

RURAL AFRICAN AMERICAN FAMILIES' CHILD CARE PLACEMENT:
EXAMINED THROUGH CHILD AGE, ECONOMIC, EDUCATION, SOCIAL SUPPORT,
AND GEOGRAPHIC ISOLATION MEASURES

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ABSTRACT

**MARY BRATSCH: Rural African American Families' Child Care Placement:
Examined through Child Age, Economic, Education, Social Support,
and Geographic Isolation Measures
(Under the direction of Lynne Vernon-Feagans)**

The focus of this study was to examine if the distal factors in a child's exosystem, as well as the proximal factor of child age, were associated with where rural, African American families placed their children in child care. The results indicated that the variables of maternal education, family income (as measured by the income-to-needs ratio), maternal employment type, perceived social support, and geographic isolation were not significant when put into models predicting to relative, family day care, or center care use at 15 and 35 months. Nevertheless, based on descriptive findings, this study added to the literature through a greater understanding of child care placement, as well as family characteristics, of the African American families in question.

TABLE OF CONTENTS

LIST OF TABLES.....	v
LIST OF FIGURES	vi
Chapter	
I. INTRODUCTION.....	1
Study Description.....	3
Study Rationale.....	4
The African American Child Care Debate.....	5
An African American Sample.....	6
II. LITERATURE REVIEW.....	8
Child Care by Type and Age Considerations.....	8
Center Care.....	11
Family Day Care.....	13
Relative Care.....	15
Economic Factors Affecting Access to Child Care.....	17
Employment Factors.....	17
Income Factors.....	20
Education Factors.....	22
The Experience of the Rural Poor.....	24
Geographic Isolation.....	24

Social Support.....	25
Study Hypotheses.....	27
III. METHOD	33
Sample and Design.....	33
Procedures.....	35
Measures.....	35
Child Care Variable.....	35
Employment	36
Income.....	37
Education.....	37
Social Support.....	38
Geographic Isolation.....	39
IV. RESULTS.....	40
Family and Child Care Characteristics.....	40
Analyses.....	45
Child Care Placement Predictions.....	45
V. DISCUSSION.....	52
Outcomes.....	52
Limitations and Directions for Future Research.....	56
Conclusion.....	58
VI. REFERENCES.....	60

LIST OF TABLES

Table

1. Study Hypotheses.....	28
2. General and Model Variable Descriptive Information at 15 Months and 35 Months.....	42
3. Model Variable Descriptive Information at 15 Months and 35 Months Differentiated by Families Choosing Relative Care, Family Day Care, and Center Care.....	44
4. Logistic Regression Analysis (Model-Fitting Information and Likelihood Ratio Tests) for Variables Predicting Placement in Child Care for Children in Care at 15 Months and at 35 Months.....	47
5. Summary of Logistic Regression Analysis (Parameter Estimates) for Variables Predicting Placement in Child Care for Children in Care at 15 Months and 35 Months.....	50

LIST OF FIGURES

Figure

1. Model Pathways at 15 Months: The Infant/Toddler Model.....31
2. Model Pathways at 35 Months: The Preschooler Model.....32

CHAPTER 1: INTRODUCTION

In 2000, over half of all children in the United States experienced some form of child care prior to kindergarten (Magnuson & Waldfogel, 2005). Urie Bronfenbrenner, writing from an ecological perspective in 1979, hypothesized that child care may have larger impacts on human development in modernized, industrialized societies than any other direct effects. He argued that child care affects not only the child, but also the family and society at large, such as through impacts on employment, child-rearing, and transmission of cultural values (Bronfenbrenner, 1979; Johnson et al., 2003). Nearly thirty years later, a policy concern in the United States continues to be where families place their young children in child care, as child care arrangements have the potential to aid or hinder parents in finding employment, reduce low income parents' dependence on welfare, and impact children's development (Joesch, Maher, & Durfee, 2006).

Previous literature has not definitively explained where families are likely to place their children in child care, nor the factors associated with such decisions. These issues may differ depending on various populations; this paper explores these questions for a sample of African American families in rural North Carolina, doing so by hypothesizing that characteristics of the family, mother, and child may be associated with where children spend their hours in child care. Characteristics of the family and mother include family economics, maternal education and employment type, level of perceived social support, and geographic isolation. Because the child does not directly interact with these familial characteristics, they are considered *distal* variables, and features of the child's *exosystem* (Bronfenbrenner, 1979;

Bronfenbrenner & Morris, 1998). Characteristics of the child include the child's age and corresponding developmental stage, which are more immediate, or *proximal*, factors associated with where parents may place their children in care (Bronfenbrenner & Morris, 1998). This study is looking at two separate models based on child age predicting to the type of care children experience: 15 months, when children are transitioning out of infancy, and 35 months, when children are transitioning into preschool-age.

The main focus of this paper is to explore associations among those distal aspects of family life described above rather than to measure children's direct, reciprocal participation with the environments of their home and child care (two of their *microsystems*; Bronfenbrenner, 1979). Are elements of the child's exosystem associated with where children are placed in child care? As the child grows older and more developmentally competent, however, are these distal factors differently associated with where parents place their children in child care? This project will examine how distal and proximal features surrounding the child and family are associated with the two important microsystems of the child (home and child care) through decisions about what type of child care best, or most easily, serves the entire family.

The remainder of Chapter I provides a brief description of the study and discusses additional rationale behind the study (focusing on issues of rurality, poverty, and ethnicity/race). Chapter II examines previous literature on center care, family day care, and relative care—in particular, the benefits, shortcomings, and types of care likely to be used by families of various backgrounds. The variables potentially associated with where children are placed in care are then explored, including economic factors (income and employment), education factors, and factors that may reveal more about the experience of the rural poor (perceived social support and geographic isolation). At the close of Chapter II, hypotheses as

to where children in the current study are in child care are presented, along with the models propelling the current study.

Chapter III provides a description of the measures, procedures, and method of analysis used in the current study. Chapter IV describes the results of the multinomial logistical regression. Chapter V includes the outcomes, limitations, and conclusion to this study. One limitation that is important to note here is that because there is a dearth of literature on the child care experiences of rural African Americans, the information reviewed below draws from literature including both European American and urban samples; wherever possible, however, information on the rural African American experience is provided.

Study Description

Using data from the Family Life Project (a longitudinal study of over twelve hundred rural families in North Carolina and Pennsylvania), this paper explores two separate models of where a subsample of participants—African American working mothers and their children in North Carolina—placed their children in child care. The models vary based on child age; one model examines the factors leading to child care placement for children 15 months old; the other model explores the same factors for children at 35 months old.

Types of child care generally discussed in the literature include partner care, in-home nonrelative care, relative care, family day care, and center care (Early & Burchinal, 2001; Huston, Chang, & Gennetian, 2002; Li-Grining & Coley, 2006; National Institute of Child Health and Human Development [NICHD], 1997; Pungello & Kurtz-Costes, 1999). The types of child care discussed in this paper are center care, family day care, and relative care. In-home nonrelative care, biological father, or partner care were not explored; in examining

the frequencies of child care placement for the families in this study, these types of care were used by a small number of families.

It is acknowledged that many families place their children in several types of care in any given week (Early & Burchinal, 2001); this study, however, focused on primary child care use by families. A child was considered to be in child care if they spent at least ten hours per week in child care. Child care interviews took place with the caregiver who took care of the child for the greatest number of those hours each week. The only families included in this study were those whose child care provider completed an interview.

Study Rationale

Although understanding rural families and where they place their children in child care is both important and under-investigated (Bauer & Katras, 2007; Shoffner, 1986), current findings suggest that the “rural experience” is different than the urban or suburban contexts that are more commonly researched (Bauer & Katras, 2007; Monroe & Tiller, 2007; Thornburg, Mathews, Espinosa, & Ispa, 1997). Various definitions of rurality have been used; a common definition is any area or population located outside of an urbanized area (50,000 people or more) or outside of an urban cluster (2,500-50,000 people; U.S. Census Bureau, 2003). For families living in rural areas thus defined, meeting child care needs may carry challenges unique to the social and geographic contexts in which they live—including underemployment, isolation, and poverty (Shoffner, 1986; Thornburg et al., 1997). Lack of access to adequate child care may in turn affect a family’s ability to work (Kisker & Ross, 1997; Walker & Reschke, 2004), earn sufficient incomes (Fuqua & Labensohn, 1986), or even access additional education (Bronfenbrenner, 1979; Huston, Chang, & Gennetian, 2002).

Within the poorly understood contexts of rural families is the additionally poor understanding of child care accessed by rural African Americans. While some studies have explored rural African American life (e.g., Heath, 1983; Murry & Brody, 1999; Murry, et al., 2002), these studies' foci have included literacy and parenting, and have not examined the child care challenges faced by rural African American families. In the South, approximately one million African Americans live in rural areas (Brody & Flor, 1998). Because this population remains largely invisible in the research literature and policy arena, their needs most likely continue to be unmet.

This is especially true for rural African American families if they live in poverty. The rural South is marked by poverty; for all children, rural poverty rates in the South exceed 24%, the highest in the nation. Of African American children living in the South, almost 40% live below the poverty line (Harris & Zimmerman, 2003). The sample used in this study lived in North Carolina; in that state in 2000, the number of African American children living in poverty was estimated at 27% (North Carolina Rural Economic Development Center, 2006). Poor African American families may face occupational, economic, and residential discrimination (Garcia Coll, et al., 1996; McLoyd, 1998) that could be associated with the types of child care is available to them. Not only may rurality affect their geographic access to care, but poverty may affect their ability to purchase child care.

The African American Child Care Debate

The goal of examining where children are placed in child care is to unearth additional information about the child care used by rural African American families, given that previous literature has revealed contradictory information about what types of care are accessed by African Americans. Some of the literature has found that centers are most widely used by African Americans (e.g., Early & Burchinal, 2001; Fuller, Holloway, & Liang, 1996). Other

literature has revealed that African Americans are more likely than other ethnic groups to use relative, or kin, care (e.g., Uttal, 1999; Johnson et al., 2003). These results reveal slightly conflicting information, leading to additional questions: are children more likely to be placed in relative care or center care? Can it be assumed that this choice mirrors their preferences for their young children (Early & Burchinal, 2001)? Whether or not African American women rely on kin for care is an important policy consideration because as these mothers enter the workforce, local, state, and federal policymakers cannot assume that these women would automatically turn to relative care to resolve child care issues (Huston et al., 2002). Other care options may need to be available, but there is currently not enough data to inform policymakers about which child care services these families most need: a large number of high quality, subsidized center slots; a way to make smaller, more localized care (such as care provided by relatives) subsidized and held to quality standards; or both.

An African American Sample

Because there have been few studies with rural African American families as participants (Brody & Flor, 1998), there is support for conducting an intra-group rather than inter-group comparison. Parke and colleagues (2006) recognize the usefulness of within-ethnic group analyses because of the importance of understanding “adaptive strategies” (p. 102) developed by ethnic minorities in response to majority and minority cultural influences. Rather than focusing on differences between ethnic groups’ use of child care, one can understand processes adapted by ethnic minorities to meet their child care needs (Parke, et al., 2006). This leads to a further understanding of how variables such as socioeconomic status are marked by intra-group diversity and limits overgeneralization by ethnicity (Johnson, et al., 2003). This paper contributes to the literature by examining the variation of

income, employment, education, social support, and geographic isolation within the context of rural African American families.

CHAPTER 2: LITERATURE REVIEW

Child Care by Type and Age Considerations

Previous literature confirms that studying child care by type is important. Child care has been shown to have limited impacts on children's development (Early & Burchinal, 2001; NICHD, 2005c); nevertheless, there may be differential outcomes for children based on the type of care they receive. Different settings may have varying effects on development due to dissimilar activities and relationships experienced by children within the different setting types (Bronfenbrenner, 1979). This possibility makes it necessary to better understand the different types of child care (Early & Burchinal, 2001). Additionally, understanding the types of care accessed by families may clarify how families impact the development of their children through the diverse settings, or microsystems, their children experience (Fuller et al., 1996).

Families may place their children in different types of care based on their child's age and, by extension, developmental stage. For example, 15 months are those last months in which the child is transitioning out of infancy and into toddlerhood. Most children have learned to walk but they are still not wholly independent, and are just producing their first words (Shonkoff & Phillips, 2000). For these children, this young age leads them to reciprocal interaction with their microsystems by drawing in the parent or caregiver, and exerting needs for continued, consistent support. Parents may therefore choose care that is more familial in nature (Johansen et al., 1996; Walker & Reschke, 2004). They may desire for their very young children to have more one-on-one care, which could be found with

relative care or family day care homes. In addition, the parents may be less concerned about ensuring a school-like environment or peer relationships for their children. Alternatively, there may be more structural considerations that are associated to whether parents choose relative care for young children. Previous literature has revealed that there are typically fewer child care slots for infants than for preschool-aged children (Pungello & Kurtz-Costes, 1999). This could point to differences in availability of center care and family day care versus relative care, and to a greater propensity to use informal child care for infants (Magnuson & Waldfogel, 2005). In this way, it may be likely for parents to choose relative care or family day care over center care when their children are 15 months old regardless of other factors, such as the more distal features of the family and mother.

At 35 months of age, however, children may be more likely to be in center care (Loeb, Fuller, Kagan, & Carroll, 2004). At three years, children have increased autonomy and communication skills (Shonkoff & Phillips, 2000). Parents, therefore, may desire for their children to be in an environment that allows them to direct such skills toward kindergarten preparation. Their relationship with caregivers may be of slightly less importance than the child's relationships with peers (Shonkoff & Phillips, 2000). These factors, based on the child's older age, may cause parents to seek center-based, or preschool, care. This is particularly true if their mothers view center care as more educational (Johansen, Leibowitz, & Waite, 1996), with more educated teachers (Early & Burchinal, 2001). For children three years of age, there may more structural ease to accessing center care. There may be better availability of child care slots in centers for older children, as well as subsidy availability to make center care an affordable option (Weinraub, Shlay, Harmon, & Tran

2005). Because of these features of the child and child care conditions, parents may be likely to desire center care for children at 35 months.

Several studies have examined the breakdown of types of care accessed by families, and these numbers reveal that various populations access care differently. Looking at child care used by primarily minority, low-income urban families, Li-Grining and Coley (2006) found that less than 40% of mothers used the type of care they preferred—for example, although 21% of mothers preferred mother care, no mothers were able to provide their own care for children. They found that the care types most used by families were Head Start (14.16%), centers other than Head Start (29.22%), relative in-home care (24.89%), and relative out-of-home care (19.06%). Center care and relative care thereby nearly equaled each other (43.48% and 43.95%, respectively; Li-Grining & Coley, 2006).

Several national longitudinal studies on child care that have examined where children are placed for care have found slightly conflicting results. On the one hand, some have found that center care is most common, between 32% and 44% (Capizzano et al., 2000; NICHD, 2005c). On the other hand, Johansen and colleagues (1996) found that respondents were most likely to place their children in family day care, at 47%. In additional conflicting results, NICHD (2005c) found that only 9% of participants used relative care, while Rigby and colleagues (2007) found that across a review of five studies, relative care was the most common type of care used, at 42%. Some of these differences may be accounted for through the nature of the samples used—NICHD used a primarily European American, middle-class sample, while Rigby and colleagues examined studies using primarily minority, low-income families. This could potentially account for a difference in relative care, with lower-income families more likely to tap into relative care, though this remains a key question in the debate

over where children are placed in care. In order to understand such questions better, the following sections provide more detail about the three types of care examined in this paper (center care, family day care, and relative care), exploring specifically the benefits and disadvantages of each and the current findings for rural, poor, and/or African American families.

Center Care

Center care has been shown to provide children benefits that, if the option exists, may lead parents to choose it over other types of care. These benefits include more advanced cognitive and language development (Crosby, Gennetian, & Huston, 2001; NICHD, 2005c); improvement in early academic skills, with children more ready to learn (Magnuson & Waldfogel, 2005); higher levels of school readiness (Rigby, Ryan, & Brooks-Gunn, 2007); higher quality care (Peyton, Jacobs, O'Brien, & Roy, 2001); caregivers with more training in child development and more education (NICHD, 2005b; Shpancer, 2002); high reliability of care (Kisker & Ross, 1997); and potentially more diverse interactions with peers (Shpancer, 2002). For lowest-income families, centers are more likely to be subsidized (Weinraub et al., 2005; Early & Burchinal, 2001), making it an affordable and reliable alternative to other forms of care (Kisker & Ross, 1997). Provision of child care for low-income children may improve their outcomes—although there is limited evidence, high quality care may account for cognitive and social advances for children in poverty (Shpancer, 2002).

One example of center-based care that typically serves low-income families is Head Start. Head Start is a publicly-funded center program designed to improve low-income children's early outcomes (Huston et al., 2002), with gains shown in school readiness for children who attend Head Start programs (McLoyd, 1998). Serving over 800,000 three- and

four-year-olds in 2001 (Fuller, Kagan, Loeb & Chang, 2004), Head Start provides low- or no-cost access to higher-quality center care for families who otherwise may not be able to access such care for their children. Magnuson and Waldfogel (2005) found that African American children were more likely to be in center care—which was potentially due to higher usage of Head Start—than European American children. Twenty percent of African American children (versus four percent of European American children) were enrolled in Head Start. Efforts to provide care to lower-income minority families, therefore, may help equalize rates of African American and European American participation of early education (Magnuson & Waldfogel, 2005).

Despite these benefits of center care in general and Head Start in particular, center care has shortcomings; several of these are of practical significance to families and may reveal weaknesses with large-group care. In poorer neighborhoods, center care may be scarce (Kisker & Ross, 1997). If available, however, it must be reliable for families. Centers generally have policies prohibiting sick children from attending (Early & Burchinal, 2001; Fuller et al., 1996; Kisker & Ross, 1997), which makes it less attractive to families needing accommodating care. For low-income urban families, center care meant fewer months of continuous care with caregivers, less flexible and accessible arrangements, as well as less communication with caregivers (Li-Grining & Coley, 2006).

Other challenges of center care may negatively impact children's child care experiences. In conducting observations of child care centers, NICHD (2005b) found fewer instances of positive caregiving than those provided by child care home providers or relatives. This could be due to characteristics of center care, including higher teacher-child ratios (Li-Grining & Coley, 2006), lower teacher wages, and high staff turnover (Adams &

Rohacek, 2002; Thornburg et al., 1997). For example, the high expense of running center care may lead centers to hire less staff in order to cut costs; this in turn may mean that caregivers have less time for one-on-one contact with children. Higher turnover means that children may need to frequently adjust to new caregivers. While center care may be associated with better social and cognitive outcomes, these may also be reasons why children have more behavioral problems in a center setting (Early & Burchinal, 2001). This may be especially true for older children—as children increased in age from 15 to thirty-six months, the child-adult ratio and group size also increased (NICHD, 2005b).

African American families have been shown to access center care more than other racial and ethnic groups (Early & Burchinal, 2001; Fuller et al., 1996; Loeb et al., 2004; Magnuson & Waldfogel, 2005; Shoffner, 1986; & Singer, Fuller, Keiley, & Wolf, 1998), as well as put their children in care earlier (Singer et al., 1998). In general, single mothers are likely to use center care (Kisker & Ross, 1997), and this appears true for African American mothers as well. Fuller and colleagues (1996) found that for African American households choosing centers, fathers were present in 58% of the homes, versus 90% in European American homes. Rural single mothers were found to rely more on regulated care than partnered mothers (Walker & Reschke, 2004). In the South, in particular, rural African Americans may have more access to center care; greater center availability may be due to a higher proportion of working African American mothers, or it could be due to an early and consistent supply of centers, such as Head Start (Singer et al., 1998).

Family Day Care

Family day care, which is generally defined as child care services offered in the provider's home to children other than her own (Helburn, Morris, & Modigliani, 2002), may

have benefits for children and families that make family day care a desired form of care. Johansen and colleagues (1996) found that mothers who value knowing their caregiver chose family day care over center care, particularly for younger children. Family day care provides a home-like environment with lower ratios, and is sometimes, like center care, regulated by states. Family day care is often cheaper than centers, has more flexible sick children policies, and can be a reliable source of care (Kisker & Ross, 1997). Family day care providers were rated as more positive than center caregivers in their interactions and frequency of interactions with children (NICHD, 2005b). There may be more frequency, but also duration, of interaction between home-based child care providers over center-based care providers (Bronfenbrenner, 1979).

Family day care, however, may not be the best option for all families. Parents were found to be less likely to use this type of care if quality was a motivating factor in choosing care (35% chose family day cares with nearly 52% choosing center care; Peyton et al., 2001). Family day care on average has been shown to be of lower quality (Rigby et al., 2007). Family day care providers may not advertise as much as centers, making it harder for families to know the care option exists (Kisker & Ross, 1997). Furthermore, low-income families may not realize that some family day care is available for subsidy use, which may limit their usage of such care (Shlay et al., 2004).

The extent to which rural African American families use family day care over other types of care remains unclear. In Early and Burchinal's study of national data (2001), near-poor African American families used family day care for both their infants and preschoolers at greater rates than the poor and not-poor families. However, these figures were still relatively small compared to center and relative usage. In another income comparison, the

NICHD Study of Early Child Care found that family day care was the second-most used type of care for the above-poverty groups, while it was the third-most used type of care for both the poverty and near-poverty groups (NICHD, 2005a). Both studies revealed that impoverished families were not extremely likely to take advantage of family day care.

Relative Care

Several studies have discussed the benefits of relative care. These include flexibility and familiarity (Kratas, Zuiker, & Bauer, 2004; Li-Grining & Coley, 2006); ability to provide nonstandard timing of care (Kisker & Ross, 1997); better availability if other resources are limited (Fuller, Kagan, Caspary, & Gauthier, 2002); lower ratios; more attention paid to children in a home environment (Shpancer, 2002); better communication between parents and caregivers (Li-Grining & Coley, 2006); positive caregiving (NICHD, 2005b), better child behavior (Magnuson & Waldfogel, 2005); affordability (Johansen et al., 1996); and cultural or language continuity with the home environment (Kisker & Ross, 1997). Reschke and colleagues (2006) found that grandmothers were able to transport children, care for sick children, meet their basic needs (such as bathing and meals), and accommodate multiple children. For European American and African American urban mothers moving from welfare to work, reliance on family members was an acceptable alternative to center care, because center care, while perhaps more stable, meant relying on strangers instead of family (Scott et al., 2005). Among her rural Iowan sample, Atkinson (1996) also found that the families may have preferred relative care because it was more similar to immediate family care. Easily accessible care, as well as familiarity provided by relatives, has prompted families of varying cultural backgrounds to use relatives as caregivers.

With all of these benefits, however, relatives may not be able to provide the most adequate care for families. While relatives may offer their services at low- or no-cost (Kisker & Ross, 1997), this may not be the case for every family. Families who have access to subsidies have been found to be less likely to use relative care (19% versus 2%; Weinraub, et al., 2005). Relative care is generally not regulated, and there may be health and safety concerns for children (Kisker & Ross, 1997). This is particularly true in high-poverty areas, where there is likelihood that if the child's home environment is one of poverty, the environment of the relative care provider would be impoverished as well (NICHD, 2005a). Child care provision by relatives may also be unstable or unreliable (Scott et al., 2002; Katras et al., 2004), especially if all members of a low-income family are required to work under current welfare legislation, leaving no relatives behind to provide child care assistance (Kisker & Ross, 1997). In addition, if families rely on one relative as caregiver, this care may be unstable if that caregiver is ill and unable to provide care (Scott et al., 2002).

The extent to which African American families tap into relative care remains unclear, as studies have reported differing likelihoods of relative use for this population. In two national, longitudinal studies, findings on relative care are conflicting between different income levels. On the one hand, Early and Burchinal (2001) found that across income groups (poor, near-poor, and not-poor), families placed their preschool-aged children in relatively similar amounts of relative care (16%, 18.7%, and 12%, respectively). On the other hand, when NICHD (2005a) differentiated their participants by poverty (in which African American families were over-represented), they found that relative care for thirty-six month old children was more widely used by the families in poverty (30%) than the near- or above-poverty groups (18% and 11%, respectively). Overall for the NICHD sample, African

American usage of relative care was at 26%. Yet both of these studies reported much lower usage of relative care than Rigby and colleagues (2007), who, in their five-study comparison, found that families placed their children in relative care nearly half of the time (42%). Again, these numbers, ranging from 12% to 42%, reveal that the African American child care debate is still relevant. More evidence is necessary to find out the extent to which rural African American families—particularly low-income families—tap into relative care over other types of care.

The next section of this paper examines variables that may reveal where families place their children in care, starting with economic issues.

Economic Factors Affecting Access to Child Care

Employment Factors

Maternal employment is a major reason for securing child care (Atkinson, 1994), and has driven increased child care demand (Fuller et al., 1996). It is less clear, however, what comes first: child care availability influencing mother's ability to find employment or mother's employment influencing the search for child care (Singer et al., 1998; Walker & Reschke, 2004). Limited access to child care influences a mother's ability to seek or sustain employment; this may be especially true for women living in rural areas (Atkinson, 1994; Walker & Reschke, 2004), for African American women (Singer et al., 1998), and for lower income families (Weinraub et al., 2005).

The rural family may experience employment constraints due to their geographic location; these constraints directly impact a family's access to child care. Previous research has suggested that women living in rural areas are employed in marginal, part-time, low-paying positions with few benefits (Ames, Brosi, & Damiano-Teixeira, 2006; Atkinson,

1994; Gringeri, 2001; Thornburg et al., 1997). In order to support a family, women may be required to work multiple jobs and long hours; this could be associated with the placement of their child in child care (Perroncel, 2000).

In North Carolina, the state in which the participants in this study lived, broad economic issues have affected employment, which in turn have potentially led to challenges in accessing child care. Among other things, plant closings as a result of NAFTA policies have affected unemployment rates; unemployment in rural North Carolina in 2002 was 7.6%, with over 150,000 rural North Carolinians out of work (Hall, 2003). Whereas in past decades mothers may have worked more standard hours in a plant or mill setting (Monroe & Tiller, 2001), service sector jobs have replaced such employment. As a result, mothers may have work schedules that are not considered part of the standard work week (Joshi & Bogen, 2007). The types of jobs available are often non-traditional in other ways—including seasonal, part-time, or shift work (London, Scott, Edin, & Hunter, 2004). Non-traditional types of employment place burdens on the rural family; these include scheduling conflicts between work and family; financial instability; emotional insecurity; and less quality time with their children (Perroncel, 2000; Thornburg et al., 1997). Employment that offers fewer benefits, lower wages, and inflexible hours may limit a family's access to affordable child care (Johnson et al., 2003; Perroncel, 2000; Peyton et al., 2001).

Employment factors may be associated with where families place their children in care. If women are employed in jobs that start with little warning, have weekend hours or unpredictable schedules, and little flexibility for child care emergencies or sick children, they may use informal, or relative care, to satisfy their child care needs (Walker & Reschke, 2004). Parents were found to be less likely to receive child care subsidies if they worked

night-shifts or more variable hours (Weinraub et al., 2005). Families with non-traditional work schedules, therefore, may be more likely to seek out informal child care as well, since receiving subsidies predicted use of more regulated (generally center) care (Fuller, et al., 2002). This may be especially true for families with younger children (Johansen et al., 1996). In contrast, others have found that mothers who do not work during traditional work hours are *less* likely to use relative care. Hofferth and Wissoker (1991) found that mothers who worked non-day jobs were less likely to select sitter or relative care, and more likely to use center or husband/partner care.

Other literature has discussed a greater use of center-based care due to employment factors. Fuller and colleagues' (1996) found maternal employment negatively related to center care, with nonemployed mothers showing a higher likelihood of selecting centers rather than other forms of nonparental care. In the same study, a significant number of children of fully-employed African American mothers were enrolled in centers as opposed to other types of care. The more hours worked by mothers, as well as more stable jobs, predicted center or family child care use (Hofferth & Wissoker, 1991; Huston et al., 2002).

While some research has found that (primarily single) African American mothers rely more on relative care than European American mothers (e.g., Brewster & Padavic, 2002; Casper, 1996; Uttal, 1999), there are exceptions to these findings (e.g., Huston et al., 2002; Roschelle, 1997). One reason for the use of relative care may be a distrust of a child care market developed primarily for European American consumers decades after women of color were already in the workplace (Johnson et al., 2003; Uttal, 1999). Whereas European American women have entered the workforce more recently, African American mothers tend to have family work history that extends across generations (Johnson et al., 2003). This is an

important consideration in the examination of African American child care usage and its connection to work.

Rural African American women and families may face a unique set of circumstances that influences their ability to secure employment or reliable child care. For many rural African American mothers, available employment pays low wages and is labor-intensive (Brody & Flor, 1998). African American mothers are more likely to be the head of their households (Fuller, et al., 1996); child care, therefore, is crucial to single mothers' ability to secure and maintain employment (Perroncel, 2000). In a mixed-demographic study of rural families, Walker and Reschke (2004) found that nonpartnered mothers were more likely to work full-time. It is uncertain if this is true for rural African American women living in the South; the United States Department of Labor (2007) cites the unemployment rate highest for African American women. At 8.4 %, this implies that women living in the rural South have difficulty finding or maintaining employment. However, if rural African American women are able to maintain employment, they may have great needs for flexible child care, yet have less money to purchase reliable child care (Johnson et al., 2003). This ability to purchase child care is related to the following section, in which income, and its connection to child care usage, is discussed.

Income Factors

For rural, low-income families, child care costs may exceed 35% of their budgets (Walker & Reschke, 2004). Previous literature reveals little evidence about the types of care that are accessible to low-income families (Li-Grining & Coley, 2006). While the complexities of accessing child care likely involves more than demographics, variables such as income may curtail a family's access to child care (Peyton, et al., 2001). Income level may

also determine access to subsidies, which in turn may be related to where families place their children in child care.

A family's income may impact what types of care they can access for their children. Family economics can account for both the type and amount of nonmaternal care experienced by infants (NICHD, 1997). Examining data of over six hundred families at ten locations across the United States, Peyton and colleagues (2001) found that families with higher incomes used non-relative in-home care or center care for their children while lower-income families were more likely to place their children in family day care and relative care. In contrast, Li-Grining and Coley (2006) found that for economically disadvantaged families in three cities, both center care and relative care were common while non-relative in-home care was not. Center care was highly used as care (29.2% in addition to 14.2% in Head Start), along with relative care (24.9% in the home and 19.1% out of the home; Li-Grining & Coley, 2006). The NICHD Early Child Care Research Network (2005a) found that at thirty-six months, center use was most common across poverty, near poverty, and above poverty groups. For the poverty group, the next widely used type of care was relative care, while father or partner care was the second most widely used for the near-poverty group, and family day care was the second most widely used care for above-poverty families. With somewhat varying results—and for mainly urban samples—this research points to high usage of mainly relative and center care for lower-income families.

The reason for these discrepancies may reflect the importance of an additional consideration, subsidies, which potentially play a role between income and where families place their children in care. Child care subsidies may supplement families' incomes and provide opportunities for families to have a wider choice in type of care. Interviewing parents

in Philadelphia, Weinraub and colleagues (2005) found that families receiving subsidies had mean monthly income levels much lower than families who did not receive them (\$1417 versus \$2350). Families with subsidies also paid much less out of pocket for child care expenses (\$43/week versus \$90). Due to increased access and affordability, more of these families receiving subsidies used center care (Weinbraub et al., 2005).

Education Factors

Statistics from the US Department of Labor (2007) reveal that education was related to labor force participation: the more highly educated a person, the greater likelihood that he or she was working or searching for work. For women twenty-five years of age or older with less than a high school diploma, just over 33% participated in the labor force; with a high school diploma but no college, nearly 54%; with some college but not degree, 64%; with an associate degree, 71.2%; with a bachelor's degree or higher, just over 73%. These figures may affect the rate at which families tap into child care (Huston et al., 2002; Singer et al., 1998). Singer and colleagues (1998) found that only 29% of parents who did not graduate from high school had children in care versus 41.8% and 51.8% of children whose parents had college and postgraduate degrees, respectively. In contrast, Loeb and colleagues (2004) found that mothers without high school diplomas are *less* likely to care for their own child.

It is unclear across studies whether a positive relationship exists between maternal education and child care use, while the literature linking maternal education to where children are placed for care was more definitive. In general, previous studies have found that higher parent education leads to center care use or in-home, non-relative care (Hofferth & Wissoker, 1992; Huston et al., 2002; NICHD, 1997; Pungello & Kurtz-Costes, 1999), with parents at higher education levels placing their children in higher quality care (Shpancer,

2002). On the one hand, Huston and colleagues (2002) found that maternal education predicted higher usage of center care, a finding replicated by others (Fuller et al., 1996; Fuller et al., 2002; Hofferth & Wissoker, 1992; Pungello & Kurtz-Costes, 1999). On the other hand, for higher educated mothers, in-home, nonrelative care, such as nannies or *au pairs*, was common (NICHD, 1997; Pungello & Kurtz-Costes, 1999).

There are several hypotheses to explain the link between center care and education. Higher education may lead to higher income levels, and hence, higher usage of child care centers (Huston et al., 2002). The positive correlations between maternal education, maternal employment, and income levels may drive demand for a greater quantity of centers in locations or neighborhoods where mothers are more educated (Fuller et al., 2002). Another proposed connection was that mothers who were highly educated may have appreciated the developmental and educational benefits of child care and value center care more than mothers with less education (Huston et al., 2002; Johansen et al., 1996).

Families with lower education, however, may be less likely to tap into center care unless correlated with low incomes and subsidy receipt. Data from NICHD (1997) revealed that participants with the lowest education levels used parental or grandparent child care. Low-income African American mothers who received subsidies were less educated than parents who were not receiving subsidies (54% with secondary education versus 86% without secondary education; Weinraub et al., 2005). While rural European American women have been shown to have less education (Atkinson, 1994), it remains less clear and has been less researched how the rates of maternal education for rural, lower-income African American women may affect where they place their children in care.

The previous variables, based on family economics and education, may be less unique to the rural poor than the two remaining variables—geographic isolation and social support. These two variables are discussed below.

The Experience of the Rural Poor

Geographic Isolation

Limited resources and geographic isolation characterize many rural areas (Perroncel, 2000). Families living in rural areas are at risk of being in poverty. U.S. Census Bureau data report that eleven percent of Americans living in rural areas live in poverty (Weinberg, 2005). Compared to urban poverty, rural poverty can be more persistent, severe, and less visible (Bauer & Katras, 2007). Beyond and within poverty, particular challenges associated with living in a rural location include issues surrounding transportation, employment, housing, and health care (Bauer & Katras, 2007; Perroncel, 2000, Walker & Reschke, 2004).

For families living in geographically rural areas, transportation can impact how families access child care (Huston et al., 2002; Li-Grining & Coley, 2006). With longer distances to travel, traveling within the work, child care, and home triangle may be time-consuming, expensive, and cost-prohibitive. Higher gasoline prices and car maintenance costs, as well as time considerations, may be related to where a family places their child in care. Examining child care issues for rural families in three states, Walker and Reschke (2004) found that for rural families in Maryland, the only formal child care options (e.g., center-based care) were located in a neighboring county fifty miles away. In Shoffner's study (1986), which included African American rural North Carolinians, more than 40% of participants lived seven or more miles away from nearest day care center, while two out of six communities had little accessibility to center care. In one county studied, there were

twenty-one centers, yet all were located in a single community, and not close to where participants lived (Shoffner, 1986). Families, therefore, may be forced to make alternative choices due to proximity to work or home, thus reducing their access to a wide variety of care (Katrass, et al., 2004; Perroncel, 2000; Pungello & Kurtz-Costes, 1999). A family's best option may be to piece together geographically proximal child care, which may not be affordable (Thornburg et al., 1997).

Other factors are also related to where rural families may place their children in child care. These include shorter supplies of regulated child care in rural areas (Perroncel, 2000); lack of knowledge of available, proximal care (Shoffner, 1986); substandard care (Walker & Reschke, 2004); and care at too high a cost (Walker & Reschke, 2004). These issues have perhaps been associated with the differing findings regarding where families place their children in child care. Compared to the national average, Perroncel found that families living in rural areas were somewhat more likely to use family-based or in-home care; in a similar finding, Walker and Reschke found that family day cares were the most widely available care. Alternately, NICHD (1997) reported that children living in rural areas were more likely to be cared for by relatives. These differences may be a result that rurality and geographic isolation may not be homogenous for all families. The next section examines how social support may be experienced by families. Social support (or lack of it) potentially impacts where children are placed in child care.

Social Support

Some of the challenges resulting from geographic isolation may be mitigated by proximity to relatives, which was a commonly discussed attribute of the social support network in relation to child care. In Shoffner's (1986) study examining child care in the rural

South (where two-thirds of participants were European American and one-thirds were African American), she found that over 30% lived near one to five relatives while over 20% lived near more than five relatives. Geographic proximity to relatives may be associated with where families place their children in child care, potentially leading relatives to serve as child care providers. Other studies have found that social support within African American families may include relatives (mainly grandmothers) residing with young mothers (Hogan, Hao, & Parish, 1990; McDonald & Armstrong, 2001). This co-residence may be able to partially compensate if there is a lack of a male-wage-earner in the household (Hogan et al., 1990), as well as provide easy access to flexible, affordable child care assistance.

Henly and colleagues (2005) label three attributes of the social support system as instrumental, financial, and informational; these classifications can clarify how families use social support systems to access child care. Instrumental supports include forms of assistance that are important for poor rural mothers, such as child care and transportation. Financial supports are monetary gifts, loans, or payments; in addition, families may provide child care services for free (leading to relative care usage) or help provide payment for alternative child care arrangements. Informational supports include providing information about child care opportunities; this can take the form of informing families about types of care available locally (Atkinson, 1994). For lower income families, however, such supports may serve as a “coping” function rather than a “leverage” function (p. 122, Henly, Danziger, & Offer, 2005)—social support may not help a family attain economic mobility out of their impoverished condition. Rather, the support network may provide only the everyday relief described above (Henly et al., 2005).

For African American mothers, social support may be related to where they place their children in care. Hogan and colleagues (1990) found that African American mothers, regardless of marital status, reported inadequate access to child care; this finding was unaffected by better access to kin. Despite the findings that 56% of African American mothers were involved in support networks compared to only 20% of European American mothers, and African American mothers in the study received more income support from network members (Brewster & Padavic, 2002; Hogan et al., 1990), the mothers in these studies still reported inadequate access to child care. Unmarried, African American mothers have been shown to tap into free child care provided by relatives. The number of mothers involved in social support networks increased if they were single. What remains less known is how rural African American mothers perceive the strength of their social support systems. This study seeks to understand how their perceptions of support are associated with where they placed their children in care.

Study Hypotheses

Based on the literature presented above, this section includes predictions of some of the relationships between the predictor variables and outcome variable of child care type. Table 1 below briefly describes the hypotheses about how the distal variables described above may impact where families place their children in child care. Following the table is a more detailed description of the hypotheses and models describing the pathways between the predictor variables and outcome variable of child care type.

Table 1

Study Hypotheses

	15 Months	35 Months
Variables	Hypotheses	Hypotheses
<i>Maternal education</i>		
Higher	Relative Care or Family Day Care	Center Care
Lower	Relative Care	Relative Care
<i>Income-to-needs ratio</i>		
Higher	Center Care	Center Care
Lower	Relative Care or Center Care	Relative Care or Center Care
<i>Geographic isolation</i>		
More isolated	Family Day Care or Center Care	Center Care
Less isolated	Relative Care	Relative Care
<i>Social support</i>		
Higher	Relative Care	Relative Care
Lower	Family Day Care or Center Care	Family Day Care or Center Care
<i>Job shift</i>		
Traditional	Relative Care	Relative Care or Family Day Care
Non-traditional	Family Day Care	Family Day Care or Center Care

It is noted that while some of the hypotheses in the above table may appear contradictory; this is because the literature reviewed above points to contradictions in associations between the predictor variables examined in this study and the outcome variable for type of care. At 15 months, for the variable of education, it is hypothesized that for African American families living in rural North Carolina, all levels of education may point to more informal care (e.g., unregistered or unlicensed care), such as relative care or family day care. For the variable of income, it is hypothesized that even for their youngest children, lowest-income mothers would be able to access center care through child care subsidies. On the other hand, they may still choose to use relative care. Mothers with higher incomes may use center care. For employment, it is hypothesized that when African American mothers are employed in non-traditional shift work, they would be more likely to use relative care than center or family day cares. With traditional shift work, they would be able to tap into the more formal types of child care (such as family day care or center care).

The next variable, level of perceived social support, may have differing effects. High perceptions of social support (which may include a relative living in the home) could lead to relative care. Alternatively, mothers may access information about child care centers and family day care availability through their social support network and use those types of care for their children. Finally, greater geographic isolation would generally lead to less center care; therefore geographic isolation is related to relative care or family day care.

At 35 months, there are slight variations in the hypotheses. For the variable of education, less education would continue to be related to relative care, while higher education may lead to center care. For the variable of income, lower income would result in relative care unless families are able to access center care due to government subsidies (or

family contribution). For work, if mothers are employed in jobs with more traditional work hours, center care may be more common. Still at 35 months, non-traditional job shifts may result in relative care. For perceived social support, lower levels of support may lead families to choose family day care or center care while higher levels of support would still lead to relative care, even for older children. For the variable of geographic isolation, lower levels of isolation would lead to families being able to place their children in more formal care, such as center care or family day care. Higher isolation would still lead to more localized care, such as relative care or family day care, if close in proximity. Complicating these hypotheses, however, is that if child care centers are more available in the Southeast (Early & Burchinal, 2001), then the African American families in the study, regardless of geographic isolation, may be more likely to use center care.

See Figures 1 and 2 below for visualizations of these model hypotheses.

Figure 1

Model Pathways at 15 Months

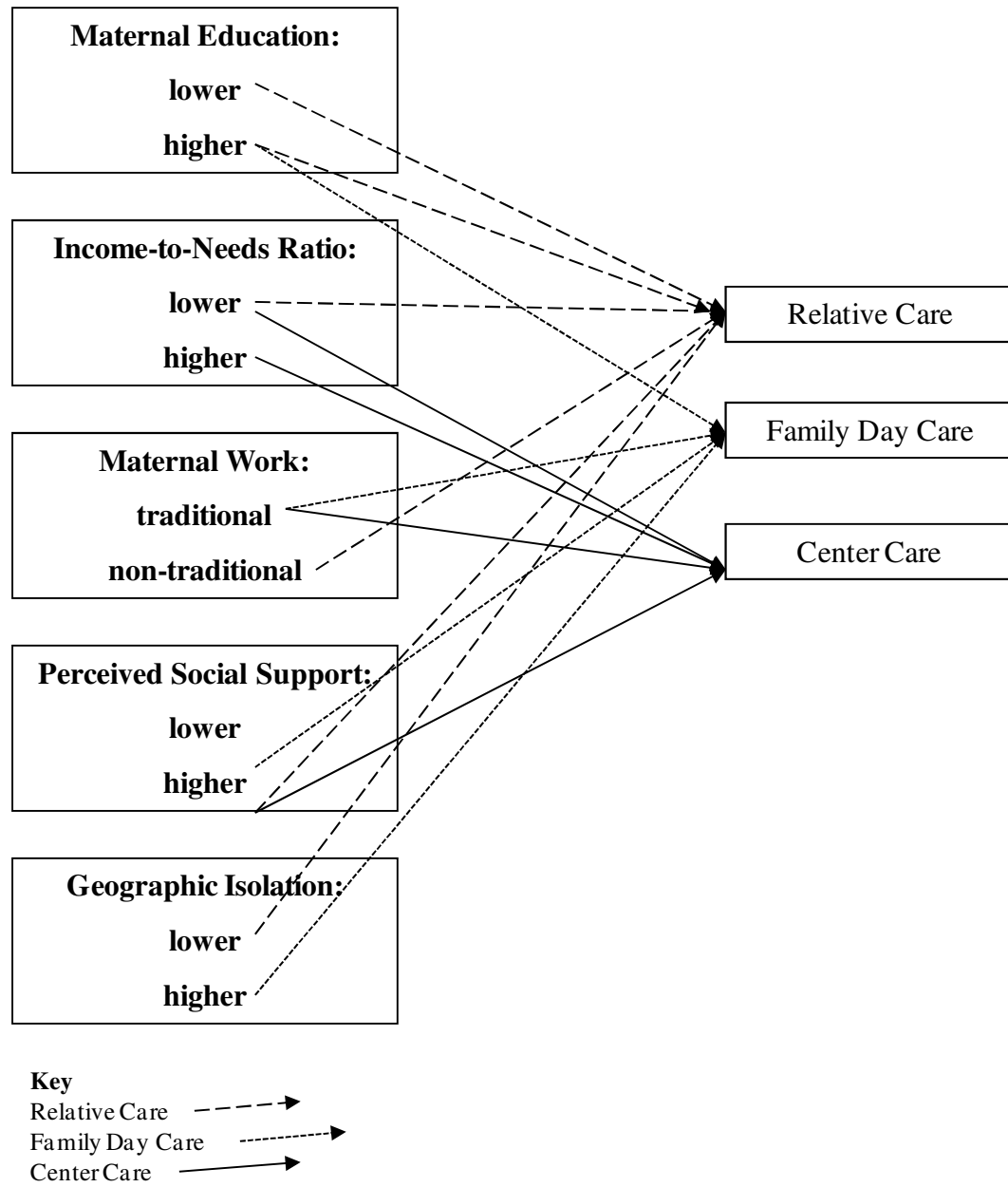
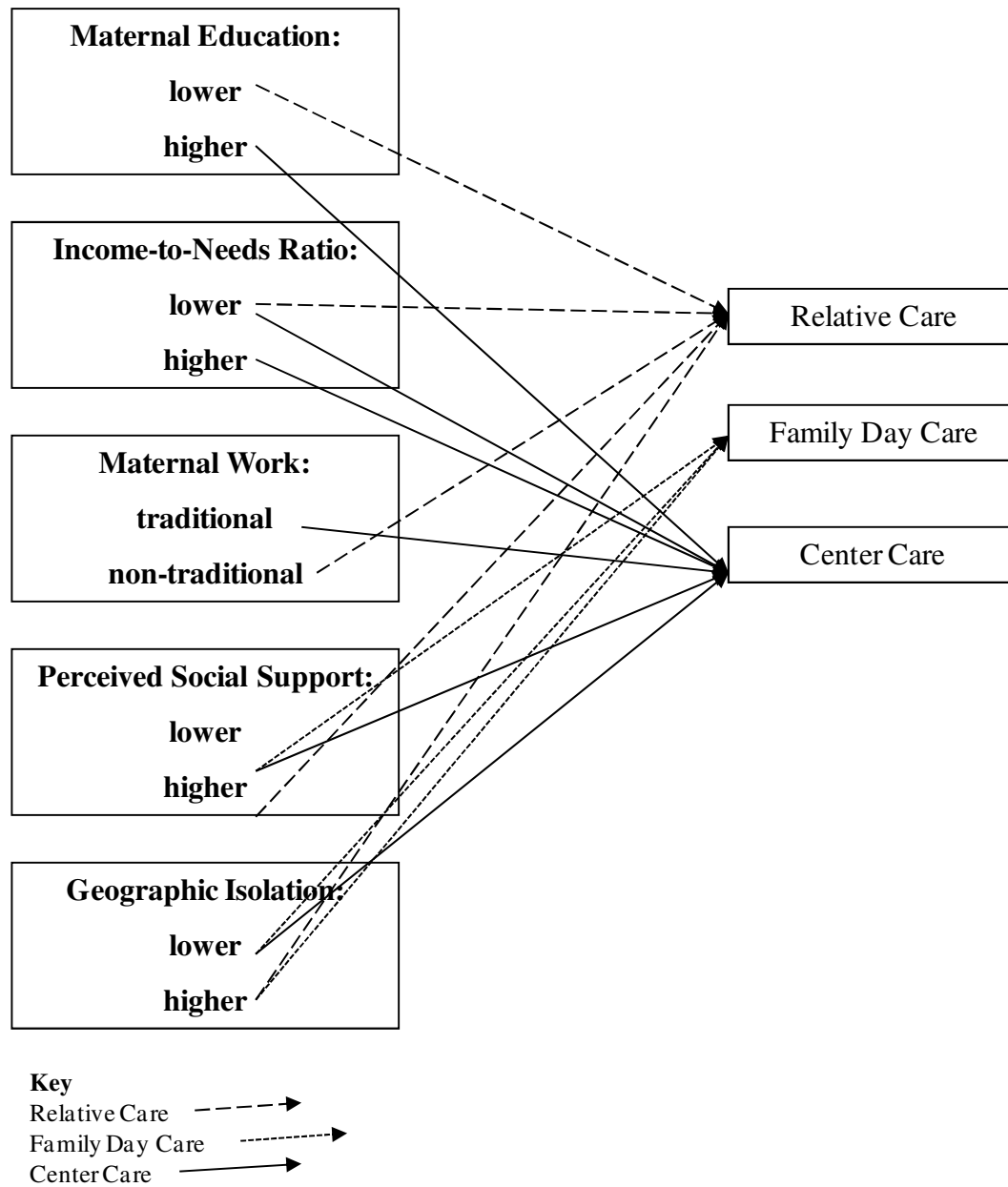


Figure 2

Model Pathways at 35 Months



CHAPTER 3: METHOD

Sample and Design

The Family Life Project (FLP) was designed to study families who lived in two of the four major geographical areas of high child rural poverty (Dill, 1999). Specifically, Eastern North Carolina and Central Pennsylvania were selected to be indicative of the Black South and Appalachia, respectively. FLP adopted a developmental epidemiological design, using complex sampling procedures to recruit a representative sample of 1,292 families at the time that they gave birth to a child. A two-stage randomized sample was drawn. In the first stage, three of seven hospitals were randomly sampled within county in Pennsylvania because there were too many hospitals to permit recruitment at all of them. Such sampling of hospitals was not necessary in North Carolina. In the second stage, the project sought to recruit four groups of families in North Carolina and two groups in Pennsylvania.

FLP used over-sampling to attain adequate representation of racial and/or economic minority families in these geographic areas. Low-income families in both states, and African American families in North Carolina, were over-sampled. African American families were not over-sampled in Pennsylvania, as the target communities were over 95% European American. Given logistical constraints related to obtaining family income data in the context of hospital screening, family income was dichotomized (low versus not low) for purposes of guiding recruitment. Families were designated as low income if they reported household income at less than 200% of the federal poverty threshold for a given household size, use of

social services requiring a similar income requirement (e.g., food stamps, WIC, Medicaid), or if the head(s) of household had less than a high school education.

In North Carolina, families were recruited in person and by phone. In-person recruitment occurred in all three of the hospitals that delivered babies in the target counties. Phone recruitment occurred for families who resided in target counties but delivered in non-target county hospitals. These families were located through systematic searches of the birth records located in the county courthouses of nearby counties. Recruitment occurred seven days per week over the 12-month recruitment period spanning September 15, 2003 through September 14, 2004. A standardized script and screening protocol were used.

In total, FLP recruiters identified 5,471 (57% NC, 43% PA) women who gave birth to a child during the recruitment period, 72% of which were eligible for the study. Eligibility criteria included residency in target counties, English as the primary language spoken in the home, and no intent to move from the area in the next three years. Of those eligible, 68% were willing to be considered for the study. Of those willing to be considered, 58% were invited to participate. Of those selected to participate, 82% ($N = 1,292$) of families completed their first home visit, at which point they were considered enrolled in the study.

The project planned to recruit low-income and not-low-income African American families in North Carolina, but combined these groups because there were so few African American infants born into not-low-income families. The final number of participants recruited in North Carolina included 521 African American families. The current analyses were based on 185 (at 15 months) and 182 (at 35 months) respondents who met the following inclusion criteria: (1) The primary caregiver lived in North Carolina and indicated that they were female and African American; (2) the primary caregiver was employed; (3) the child

was in child care at one or both time points; (4) the child care provider was interviewed at child care visits when target children were approximately 15 and 35 months of age; and (5) the child care provider was not a biological father. The biological mother was designated as the primary caregiver if she lived with her child. If the biological mother did not live with the child, then the person who had legal custody of the child or who lived with and cared for the child on a regular basis was designated the primary caregiver.

Procedures

Data presented here were collected during a 2½ hour home visit, conducted when children were 15 months and then again when children were 35 months of age. Home visits consisted of two research assistants who conducted interviews, administered questionnaires, videotaped mother-child interactions, and videotaped child-based tasks. The current analyses pull information from the interviews and questionnaires, which were computerized at the time of collection. Interviews and respondents entered all responses into laptop computers, thereby expediting the transfer of data from the remote data collection sites to a centrally-located data processing center. At each assessment, the primary caregivers completed the KFAST literacy screener (Kaufman & Kaufman, 1994). Mothers, reading at an eighth grade (or higher) level, were given the opportunity to complete questionnaires by themselves. If mothers read below an eighth grade reading level, research assistants both read questionnaires to them and entered their verbal responses into laptop computers.

Measures

Child Care Variable

The outcome variable, *type of care*, was re-coded according to several criteria. Because there was not one question asking the caregiver what type of care they provided, it

was necessary to examine several variables to understand what type of care was utilized by parents at each of the two time points when the child care interviews were conducted.

Relative care was coded if 1) the care took place in a home environment (either the target child's home or someone else's home); 2) the caregiver in question was a relative but not a biological parent; and 3) the caregiver did not consider themselves part of a family day care network, unless caring for only the target child ($N=74$ at 15 months and $N=36$ at 35 months).

Family day care was coded if 1) if the care took place for more than one child in a home environment other than the child's home, and 2) the care was provided by an unrelated adult ($N=20$ at 15 months and $N=21$ at 35 months). There were, however, four exceptions (3 at 15 months and 1 at 35 months) of family day care providers who were relatives of the target child. These relatives were considered family day care providers because they were part of a family day care network, registered with and/or licensed by the state of North Carolina, and cared for multiple children. *Center care* was coded if the care took place in a center or non-home-based environment with a non-related adult caregiver ($N=91$ at 15 months and $N=125$ at 35 months).

Employment

At both 15 and 35 month visits, mothers were asked to complete a jobs grid, in which they provided information about their work hours, employment, and work conditions.

Employment included whether they were 0=not employed or 1=employed. If mothers were not employed, they were not included in the sample for the purposes of this paper.

Information on nonstandard work hours was collected for mothers' primary job only. *Job shift* was entered as 0=fixed day shift (most hours between 8 am and 4 pm) or 1=nonstandard

work shifts (including fixed evening shift, fixed night shift, rotating shift, irregular or other) . There were no missing data for the job shift variable.

Income

The measure used to depict household income was the income-to-needs ratio. The *income-to-needs ratio* was calculated for each household by summing the following: primary caregiver's annual income; secondary caregiver's annual income; annualized contributions to the household of all other people in the household; and all other sources of income. Other sources of income included unemployment insurance, worker's compensation, social security retirement, supplemental security income, other pension, cash income from welfare, child support, interest or dividend income, rental income, alimony, regular help from relatives, regular help from friends, and educational grants. This annual household total income figure was divided by the federal poverty threshold for a family of matching size and composition to create the income-to-needs ratio, where a 1.0 income-to-needs ratio equals income matching the federal poverty threshold. Thresholds vary based on the number of adults and children in the household. For this data, the income-to-needs ratio was calculated using the family income information collected at the 15 and 35 month visits, and were based on the 2004 poverty threshold values for 15 months and on the 2006 poverty threshold values for 35 months. There were no missing data at 15 months. For missing data at 35 months ($n=5$), the information was not filled in with data from corresponding time points.

Education

Maternal education was derived from the home interview conducted independently by mothers at both the 15 and 35 month visits which asked mothers to identify their highest level of education categorically (for example, 1= less than high school 2 = high school

graduate 3 = GED 4= etc.). This variable was recoded as a continuous variable by changing the previous categorical education levels into the years of education attained by the mothers at the time of each home interview. For missing data at 15 months ($n=3$), 2 cases were taken from the 6-month interview and 1 was taken from the 24-month interview. For missing data at 35 months ($n=1$), the 24-month response was used. Correlations between the two variables (with missing and filled-in data) were significant at $p<.001$.

Social Support

The Questionnaire of Social Support (short form) was used to assess *social support perception* with respect to community involvement, friendship, family, and intimate relationships. This paper used a single-item global satisfaction rating derived from the mean values of sixteen questions in the questionnaire (four in each subscale). Satisfaction on subscales, which then produced the global rating, was a mean of values 1-4, where 1=very dissatisfied and 4=very satisfied; 5=not applicable and this response was treated as missing when calculating the scale scores. The modification used in the Family Life Project reflected a change in the phrasing of questions in each scale, as well as a reduction from 37 to 16 items on the questionnaire. The reduction was accomplished through combining pairs of items on the original form into single items. These items asked separately about the presence and satisfaction of various sources of support. The QSS was not administered at 15 months; in this case, 6-month data were used in the logistic regression. For any missing data at 6 months ($n=7$), 2 month data was used. Correlations between the two variables (with or without missing data) were significant at $p<.001$. For any missing data at 35 months ($n=1$), 24 month data was used. Correlations were significant at $p<.001$.

Geographic Isolation

Census data and raster distance data for families at each time point were calculated. If the family did not move, the information from the previous time point was carried forward.

Geographic isolation consisted of the mean of the shortest distance (in kilometers) from the respondent's home to the following locations: gas station, physician, library, fire station, elementary school, high school, public park, supermarket, county seat, and freeway exit ramp. This information was not recorded for families who did not live in one of the three target counties of the study. At 15 months, therefore, 13 participants were missing data because they lived in one of nine surrounding counties. At 35 months, there were missing data from 11 participants, who lived in one of eight surrounding counties. For another six families, it was not specified whether they lived in a different county; information at the time point was missing altogether. For these cases, therefore, the data was filled in with 6 or 15 month data. The correlation between the two variables had a significance of $p < .001$.

CHAPTER 4: RESULTS

Family and Child Care Characteristics

Descriptive statistics reveal that the working mothers in the study were primarily unmarried and living in or near poverty. When their children were 15 months old, the mothers were in their mid-twenties and most (58%) had just one child under the age of 5 in the household. Although 67% reported being unmarried, 43% of mothers said their spouse or partner lived in the household. Only 10% of the mothers were without a high school diploma, while nearly 50% had taken courses beyond high school. All mothers in this sample were working, and about one-third (35%) of the sample worked a non-traditional shift. Despite being working mothers, over 78% were living at or below 200% of the federal poverty threshold. Their level of geographic isolation, on the other hand, was not high; only 10% lived more than 10 kilometers from key services.

In examining the characteristics of child care at 15 months, most children experienced over twenty hours of paid care each week. 65% of children experienced 20-40 hours of care, and 40% experienced exactly 40 hours per week. However, nearly 25% experienced over 40 hours of care, with five children in over one hundred hours of care each week. 32% of caregivers did not charge money for care. Of those that did charge, 65% of the mothers paid more than \$300 per month, with the highest price for care at just under \$700 per month. 10% of child care providers received non-monetary payment for providing child care. Another aid to families in paying for care was government child care subsidies; 46% of the families at 15 months received subsidies.

At 35 months, there were some changes in the characteristics of the mothers, children, and child care. There were fewer children under the age of five living in the household, at 66%. The number of mothers who had taken some college courses increased to 67%. The number of families living at or below the federal poverty threshold dropped 5% to 73%. In addition, the level of geographic isolation dropped, as just over 5% of families lived at 10 kilometers or more from key services.

The changes in child care characteristics at 35 months revealed that children were in fewer hours of care each week, while families were slightly more likely to pay for care, and pay more each month. 75% of children were in care between 20-40 hours per week, while 19% experienced over forty hours per week. Slightly fewer caregivers did not charge money for care, at 29%. Of those charging, over 85% paid more than \$300 per month. The highest payment was \$100 more than at 15 months, at just under \$800 per month. Fewer caregivers received non-monetary payment for care, dropping to 4%. The number of families receiving government subsidies jumped 8% to 56%. See Table 2, below, for this information.

Table 2

General and Model Variable Descriptive Information at 15 Months (n = 185) and 35 Months (n = 182)

Variables	15 Months			35 Months		
	M	SD	Range	M	SD	Range
Child's age	15.95	1.37	14.06-21.16	36.84	1.54	34.46-43.76
Maternal age	26.12	5.73	17.96-45.71	28.09	6.70	18.76-57.52
Number of child under 5	1.51	.68	1-4	1.39	.60	1-4
Number of adults	1.86	.86	1-5	1.81	.84	1-6
Number of hours in care	39.69	17.23	5-134	37.72	12.30	9-108
Cost per week of care	90.18	40.54	10-172	103.59	32.00	15-195
Maternal education	12.66	1.33	10-18	12.88	1.31	8-18
Income-to-needs ratio	1.66	1.27	.00-9.56	1.75	1.08	.30-6.10
Geographic isolation	4.96	3.61	.98-18.76	4.41	3.17	.92-18.76
Perceived social support ^a	3.79	.91	1-5	3.87	.83	1-5
Job shift ^b	1.35	.48	1-2	1.34	.47	1-2

^a Perceived social support: 1 = *very dissatisfied*, 4 = *very satisfied*, 5 = *not applicable*. ^b Job shift: 1 = *traditional shift work* (approximately 8 am – 4 pm), 2 = *non-traditional shift work* (approximately 4 pm to 8 am).

Table 3, below, provides descriptive statistics for the five predictor variables, differentiated by the three types of care. For families using relative care, descriptive statistics reveal that at fifteen months, 74 families placed their children in relative care, 20 in family day care, and in 91 in center care. The working mothers of these young children averaged over 12 years of education, and had an income-to-needs ratio that ranged between 1.51 (for families using center care) to 2.01 (for families using family day care). Geographic isolation for families using relative and center care was less than 5 kilometers, and for families using family day care, just above 6 kilometers.

At 35 months, 36 families used relative care, 21 families used family day care, and 125 families used center care for their older children. The number of years of education for the mothers in the study remained around an average of 13 years, and the mean geographic isolation was between 4 and 5 kilometers for families choosing each type of care.

Table 3

Model Variable Descriptive Information at 15 Months (n = 185) and 35 Months (n = 182)

Differentiated by Families Choosing Relative Care (n = 74, n = 36),

Family Day Care (n = 20, n = 21), and Center Care (n = 91, n = 125)

	15 Months			35 Months		
	M	SD	Range	M	SD	Range
<i>Relative Care</i>						
Maternal education	12.66	1.33	10-18	12.90	1.58	8-16
Income-to-needs ratio	1.74	1.18	.44-6.44	1.80	1.02	.42-6.10
Geographic isolation	4.83	3.02	1.10-12.16	4.61	2.87	1.10-11.44
Perceived social support	3.80	.92	1-5	3.86	.90	1-5
Job shift	1.43	.50	1-2	1.39	.49	1-2
<i>Family Day Care</i>						
Maternal education	12.75	1.80	10-18	13.14	1.65	10-18
Income-to-needs ratio	2.03	1.55	.44-6.95	1.94	1.45	.41-5.96
Geographic isolation	6.24	4.75	1.15-18.67	4.92	2.70	1.09-9.03
Perceived social support	3.90	.72	1-5	3.67	.80	1-5
Job shift	1.20	.41	1-2	1.29	.46	1-2
<i>Center Care</i>						
Maternal education	12.64	1.23	10-18	12.83	1.16	9-18
Income-to-needs ratio	1.51	1.28	.00-9.56	1.71	1.04	.30-5.60
Geographic isolation	4.81	3.80	.98-18.76	4.27	3.34	.92-18.76
Perceived social support	3.77	.94	1-5	3.90	.82	1-5
Job shift	1.32	.47	1-2	1.33	.47	1-2

Analyses

Using SPSS 15.0, analyses were conducted on all measures in order to identify outliers. Two outlying cases were found (one case regarding income-to-needs ratio at 15 months and one case regarding geographic isolation at 35 months); analyses were run with and without these cases and the same results were found. Correlations between the sample both with and without the outliers were $p < .001$. Thus, outliers remained in the dataset for all analyses.

The analyses were run using multivariate logistic regression. Logistic regression was used because the dependent variable could not be made into a continuous variable; instead, the dependent variable was categorical, with three possible outcomes (relative care, family day care, and center care). This variable was dummy coded as 1 for relative care, 2 for family day care, and 3 for center care. The time points (15 months and 35 months) were run as two separate models. The one categorical variable of job shift, along with the four continuous variables of years of education, geographic isolation, income-to-needs ratio, and social support perception were each entered into models based on the 15 month and 35 month data. The five predictors were run simultaneously; the order of entry of variables was therefore not a factor in running the analyses. Center care for all analyses was the reference group. Therefore, for each independent variable, there were two comparisons—relative care versus center care and family day care versus center care.

Child Care Placement Predictions

Table 4, below, depicts results testing the null hypothesis that the likelihood of choosing one of the three types of care at one of two time points would not be affected by the combination of five predictor variables. The significance test with which to examine this null

hypothesis was the chi-square test, testing whether a relationship was present between the categorical dependent variable and the combination of five predictor variables. In Table 4, the overall models ($df=10$) were not significant with chi-squares of 12.274 ($p=.267$) at 15 months and 8.178 ($p=.611$) at 35 months. They did not exceed the critical value (with $df=10$ and $\alpha=.05$) of 18.31. None of the effects of the five model variables were significant in either model, although job shift at 15 months had a chi-square of 5.787 ($p=.055$), which was significant below the .10 level. The null hypothesis could not be rejected. Observe that the model variables have two degrees of freedom because these are estimated parameters measuring both relative care against center care and family day care against center care, which was the reference category when testing both models.

Table 4

Logistic Regression Analysis (Model-Fitting Information and Likelihood Ratio Tests) for Variables Predicting Placement in Child Care for Children in Care at 15 Months (n = 185) and at 35 Months (n = 182)

	15 Months		35 Months	
	χ^2	df	χ^2	df
Full Model	12.274	10	8.178	10
Model Variables				
Maternal Education	.538	2	3.276	2
Income-to-Needs Ratio	3.091	2	.418	2
Geographic Isolation	2.672	2	1.073	2
Perceived Social Support	.048	2	3.616	2
Job Shift	5.787†	2	.633	2

Note: Center care is the reference category.

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

Therefore, at the $p \leq .05$ level, the following model pathways from the 15 month model were not statistically significant. The hypothesized predictors were all unrelated to child care placement. Higher maternal education was not associated with increased probability of use of relative or family day care, while lower maternal education was not associated with relative care. Higher income-to-needs ratio did not relate to greater center care use, while lower income-to-needs ratio did not relate to relative or center care. A traditional job shift was not associated with family day care or center care use. A non-traditional job shift was not associated with a greater probability of relative care usage. Higher social support perception did not lead to more relative care, while lower perceptions of social support did not lead to family day care or center care. Higher geographic isolation was not significantly correlated with relative care usage, nor was lower geographic isolation significantly correlated with family day care usage.

The following pathways from the 35 month model are likewise rejected as not statistically significant at the $p \leq .05$ level. Again, the hypothesized predictors were all unrelated to child care placement. More years of maternal education were not related to higher probability of center care use, while fewer years of maternal education were not related to relative care usage. A higher income-to-needs ratio did not result in significant usage of center care, nor did a lower income-to-needs ratio lead to relative care or center care. If a mother worked a traditional job shift, it did not lead to a higher probability of center use; non-traditional job shift did not correlate to relative use. Higher levels of social support perception was not associated with relative use while lower perceptions of social support were not associated with family day care or center care use. Finally, higher levels of geographic isolation did not lead to relative care or family day care. If a family was less

geographically isolated, they were not significantly more likely to use family day care or center care.

Table 5, below, lists the parameter estimates for each of the model variables compared to the reference category of center care. This resulted in one degree of freedom used as each variable was tested. None of the variables were significant at the .05 level. Maternal education, income-to-needs ratio, geographic isolation, perceived social support, and job shift did not have a statistically significant effect on the relative probability of choosing center care versus relative care or family day care. Because there were not statistically significant findings, in looking at e^B , or the exponentiated B , there were no statistically significant increases or decreases in the odds that any of the five predictor variables would be associated with the type of child care chosen. The closer each of the odds ratios was to 1, the closer each of the variables was to being independent of the outcome variable (Garson, 2008). Note in the table below that the e^B values were close to 1, again signifying that none of the five variables run in the models were strong predictors of type of care chosen.

Table 5

Summary of Logistic Regression Analysis (Parameter Estimates) for Variables Predicting Placement in Child Care for Children in Care at 15 Months (n = 185) and 35 Months (n = 182)

	15 Months			35 Months		
	<i>B</i>	<i>SE B</i>	<i>e^B</i>	<i>B</i>	<i>SE B</i>	<i>e^B</i>
Relative Care						
Maternal Education	-.056	.147	.946	-.022	.177	.978
Income-to-Needs Ratio	.264	.161	.990	.133	.205	1.037
Geographic Isolation	-.010	.047	1.302	.036	.061	1.142
Perceived Social Support	-.001	.183	.999	-.092	.240	.912
Job Shift	-.671†	.354	.511	-.329	.412	.720
Family Day Care						
Maternal Education	.095	.207	1.100	.433†	.252	1.542
Income-to-Needs Ratio	.231	.220	1.116	.062	.292	1.085
Geographic Isolation	.109	.071	1.260	.082	.084	1.064
Perceived Social Support	.064	.305	1.066	-.674†	.362	.510
Job Shift	.625	.708	1.869	-.100	.610	.905
<i>Df</i>	10			10		

Note: e^B = exponentiated *B*. Center care is the reference category.

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

Based on results displayed in this table, however, three parameter estimates were significant at the .10 level or less. At fifteen months, there was a trend between the families who placed their children in center versus relative care based on maternal in job shift type (traditional versus non-traditional; $B=-.671$, $p=.058$). That is, mothers tended to be more likely to place their children in center care if they were working a more traditional day shift (8 am to 4 pm). This corresponds to the study's hypothesis that mothers with non-traditional job shift work would tend to place their children in relative care. At 35 months, there was a marginally significant difference between families who chose family day care versus center care based on maternal education. Mothers who placed their children in family day care rather than center care were marginally more likely to have a higher number of years of education ($B=.433$, $p=.086$). The study's hypothesis about higher maternal education, however, did not include family day care; instead, it was associated with center care, which was the opposite finding.

At 35 months, there was a difference between families who chose family day care versus center care based on social support perception ($B=-.674$, $p=.063$). Families who were marginally more likely to place their children in family day care were associated with a lower overall level of social support. This only partly relates to the study's hypothesis regarding lower social support perception, which hypothesized that lower social support would lead to family day care or center care as compared to higher social support leading to greater likelihood of using relative care. In general, because these predictors were all marginally significant, there is some caution in interpreting these results with complete confidence. Nevertheless, there were trends of interest from the current analyses.

CHAPTER 5: DISCUSSION

Outcomes

The focus of this study was to examine if the distal factors in a child's exosystem, as well as the proximal factor of child age, were associated with where rural, African American families placed their children in child care. The results indicated that the variables of maternal education, family income (as measured by the income-to-needs ratio), maternal employment type, perceived social support, and geographic isolation were not significant when put into models predicting to relative, family day care, or center care use at 15 and 35 months. Nevertheless, based on descriptive findings, this study added to the literature through a greater understanding of child care placement, as well as family characteristics, of the African American families in question. This study is one of the few studies that have examined the child care experiences of an all-African American sample, and it highlights the complexity, if not the predictability, of African American family life and child care usage.

The lives of the rural, Southern African American working mothers and their children in this study were more complex than the models tested. The characteristics of the mother and family did not show associations with the type of care that mothers chose for their children at either 15 months or 35 months. This paper revealed, however, the types of care in which children were placed for the greater part of at least 10 hours per week, and often ranging much higher than 10 hours. This information, while not tested for statistical significance, does contribute to the African American child care debate, which has called into question whether families are more likely to use relative care or center care. For their

children aged 15 months, families highly utilized relative care and center care: 74 families used relative care for their young children and 91 families used center care. At this time point, 20 families placed their children in family day care.

For their children at 35 months, these numbers shifted slightly. Again, there was not a test of significance run comparing the two time points, but the numbers revealed a different picture of where children spent their time outside of the home. When their children were 35 months old, 36 families used relative care and 125 families placed their children in center care. Family day care was used by 21 families. The high usage of center care at both time points supports previous literature that has found increased center use among African American samples (Early & Burchinal, 2001; Fuller, Holloway, & Liang, 1996), but the usage of relative care (particularly at 15 months) falls in line with previous findings as well (Uttal, 1996). This points to the complexity (and the contradictions that have been abundant in the literature) about the African American child care debate: utilizing child care may not be an either/or situation. Both relative and center care (and to a lesser extent, family day care) were used by this sample of African American mothers living in rural areas of North Carolina.

The figures for relative care are slightly different than what others have found. NICHD (2005c) found that 9% of their participants used relative care while Rigby and colleagues (2007) found that 42% of participants used relative care. The current study aligns more closely with the more diverse sample from Rigby and colleagues, with relative care ranging from 40% to 20%, depending on child age. What remains unknown is what exactly propelled the decision by parents to place their children in this type of care, and if their

placement related to the child care preferences they had for their small children (Early & Burchinal, 2001).

This study showed that the family day care use of the African American families in this sample was limited. This finding was similar to the NICHD (2005a) finding that family day care was the third-most used type of care for poverty and near-poverty groups. On the other hand, Johansen and colleagues (1996) found that in a sample of mostly European American mothers, respondents were most likely to place their children in family day care, at 47%. This is quite a bit higher than what the families in this study used, which was approximately 10%. This could have been a factor of the samples in question. While the sample in the current study was predominately high school-educated mothers who were African American, Johansen and colleagues used data in which 40% of respondents had a college degree and only 17% were families of color.

It is unknown why this figure of family day care usage is lower than relative or center care; it could be, as others have hypothesized, that family day care homes do not advertise as much as centers. Families may not know about the family day care opportunities in their areas (Kisker & Ross, 1997). Another unknown is the actual availability of family day care in the area in which this study took place; if it was not a common form of care, then its usage would remain lower than other, potentially more available care.

Information regarding the model variables in the study also revealed information about the lives of African American families living in rural North Carolina. In terms of family economics, mothers were working, yet remained below, at, or slightly above the poverty threshold. Prior literature has found that that women living in rural areas are likely to be employed in marginal, non-traditional, low-paying jobs that do not get them out of

poverty (Joshi & Bogen, 2007; Perroncel, 2000; Thornburg et al., 1997). In this study, one third of the mothers worked non-traditional job shifts. Results did not point to statistically significant connections between these variables and child care placement, except for job shift type at 15 months. There, non-traditional job shift type was marginally associated with increased relative care. This is in line with previous research (Joshi & Bogen, 2007). This finding did not approach significance, however, for families whose children were 35 months old. This could have been because mothers working non-traditional shifts utilized relative care for their younger children because of availability and convenience. However, when center care became more available for their older children, the availability and desire to utilize more formal care led mothers with non-traditional work schedules to choose center care.

When women had more years of education, they were marginally significantly more likely to choose family day care than center care at 35 months. This is a somewhat surprising result, as previous literature often found that more educated mothers tapped into center care (Huston et al., 2002; Fuller et al., 1996; Fuller et al., 2002; Hofferth & Wissoker, 1992; Pungello & Kurtz-Costes, 1999). It may be that the small cell size of family day care ($N=20$) figured into these slightly unlikely results. It is more likely, however, that this finding may have approached significance because one of the mothers in the study had acquired a master's degree. When this case was taken out of analyses, this no longer approached significance ($p=.263$). Atkinson (1994) discussed how rural European American women were shown to have less education than urban counterparts; this was not exactly the case for the sample in question. Over 90% of mothers at both time points had completed their GED or

high school diploma. Yet it remains important to note that even with these levels of education, families still lived near the poverty line.

An additional variable in the study that approached significance was social support perception at 35 months. Compared to center care, families who placed their children in family day care had less overall perception of support. Again, this could have been due to the small cell size; however, the cell sizes were similar at both time points and this variable approached significance only in the model in which the children were older. Regardless, this finding could have been due to parents feeling less connected to their child care choice of family day care for their older children, and less supported in their knowledge of care availability for their nearing-preschool-aged children. More work needs to be done with this variable in understanding how mothers' social support perception impacts the lives of their small children.

Limitations and Directions for Future Research

This study has several limitations; several of these could be resolved through further research. One limitation of the current study is that it only explored direct effects, when in reality several of the variables may have correlated with each other. In addition, these models may have been a better fit if cumulative risk had been explored. If the circumstances of the families most at risk were tested in relation to the type of care in which they placed their children, there might have been a greater understanding of how the variables tested in the study impacted child care placement. For example, the exploration of families in deepest poverty working non-traditional job shifts, who were most geographically isolated with little perceived social support, may have revealed that their choice of child care was different from the families in the study who were less at risk.

Exploring mainly distal features of the child and family in relation to child care may have been less effective than studying features that were more proximal to child care. Such features include information about subsidies and child care cost in addition to child care quality and level of child care provider experience. These variables may intersect with the variables examined in this study, such as poverty level, education, and job type. For example, it would be useful to look at the interaction between cost of care and family income level to understand what percentage of their income the mothers in this study paid for child care. The combination of these variables may also have a greater association with child outcomes as a result of child care.

Another limitation that this study did not address is the important question of the quality of care accessed by the families. Indeed, the type of care may matter less than whether or not the care children receive is of adequate quality. It is not known whether the families in question had the resources available to pay for high quality care. In addition, this study did not explore whether or not high quality care was readily available where these families lived. These remain two unexplored factors that could help provide an understanding of how the children fared in their early years outside of the home. Exploring child care quality could potentially lead to a better understanding of the degree of readiness these children could approach more formal schooling, such as kindergarten.

There were limitations in the use and coding of the child care variable. Previous literature has discussed how families may piece together care from several different sources in any given week (Early & Burchinal, 2001; Scott et al., 2005). Future research is needed, therefore, to explore all of the places where young children spend their time away from home, not just their primary child care each week. In addition, more children may have been

in child care than were reported in this study; child care interviews were not completed with all child care providers. This potentially could have changed some of the information revealed in this study.

An additional weakness was the variability in the categorical outcome variable of type of care. The degree of variability within the types of care was potentially large, and could have masked the results. Within each category, but particularly within relative care, the number of hours the children were in care, the exact person caring for the child, and the quality of care provided within the various types of care were factors that could have been of extreme variance. Looking at type of care as a predictor variable, perhaps pointing to quality of care as the outcome, may reveal more about the experiences the young children in the study had in their child care settings. There were also unequal cell sizes within the categorical outcome of type of care. These issues make it difficult to apply the information learned from this particular sample to the population of rural African American families. Exploring a sample such as this, however, continues to be important.

Another future direction, especially in order to understand the lives of the children more clearly, would be to match aspects of child care with specific child social, emotional, and/or academic outcomes.

Conclusion

Using Bronfenbrenner's ecological theory, this study attempted to explain child care selection using elements of the child's exosystem. The theory emphasizes the reciprocal nature of all of the environments that the child both experiences and influences. This study, in looking at environmental factors removed from the direct experience of the child, was not able to find statistical significance in such models. However, there were some marginally

significant trends for job shift, social support perception, and maternal education. The direct effects measured in the models, however, were not as effective in capturing the complicated lives of these families and children. This paper does, however, add to the African American child care debate by revealing the frequencies of type of care chosen by the families in the study. The families in this study primarily used both relative care and center care, with center care especially common at 35 months. Placing children in care, therefore, is not necessarily a one-or-the-other proposition. The lives of these families remain under-researched, and where to place children in child care is a balancing act that most families face—balancing economic and other distal factors with the needs of the child and the family as a whole.

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