hypothesis that warrants careful attention. In conjunction with stability of care, the attachment relationship of the child with his/her ECE provider is an important dimension of ECE experiences, perhaps especially for foster children. It is important to study how other attachment relationships, including that of the child with his/her biological and foster parents, are affected by patterns of ECE use.
along with consideration of the quality of the child-provider attachment relationship. Variation in these
dimensions of ECE experiences must then be linked to impacts on the cognitive and social-emotional
development of these children. Interactions between child characteristics and dimensions of the ECE
experience should also be examined. Some children may benefit more from one type of ECE (e.g.,
settings with only one or two other children) than another. Children may also experience variation in the
developmental impacts of quality and stability in ECE experiences depending on their gender, ethnicity,
special needs status, or temperament (see Phillips, Fox, & Gunnar, 2011).

In order to understand the effects of ECE on foster parents, specifically, patterns of foster parent
employment, satisfaction, and retention should be explicitly identified and linked to the effects of ECE
program availability and financial support. Indirect mechanisms that operate to affect children through
their impacts on foster parents are also important to consider. For example, it may be true that foster
parents who are able to sustain both financially and personally rewarding jobs also provide home
environments that promote the healthy development of the foster children in their care. This is one of the
lessons that has emerged from experimental studies of families experiencing welfare reform (McGroder,
Zaslow, Moore, Hair, & Ahluwalia, 2002; Bornstein & Sawyer, 2006; Zaslow et al., 2002), and may also
apply to foster families, especially in light of the results presented in chapter III. Bi-directional effects
between foster parents and children also warrant careful attention. For example, the extent to which an
ECE program is able to address the special needs of a child may affect the foster parent’s need for respite
from the child and improve the quality of the foster parent-child relationship. This would suggest a
mechanism by which ECE experiences both directly and indirectly affect the cognitive and social
emotional development of the child.

Such efforts to understand paths of influence among ECE, foster care, and stability in the lives of
foster children should be prioritized in the next stage of research examining the role that ECE can play in
the lives of foster children and the adults who care for them. Another step along these lines would
involve tracing foster children’s histories of ECE reliance prior to and through their involvement with the
child welfare system. This would afford the opportunity to examine continuities and discontinuities in these children’s ECE settings and providers, as well as the circumstances that lead to differing patterns of care. It would also allow for systematic examination of the effects of ECE on the occurrence of child abuse and neglect in at-risk families, as well as on children’s chances of effective reunification following maltreatment and removal from the biological family.

The final step in a program of research focused on the intersection of child welfare and ECE involves applying the knowledge gained from both descriptive and inferential research, including the studies included in this dissertation, to developing and evaluating a new generation of experimental interventions aimed at children and families who live at this crossroads, however temporarily. Programs that provide ECE, such as Head Start, Early Head Start, and pre-K, offer promising platforms upon which to experiment with approaches that are designed specifically with this population in mind. Efforts of this nature could be modeled after current initiatives aimed at supplementing early intervention programs, including Head Start, with curricula and strategies specifically focused on children with self-regulatory challenges (Barnett et al., 2008; Bierman et al., 2008; Raver et al., 2008).

This dissertation initiated a program of research at the intersection of ECE and child welfare and its results highlight the need for explicit attention to the ECE experiences of the vulnerable children who experience maltreatment and enter foster care. Moreover, the potential for ECE to either facilitate or compromise these children’s healthy development, and the unequal access to arrangements that hold the promise of improved outcomes, amplify the importance of improving these services for foster children and the adults who care for them. Research that informs this intersection of services for children in foster care and links them to developmental outcomes has the potential not only to inform developmental science regarding compensating mechanisms that can short circuit the detrimental impacts of toxic stress experienced early in life, but also to promote effective public policies that integrate ECE and child welfare resources in ways that ensure they will improve the well-being of many of the nation’s most vulnerable children.
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