

# Teasing apart the child care conundrum: A factorial survey analysis of perceptions of child care quality, fair market price and willingness to pay by low-income, African American parents

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## Abstract

Child care quality plays a crucial role in children's social and cognitive development. While child care quality is a critical issue for all children, it matters more for low-income children. Policy makers have increased the emphasis on allowing parents, not government, to make decisions about the type of care they want for their children. Yet most research on child care quality has focused on how child care professionals, not parents define high quality care. This study investigates how low-income families evaluate child care quality by examining the child care preferences of a sample of low-income African American parents. We employ the factorial survey method, a method used in sociological research to assess people's perceptions and rankings of individual attributes associated with complex multidimensional phenomena. The factorial survey method permits a simultaneous assessment of how respondents evaluate and make tradeoffs among multiple child care characteristics. We assess the impact of child care characteristics on respondents' perceptions of child care desirability, fair market value, and willingness to pay. Findings indicate that parents' definition of quality focused squarely on the care giving environment, specifically the qualifications, experience, training and behavior associated with the child care provider. The type of care facility—family, center, relative or neighbor care was largely irrelevant to this sample of parents. Parents believed that the characteristics they defined as desirable child care situations were worth more, and parents were willing to pay more for these characteristics. These parents also defined quality in terms of race and class, and they wanted racial and economic diversity. This research suggests parents may choose lower quality care, not because they do not know what quality is or because they define quality care differently, but because such care may be neither available nor affordable in their communities. © 2005 Elsevier Inc. All rights reserved.

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## 1. Introduction

Child care plays a crucial role in children's social and cognitive development. The quality of care that children receive has been linked to a number of child outcomes, including cognitive and language development, pro-social behavior and skills, academic achievement, and socio-emotional development (Barnett, 1995; Burchinal, Roberts, Nabors, & Bryant, 1996; Feagans, Fendt, & Farran, 1995; NICHD Early Child Care Research Network [ECCRN], 1999; Ramey & Campbell, 1992; Shonkoff & Phillips, 2000). Good child care is associated with psychologically and socially healthier children.

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While child care quality is a critical issue for all children, it matters more for low-income children (Duncan & Brooks-Gunn, 2000; McLoyd, 1998). Low-income children, who may be less likely to have compensatory advantages available at home, are less likely to have higher quality child care than children from more affluent families (Brooks-Gunn, Brown, Duncan, & Moore, 1995; Vandell & Wolfe, 2000). Researchers have found that quality child care brings with it more developmental benefits for lower income children than for higher income children (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000). Therefore, determining how to foster low-income families' access to quality child care is a critical issue.

Rather than intervening to provide high quality publicly financed care that low-income parents would be required to use, policy makers have increased the emphasis on allowing parents, not government, to make decisions about the type of care they want to use for their children (U.S. Child Care Bureau, 2003). Yet limited financial resources constrain low-income families' ability to access quality care. Except for child care subsidies and resource and referral services, low-income families have few resources from which to demand (i.e., purchase) child care quality (Peyton, Jacobs, O'Brien, & Roy, 2001).

Delivering quality child care requires three conditions. Quality child care must be (1) available, (2) affordable, and (3) desirable. While government agencies and programmatic interventions may enlarge the supply of available child care that educators label as high quality, and while government subsidies may make these types of programs more affordable, there are no mandates for parents to use care sanctioned by either government or other accrediting agencies. For care to be seen as desirable to parents, educators, researchers and policy makers need to understand how parents define quality child care. Without information about what parents define as high quality care, it will be difficult to make quality care available to families, to design systems that make such care affordable, and to ensure that children are provided access to these types of child care situations.

Most research on child care quality has focused on how child care experts and professionals, not parents, define high quality care (Hofferth & Wissoker, 1992; Vandell & Wolfe, 2000; Whitebook, Howes, & Phillips, 1990). Consensus appears to reign among child development specialists and researchers on what they consider to be quality care.

They define high quality care in terms of those features of child care that predict positive developmental outcomes for children. These characteristics include structural features of care, such as small group size, low child-caregiver ratios, and higher staff qualifications related to education, training, and experience (Whitebook, Sakai, & Howes, 1997). Characteristics also include process features of care, such as frequent and more positive child-caregiver interactions and frequent cognitive stimulation provided by caregivers (NICHD ECCRN, 2001a, 2001b). For example, ECCRN researchers suggest that the most important aspects of high quality care are those related to the kinds of language caregivers direct to the children, such as responding to vocalizations, asking questions, and talking to children in positive ways.

Yet for parents, the people who select care for their children, less is known about how they define child care quality. Research comparing parent reports of child care quality with ratings of trained observers found that parents attached importance to the same child care characteristics valued by childhood development specialists (Cryer & Burchinal, 1997; Cryer, Tietze, & Wessels, 2002). Parents overestimate the quality of their own children's care; in particular, they overestimate the quality of the very characteristics they deem most important. These findings suggest that parents may be less able to critically assess the features of child care with which they are most concerned.

This study investigates how low-income families evaluate child care quality by examining the child care preferences of a sample of low-income African American parents. We employ the factorial survey method, a method used to assess people's perceptions and rankings of individual attributes associated with complex multidimensional phenomena. This method permits a simultaneous assessment of how respondents evaluate and make tradeoffs among multiple child care characteristics. The factorial survey technique is used to determine the child care characteristics that people believe constitute quality care for this sample. This research conceptualizes child care as a "bundle of attributes"—a term used in economics to denote multidimensional commodities (Galster, 2001). The factorial survey method allows us to decompose the child care bundle to assess how individuals construct child care quality.

### *1.1. What do we know about child care preferences?*

Identifying child care preferences has been approached in two ways. The first approach infers parents' child care preferences from the arrangements they utilize. The second approach directly assesses parents' stipulated preferences for child care.

Research of largely national representative samples indicates that the type of child care used tends to vary with the age of the child. Younger children tend to be cared for more by relatives, neighbors or friends—kin and kith care. Older children are more concentrated in center care (Capizzano, Adams, & Sonenstein, 2000; Ehrle, Adams, & Tout, 2001; Huston, Chang, and Gennetian, 2002; NICHD Early Child Care Research Network, 2001; Sonenstein, Gates, Schmidt, & Bolshun, 2002; Weinraub, Kochanoff, & Shlay, 2002). The higher use of center care for older children has been interpreted to indicate that parents prefer the socialization and educational experiences offered by centers for their preschool-age children (Huston et al., 2002; Larner & Phillips, 1994; Mason & Kuhlthau, 1989; Pungello & Kurtz-Costes, 1999). The use of informal care for younger children may reflect either parental preference for more personalized care for infants or the existence of more restricted child care options for infants in the formal child care market (Pungello & Kurtz-Costes, 1999).

Across all ages, low-income families are more likely than higher income families to rely on kin and kith care although the extent of relative care use varies widely from state to state (Capizzano et al., 2000; Sonenstein et al., 2002). The higher use of kin and kith care may indicate either a preference of low-income families for child care in the informal market or reflect that many low-income families cannot afford care in the formal market (Brush, 1987; Huston et al., 2002; Phillips, 1995; Polit & O'Hara, 1989).

Race and ethnicity appear to play a role in the choices families make about child care (Fuller, Holloway, & Liang, 1996; Huston et al., 2002; Wise & Sanson, 2000). African American families tend to utilize center care at a higher rate than either White or Latino families (Fuller et al., 1996). Relative care use is more common for Hispanic families compared with African American and White families (Capizzano et al., 2000; Ehrle et al., 2001). These differences in child care use by race and ethnicity may indicate different preferences for child care (Early & Burchinal, 2001). They may also, however, reflect constraints on choice based on family income, employment, and child care availability.

Overall, inferring child care preferences from child care use is difficult because choices are constrained by what is available on the child care market. This may be particularly true for low-income families who have fewer choices (Peyton et al., 2001; Pungello & Kurtz-Costes, 1999). Not surprisingly, many low-income families report desiring child care situations that are different from the one they are currently using (Cryer & Burchinal, 1997; Kisker & Silverberg, 1991; Kontos, Howes, Shinn, & Galinsky, 1995; Meyers, 1995; Sonenstein & Wolf, 1991).

When asked what they want from child care, parents cite quality as a major consideration, particularly in reference to the characteristics of the provider and the physical features of the child care facility (Bogat & Gensheimer, 1986; Cryer & Burchinal, 1997; Cryer et al., 2002; Hofferth, Shauman, Henke, & West, 1998; Peyton et al., 2001). Parental preferences appear to converge over features of quality (Larner & Phillips, 1994; Phillips, 1995) although the strength of these preferences may vary by income and education (Cryer et al., 2002; Peyton et al., 2001). Overall, parents emphasize the types and quality of interaction taking place between their child and the caregiver and place less emphasis on the structural features of care (e.g., a license) (Cryer & Burchinal, 1997; Cryer et al., 2002; Meyers, 1993; Peyton et al., 2001; Shinn, Phillips, Howes, Galinsky, & Whitebrook, 1990).

Research also suggests that child care preferences may be related to cultural differences in child-rearing beliefs and practices (Fuller et al., 1996; Liang, Fuller, & Singer, 2000). Latino families appear to shy away from formal child care programs and gravitate toward care by relatives or caregivers with whom they are familiar or share similar childrearing attitudes and practices (Fuller et al., 1996; Holloway & Fuller, 1999). Compared to White families, African American families with preschool-age children prefer care arrangements that emphasize instruction that is didactic rather than play-oriented (Holloway, Rambaud, Fuller, & Eggers-Piérola, 1995). African American parents of elementary school students have been shown to be more likely than White families to emphasize the importance and utility of homework, examinations and structured forms of instruction (Stevenson, Chen, & Uttal, 1990). Thus, it may be that African American families also place a special emphasis on the educational aspects of child care, believing that these types of experiences are necessary for social and economic advancement (Stevenson et al., 1990).

Child care preferences also vary with other family characteristics, particularly maternal education and employment (Hofferth et al., 1998; Peyton et al., 2001; Pungello & Kurtz-Costes, 1999). Education and employment appear to influence the level of emphasis that parents place on cognitive and social activities provided in care arrangements for children 3 years old and older (Johansen, Leibowitz, & Waite, 1996). Parents with more education, income and less parenting stress were more likely to emphasize quality when choosing a child care situation (Peyton et al., 2001). Parents with more education tend to view the role of child care as a setting in which preschool-aged children can learn and prepare for the grade-school years (Larner & Phillips, 1994).

Research on child care preferences tends to view parents as discriminating among aspects of care related to their children as the consumers of care; it focuses on children's child care experiences. This child-centered perspective focuses on the how parents evaluate child care as it may affect their children. But child care affects more than children; it affects parents as well. And parents, not developmental psychologists or child care experts, make child care decisions based on what they perceive to be a quality child care situation from their vantage point as busy, working, and economically constrained people. Therefore, another perspective focuses on preferences for characteristics associated with child care that do not directly affect the child. This perspective views parents as consumers of care and looks at how these non-child specific attributes affect how people evaluate child care situations (Blau, 1991; Peyton et al., 2001). These factors are part of the environmental context in which child care decisions are made (Pungello & Kurtz-Costes, 1999).

For example, parents may prefer and make decisions about care based on location, cost, access to transportation and other features associated with the parents' ability to access the care and get their child in and out of the facility. While parents' desires for accessibility, convenience and affordability may coincide with their desires for child care features associated with child care quality, they also may not. Some research suggests choice of care for its non-quality related features may be influenced by family characteristics; one study found that child care choices based on "practical" reasons (child care fees, hours of operation, location and availability) over quality reasons were influenced by family income as well as the level of parenting stress within the household (Peyton et al., 2001). Moreover, if quality child care situations are inaccessible, unaffordable and inconvenient, they may not be realistically available. How parents as consumers of care evaluate child care based on their budget and transportation requirements is important to establishing the critical features associated with the child care bundle (Blau, 1991).

### *1.2. Limitations of prior work*

Contemporary knowledge of how parents evaluate child care quality is limited in three ways. First, findings on child care preferences reflect the child care market. Child care preferences reflect real world market constraints. What parents want from child care independent of what the market offers and deems possible is not clearly understood.

Second, parent child care decision-making reflects trade-offs among different child care characteristics. Parents may give up some characteristics that they consider to be important because of the presence of others that they view as more important. Traditional survey research cannot assess how people make trade-offs among different child care characteristics.

Third, child care is a multidimensional phenomenon. The many dimensions of child care are often found in predictable packages and there is a high correspondence between the presence of particular bundles of characteristics (e.g., educated providers, child care centers, books and equipment). Therefore, expressed preferences for one characteristic (e.g., center versus home-based care) may proxy for preferences for other characteristics (e.g., education versus play activities).

### *1.3. This study*

This study investigates child care preferences by taking into account these limitations of prior research. First, it asks parents to evaluate simulated child care arrangements in which the child care characteristics are organized together in unpredictable packages and are uncorrelated. Second, it allows parents to make trade-offs among different child care characteristics and permits research that measure and compares the values placed on each characteristic. Third, these simulated child care environments account for the multidimensional nature and complexity of real world child care facilities. This study employs the factorial survey technique to assess low-income African American parents' child care preferences.

## **2. Methods**

### *2.1. The factorial survey technique*

The factorial survey technique is used to assess how people make judgments over multidimensional phenomena (for an overview of the technique, see Rossi & Anderson, 1982). The factorial survey technique measures the value of the individual attributes that contribute to a summative judgment. This approach has been successfully applied to a range of

topics including crime seriousness, definitions of sexual harassment, housing and neighborhood preferences, measures of household prestige, and preferences for racial integration (Durham, 1986; Emerson, Yancey, & Chai, 2001; Hunter & McClelland, 1991; Nock, 1982; Shlay & DiGregorio, 1985).

The factorial survey approach combines the primary strength of an experimental design with the complexity and realism of the survey approach. The experimental design is limited by the number of factors that can be examined at one time. The survey design is limited by the difficulty of separating out competing influences among items that covary together. The factorial survey technique permits the separation of competing influences among items that covary together across a large number of factors.

In the factorial survey approach, the vignette is the basic unit of analysis. A vignette is a written description of a multidimensional phenomenon—akin to a short story. Researchers create vignettes by randomly assigning characteristics to construct a coherent description of the phenomenon under study. The researchers then ask respondents to rate each vignette. Using multivariate techniques, researchers can examine the influence of the presence or absence of each characteristic on the variation in ratings.

Vignettes contain both “dimensions” and “levels.” A dimension is a discrete variable associated with the phenomenon being studied. A level is the specific value within a dimension. For example, child care type is a *dimension* of a child care. Family day care, center day care, relative care each constitutes individual *levels* of the dimension types of child care.

Random assignment of characteristics to each vignette is a crucial feature of this technique, ensuring that vignette characteristics are uncorrelated with each other.<sup>1</sup> Therefore, vignette descriptions often contain combinations of attributes not typically found within the real world.

## 2.2. Instrument construction

Child care dimensions to be included in this child care factorial survey instrument were identified through an extensive literature review and by using focus groups with low-income parents of young children. The literature review included work from the fields of sociology, psychology, economics, and public policy, and from diverse areas such as parent child care preferences (Johansen et al., 1996; Meyers, 1993), child care choice (Anderson & Levine, 1999; Fuller et al., 1996; Kisker & Maynard, 1991), definitions of child care quality (Blau, 1991; Emlen, Koren, & Schultze, 1999; Larner & Phillips, 1994), and child care selection among low-income families (Hofferth & Wissoker, 1992; Porter, 1991). The list of dimensions and associated levels are shown in Table 1.

The structure of vignette sentences and paragraphs were designed to combine levels with appropriate punctuation and syntax and to restrict empirically impossible combinations (e.g., accredited neighbor care). Unlikely combinations of child care dimensions were included because we were interested in testing parents' evaluation of child care combinations that may not typically exist in the real world. The vignettes were pilot tested for clarity and readability with two groups of mothers.

A computer generated the vignettes, vignette characteristics were randomly assigned, and the vignettes were produced in random order. Thirty vignettes were constructed for each respondent. These allowed for the potential of thirty combinations of vignette dimensions and levels, not all potential combinations of these items. A sample vignette is presented at the top of Table 2.<sup>2</sup>

## 2.3. Factorial survey questions

Three questions were constructed to measure parents' child care preferences. The questions and their associated rating scales are shown below the sample vignette in Table 2, as they would be presented to respondents. The first question was used to assess parents' perception of child care desirability. It asked, “How much would you like this child care for you and your family?” The second question addressed what parents considered to be a fair price for the

<sup>1</sup> For a dimension with  $q$  levels, each level appears with a probability of  $1/q$ .

<sup>2</sup> We selected dimensions from a huge range of potential items. Two dimensions that were not included were child group size and adult-to-child ratio. We did not include these two important items because we believed that these items would elicit a strong social desirability bias because of publicity about these items. We decided to include more subtle pairings of dimensions, leaving future research to pit selected variables against these two variables in future factorial surveys.

Table 1  
Child care factorial survey dimensions and levels

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Subsidy

1. Subsidy acceptance
  - a. Accepts subsidized children
  - b. Does not accept subsidized children
  - c. [Blank]<sup>a</sup>

Convenience

2. Commute time from home to child care
  - a. 15-min commute from home to child care
  - b. 30-min commute from home to child care
  - c. 45-min commute from home to child care
3. Commute time from child care to work
  - a. 15-min commute from child care to work
  - b. 30-min commute from child care to work
  - c. 45-min commute from child care to work
4. Evening and weekend care
  - a. Care during the evenings and weekends
  - b. [Blank]<sup>a</sup>

Type of care

5. Type of care
  - a. Center care
  - b. Family day care
  - c. Relative care
  - d. Neighbor care
6. Home/out-of-home care
  - a. In the relative's home
  - b. In your home
  - c. In the neighbor's home

Quality

7. License
  - a. Is licensed
  - b. Is unlicensed
  - c. [Blank]<sup>a</sup>
8. Accreditation status
  - a. Accredited
  - b. Meets the standards of quality as rated by a national child care organization
  - c. Has not been rated for quality by a national child care organization
  - d. [Blank]<sup>a</sup>

Caregiver characteristics

9. Care provider training
  - a. Has specialized training in child development and education
  - b. Has some training in child care
  - c. Has little training in child care
10. Care provider experience
  - a. Has a lot of experience taking care of children in a child care setting
  - b. Has some experience taking care of children in a child care setting
  - c. Does not have any experience taking care of children in a child care setting
11. Care provider's or care providers' disciplinary attitude
  - a. Warm and strict
  - b. Warm and not strict
  - c. Not warm but strict

Table 1 (Continued)

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12. Care providers' training
a. Have specialized training in child development and education
b. Have some training in child care
c. Have little training in child care
13. Care providers' experience
a. Have a lot of experience taking care of children in a child care setting
b. Have some experience taking care of children in a child care setting
c. Do not have any experience taking care of children in a child care setting
Characteristics of children
14. Ethnicity of children
a. All white
b. All African American
c. Racially mixed
15. SES of children
a. A mix of children with low and high incomes
b. Mostly children from high income families
c. Mostly children from low-income families
16. Subsidy-usage of children
a. None of the children are receiving a subsidy
b. Some of the children are receiving a subsidy
c. Most of the children are receiving a subsidy
d. [Blank] <sup>a</sup>
Caregiver–child interactions
17. Frequency of caregiver–child interactions
a. The children receive a lot of individual attention
b. The children do not receive a lot of individual attention
Curriculum
18. Curriculum
a. Has planned activities for learning and playing
b. Has few planned activities for learning and playing
19. Religiosity
a. Includes religious teaching
b. Has no religious teaching
c. [Blank] <sup>a</sup>
Caretaking routines
20. Safety and sanitation practices of care provider
a. Always makes sure that everything appears to be clean and safe for the children
b. Does not always make sure everything appears to be clean and safe for the children
c. [Blank] <sup>a</sup>
21. Safety and sanitation practices of care providers
a. Always make sure that everything appears to be clean and safe for the children
b. Do not always make sure everything appears to be clean and safe for the children
c. [Blank] <sup>a</sup>

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<sup>a</sup> When blank, no mention of this variable is included in the vignette.

given child care arrangement without regard to its affordability. It asked, “In your view, what would be a *fair weekly price* for this child care? Please disregard whether or not you could afford the fair price.” The third question addressed people’s expressed willingness to pay subject to their income constraints. It asked, “How much would you be willing to pay *per week* for this child care.”

Table 2  
Sample child care vignette

This is a relative care arrangement in the relative's home that is a 15-minute commute from home to child care and a 30-minute commute from child care to work. The arrangement is accredited. It accepts subsidized children and offers care during the evenings and weekends.

The care provider has some training in child care. The care provider does not have any experience taking care of children in a child care setting.

The care provider is not warm but strict. The children receive a lot of individual attention.

The program has planned activities for learning and playing.

The care provider always makes everything appear to be clean and safe for the children. The children cared for are racially mixed and are mostly children from high income families. Most of the children are receiving a subsidy to help pay for the cost of care.

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Please circle the number that best corresponds with your answer.

1. How much would you like this child care for you and your family?

Not at all Very much

1-----2-----3-----4-----5-----6-----7-----8-----9

2. In your view, what would be a fair weekly price for this child care? Please disregard whether or not you could afford the fair price.

\$0 <\$20 \$21-\$40 \$41-\$60 \$61-\$80 \$81-\$100 \$101-\$120 \$121-\$140 \$141-\$160 \$161-\$180 >\$181

1-----2-----3-----4-----5-----6-----7-----8-----9-----10-----11

3. How much would you be willing to pay per week for this child care?

\$0 <\$20 \$21-\$40 \$41-\$60 \$61-\$80 \$81-\$100 \$101-\$120 \$121-\$140 \$141-\$160 \$161-\$180 >\$181

1-----2-----3-----4-----5-----6-----7-----8-----9-----10-----11

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The rating scale associated with the child care desirability question was anchored on a nine-point scale where one equaled “Not at all” and nine equaled “Very much.” The rating scale used for the willingness to pay and fair price questions reflected dollar amounts taken from child care expenditures reported from a low-income parent sample (Shlay, Weinraub, Harmon, & Tran, 2004). In that study, respondents reported paying as little as nothing per week up to about \$200 per week. The scales range from \$0 to >\$180 in increments of \$20 anchored around the mean at \$81–\$100.

#### 2.4. The sample

Potential study participants were selected from parents who participated in a previous study on barriers to child care subsidies (Shlay et al., 2004). In the previous study, we identified low-income families by randomly selecting households drawn from a set of Philadelphia zip codes that appeared, according to 1990 U.S. Census data (the data

available at the time), to include residents who varied by race (White and African American) and were low-income. To qualify for the previous study, parents had to (1) have a child under 4 years of age, (2) be over 18 years of age, and (3) be employed. More than 12,000 households were contacted through random digit dialing to identify these parents.

Because the racial composition of neighborhoods within the identified zip codes had changed between 1990 and 2000, we obtained an inadequate number of White respondents to support comparative analyses of White and African American parents. Therefore, we restricted our sample to African American parents. The sample for the previous study, from which this sample was selected, consisted of 457 low-income, African American parents from low-income Philadelphia zip codes.

Participants eligible for this study of child care preferences were parents who participated in the previous study, had agreed to take part in a future study, and whose income was at or under 80% of the Metropolitan Statistical Area (MSA) median for the Philadelphia area (\$41,392, U.S. Census Bureau, 2000). Using these criteria, we identified 316 potential eligible participants. Of these, 143 (45%) parents participated in this study that required parents to visit the university offices. Compared to non-participant parents, participating parents reported higher monthly incomes (\$2166 for participating parents versus \$1939 for non participating parents,  $t(307) = 2.30, p < .05$ ) and were more likely to use registered or licensed child care (62.11% versus 37.9%,  $\chi^2(1) = 5.80, p < .05$ ). No differences were found between the two groups on respondent's age, marital status, or level of education, or on the number of children in the household, the child's age, the type of child care used, the amount of time in child care per week, the number of days in child care per week, whether child care was paid for out-of-pocket, the amount paid for child care, whether the family received help paying for child care through a subsidy, friends and family, or other sources, and the respondent's overall satisfaction level with the current child care arrangement. Respondents received \$25 for their time, and they were reimbursed for travel and child care costs.

The survey was administered in person in small groups at our laboratory. Respondents were given the choice of either reading the vignettes themselves or having them read aloud. All but one read the vignettes by themselves.<sup>3</sup>

Table 3 shows the family, socioeconomic, and child care characteristics of the respondents. The vast majority (72%) were raising their children without a partner or spouse. All respondents except one were mothers. The mean age of the respondents was 31 years. Fourteen percent of the parents did not have a high school degree, one-third of the parents (31%) had completed only high school or received a GED, 40% had attended college, and 8.5% had a bachelor's degree. Over 80% of the parents were in the labor force.<sup>4</sup>

Most parents were very satisfied or somewhat satisfied with their current child care arrangement (94%). Most parents (84%) paid for their child care; the average cost was \$78 per week. About one-fourth (23%) were using a child care subsidy to help pay for their arrangement.

The mean age of the youngest child was approximately 3 years old; the average family contained two children. The mean monthly family household income was \$1817. Over half of the families (53%) used center or preschool care for at least one child. About 22% used non-relative care in the non-relative's home or in their own home. Approximately 15% used relative care either in the relative's or their own home. Three quarters (75%) of the arrangements were licensed or registered as reported by the respondent. Children were in care for an average of close to 40 h per week.

## 2.5. Sample size

One major advantage of the factorial survey method is how the sample size is defined. In the conventional survey design, the sample size is determined by the number of participants in the study, and researchers are interested in variation across subjects and subject groups. For factorial surveys, the unit of analysis is the vignette, not the participant, and the researcher is interested in the variation across vignettes. In factorial surveys, intra-class correlations due to within

<sup>3</sup> Two respondents were dropped from the analyses because we suspected their data to be unreliable. For one participant, the scores for all three rating scales failed to vary, leading us to believe that the participant either did not read the vignettes or did not understand the instructions. The other participant appeared to rush through the surveys, did not seem to pay close attention, and had little variability in her ratings.

<sup>4</sup> In comparison, figures from the 2000 Public Use Microdata Sample (PUMS, using a 5% sample) show that the mean age of low income African American mothers with children under 6 years in Philadelphia was 28 years. In the PUMS, 23% of the 5% sample did not have a high school degree, 37% had completed only high school or received a GED, 30% had attended some college, and 10% had a college degree. Thus, our sample of mothers was somewhat older (31 years versus 28 years) and slightly better educated on average than low-income African American mothers in the sample collected as part of the supplemental Census Bureau figures for Philadelphia.

Table 3  
Respondent characteristics (N = 141)

Characteristic	
Gender of respondent	
% Female	99.3
Age of respondent	
Mean	31.2
S.D.	7.6
Age of youngest child	
Mean	2.9
S.D.	1.1
Marital status	
% Married	21.9
% Divorced or widowed	5.7
% Single, not living with partner	57.5
% Single, living with partner	14.8
Number of children	
Mean	2.3
S.D.	1.2
Highest grade or year of school completed	
% Did not complete 12th grade	13.5
% High school diploma/GED equivalent	31.9
% Vocational/technical program	5.0
% Some college	40.5
% Bachelor's degree	8.5
% Graduate or professional school	0.7
Currently employed	
% Yes	80.1
Monthly household income <sup>a</sup> (\$)	
Mean	1817
S.D.	1117
Child care arrangement used for child	
% Center/preschool	53.2
% Relative, in own home	9.9
% Relative, in relative's home	13.5
% Non-relative, in own home	1.4
% Non-relative, in non-relative's home	14.9
% Maternal care	7.1
Child care arrangement licensed or registered	
% Yes	75.2
Number of hours per week child is in care	
Mean	38.7
S.D.	12.9
Number of days per week child is in care	
Mean	4.9
S.D.	0.6
Pay for arrangement	
% Yes	84.0
Amount paid for arrangement per week (\$)	
Mean	78
S.D.	59
Sources of income to help pay for child care	
% Subsidy	27.6
% Employer	2.1
% Help from relatives or friends	14.2
% Other sources	0.7

Table 3 (Continued)

Characteristic	
Respondent is the primary decision-maker of where the child is cared for	
% Yes	98.6
Satisfaction with child care	
% Very satisfied	51.8
% Somewhat satisfied	42.6
% Somewhat dissatisfied	3.5
% Very dissatisfied	2.1
Access to a car	
% Yes	56.7
Access to public transportation	
% Yes	92.2

<sup>a</sup> Includes spouse/live-in partner's income and income from other sources (e.g., child support, alimony, food stamps, workers compensation).

subject variance are not critical to the analyses. Because the dimensions contained within vignettes are randomly assigned and thus, are orthogonal to one another, each vignette is considered independent (Rossi & Anderson, 1982; Thurmon, Lam, & Rossi, 1988). Therefore, the sample size is the number of vignettes multiplied by the number of participants. Because there were 30 vignettes for each of the 141 participants, the final sample size for these analyses was 4230. (There were no missing data.) The vignette as the unit of analysis has been applied in previous research studies that have utilized the factorial survey design and each of these studies have used the number of vignettes multiplied by the number of participants as the sample size in analyses. For more information, see O'Toole, O'Toole, Webster, and Lucal (1993) and Shlay and DiGregorio (1985).

## 2.6. Model selection

Distributions for each set of vignette ratings are shown in Tables 4 and 5. They show a clustering of scores at the lower extreme of the distributions (28.1%, 12.6% and 22.8%, respectively) raising the possibility of methodological problems associated with using ordinary least squares regression—the preferred model for this type of research. Thus, we assessed the possibility of truncation bias and whether the rating distributions violated the assumptions of normality required for using ordinary least square regression. Because this was not the case, we felt comfortable selecting the ordinary least squares model for these analyses,

Ordinary least squares were employed using the following model:

$$R_i = b_0 + b_i D_{ik1} + \dots + b_i D_{ik} + b_k M_k + \varepsilon_i$$

Table 4

The frequency distribution of responses to vignette questions of desirability ( $N=4230$ )

Desirability rating	Desirability (%)
1	28.1
2	14.0
3	14.8
4	11.9
5	12.3
6	7.0
7	5.8
8	3.2
9	3.0
Mean	3.44
S.D.	2.26

Table 5

The frequency distribution of responses to vignette questions of fair weekly price or willingness to pay ( $N=4230$ )

Weekly price category (\$)	Fair weekly price (%)	Willingness to pay (%)
0	12.6	22.8
10	4.3	6.4
30	8.7	10.8
50	17.5	17.9
70	19.6	12.3
90	17.6	5.8
110	11.0	2.8
130	5.5	1.0
150	2.3	.3
170	.7	.1
190	.3	
Mean	65.64	49.50
S.D.	40.78	39.14

where  $R_i$  = the rating given to vignette  $i$ ;  $b_0$  = the regression intercept;  $b_i$  = the coefficient associated with the  $D_{ik}$ th child care characteristic;  $b_k$  = the coefficient associated with the  $M_{ik}$  vignette rating;  $D_{ik}$  = the child care characteristic contained in vignette  $i$  for every  $k$ th respondent;  $M_k$  = the mean vignette rating for every  $k$ th respondent;  $\varepsilon$  = random error.

Each level of the various dimensions is coded in binary form: 1 if present and 0 if absent. One level is omitted for each dimension to avoid linear dependency. The unstandardized regression coefficients represent the mean difference in ratings between vignettes containing the given level and vignettes containing the omitted level, all other dimensions held constant. Each regression coefficient represents the contribution of each level variable to the overall vignette ratings.

The model controls for the respondents' mean vignette ratings because respondents may have different rating systems (Garrett, 1982; Nock, 1982). Some people may have higher standards and therefore give lower ratings overall to all of the vignettes. This means that their average scores, overall, would be lower than other respondents. At the same time, some respondents may have lower standards (that is, give higher ratings) overall to all of child care vignettes, and their average scores would be higher than other respondents. Controlling for the mean ratings corrects for this across subject variability so that each coefficient represents the impact on the vignette rating net of respondent propensity to rating vignettes either higher or lower.

## 2.7. Model specification

We report two different types of model specifications. The first model examines the contribution of each level to the variation in the rating associated with each vignette. For example, it assesses whether family day care is preferred compared to center care, whether licensed care is preferred compared to unlicensed care. This analysis compares the impact of varying levels on child care preferences *within* each dimension.

This type of analysis, however, does not permit a comparison of which dimensions are most important. Therefore, a second model specification examines the contribution of each dimension to vignette rating. This incorporates a technique known as "coding proportional to effect" (Rossi & Anderson, 1982).<sup>5</sup> Using this type of analysis, the standardized coefficients ( $\beta$ ) provide an index of the relative importance of each dimension compared to all others.

<sup>5</sup> Coding proportionate to effect is accomplished by creating a single quantitative dimension from each set of levels contained within the dimensions. Each non-omitted level is given a value that is equal to the unstandardized regression coefficient in the corresponding multiple regression analysis. The omitted level of each dimension is coded as zero. Estimating rating scores as a function of the effect-coded dimensions produces both unstandardized and standardized coefficients. The unstandardized coefficients for the dimensions are equal to one. The standardized coefficients ( $\beta$ ) provide an index of the relative importance of each dimension.

## 2.8. Comparing subgroups within the sample

We tested how child care preferences may vary by family characteristics. Subgroups were designated according to several family characteristics, including maternal education and amount of work hours, child care type used, age of youngest child, and whether respondents had access to a car. To compare subgroups, we estimated separate regression equations for each subgroup and compared the coefficients associated with each independent variable using a statistical formula calculating  $z$  scores which are conceptually similar to statistical measures that compare group differences (e.g., independent-samples  $t$ -tests).<sup>6</sup>

## 3. Results

### 3.1. The effects of child care levels on vignette ratings

Table 6 presents the regression analyses of the effects of child care characteristics on perceived child care desirability, fair weekly price, and willingness to pay for each vignette. Recall that the unit of analysis is the vignette, not the respondent. Column one shows the impact of child care characteristics on perceptions of child care desirability; the dependent variable is the child care rating score. Each coefficient represents the net increase or decrease in the overall vignette rating associated with each child care characteristic.

Columns two and three show the effects of these characteristics on perceptions of fair weekly price and willingness to pay, respectively; the dependent variables are the fair price or price willing to pay for week for child care *in dollars*. Each coefficient represents the net increase or decrease in weekly child care price associated with each child care characteristic.

For all three specifications, the coefficients represent the extent to which ratings are affected by the presence of one particular characteristic compared to the omitted level. For example, the coefficient of .261 associated with the level “arrangement is licensed” for the child care desirability equation indicates that when this characteristic is present in the vignette, it raised the respondent’s rating by .261 compared to when the omitted level (blank text) was present. Similarly, the coefficient of  $-.269$  associated with “arrangement is unlicensed” indicates that the presence of this level lowered the rating by .269 compared to the omitted variable (blank text).

#### 3.1.1. Desirability ratings

Descriptors of caregiver behavior, experience, training and affect were the most critical features influencing parental ratings of desirability. Parents rated child care situations higher where caregivers provide a lot of individual attention to children ( $b = .826$ ), create and maintain a safe and sanitary care giving environment ( $b = .455$ ), with a lot or some experience taking care of children ( $b = .776$  and  $.440$  for a lot and some experience, respectively), with specialized training and education in child development or some training in child care ( $b = .542$  and  $.223$  for specialized and some training, respectively) and who are warm (regardless of whether strict or not strict) ( $b = .513$  and  $.605$  for warm and not strict and warm and strict, respectively). They also rated care situations higher when they provide planned activities for learning and playing ( $b = .373$ ).

Especially critical were features of child care that indicated the child care situation’s regulatory status and whether it was certified or accredited by an outside organization. Parents’ rated child care situations higher when they were described as licensed ( $b = .269$ ) and accredited ( $b = .184$ ).

Specifying a child care situation as unregulated or where the caregiver does not keep things safe and clean for the children caused child care desirability to drop considerably. Vignettes describing child care as “unlicensed” lost .269 points, all else equal. Those containing the level that the provider does not always make sure everything appear to be

<sup>6</sup> This formula assesses the degree of difference between  $b$  coefficients. Larger  $z$ -score values indicate a greater difference in the regression coefficients. The following formula was used:

$$z = \frac{b_{1j} - b_{2j}}{\text{sqrt}(se_{1j}^2 + se_{2j}^2)}$$

where  $b_{1j}$  and  $b_{2j}$  = the  $b$  coefficients associated with the  $j$ th child care characteristic of the first and second groups, respectively;  $se_{1j}^2$  and  $se_{2j}^2$  = the standard errors associated with the  $j$ th child care characteristic of the first and second groups, respectively.

Table 6

The impact of child care characteristics on child care desirability, fair weekly price, and willingness to pay ratings (shown are the *b* coefficients with associated standard errors in parentheses)

Dimension and level	Desirability (\$)	Fair price (\$)	Willingness to pay (\$)
<b>Subsidy acceptance<sup>1</sup></b>			
Accepts subsidized children	.197* (.099)	2.338 (1.657)	2.079 (1.621)
Does not accept subsidized children	-.148* (.064)	-.280 (1.068)	-1.409 (1.045)
<b>Commute time from home to child care<sup>2</sup></b>			
15-min commute from home to child care	-.222 (.201)	-.295 (3.373)	-4.171 (3.300)
30-min commute from home to child care	-.308 (.201)	1.028 (3.381)	-4.158 (3.308)
45-min commute from home to child care	-.488* (.015)	-2.057 (3.382)	-4.438 (3.309)
<b>Commute time from child care to work<sup>3</sup></b>			
15-min commute from child care to work	.307*** (.064)	.737 (1.074)	1.933 (1.051)
30-min commute from child care to work	.097 (.064)	-.640 (1.068)	-.010 (1.045)
<b>Evening and weekend care<sup>4</sup></b>			
Care during the evenings and weekends	-.039 (.052)	.029 (.873)	.191 (.854)
<b>Type of care<sup>5</sup></b>			
Family day care	-.132 (.073)	-2.373 (1.231)	-2.156 (1.204)
Relative care	.129 (.179)	.762 (3.006)	-.097 (2.941)
Neighbor care	-.061 (.207)	1.418 (3.479)	-.692 (3.403)
<b>In-home/out-of-home care<sup>6</sup></b>			
In the relative's home	-.136 (.175)	-6.116* (2.946)	-1.966 (2.882)
In your home	-.184 (.126)	-4.792* (2.111)	-3.758 (2.066)
In the neighbor's home	-.139 (.138)	-3.533 (2.324)	-3.255 (2.274)
<b>License status<sup>7</sup></b>			
Arrangement is licensed	.261*** (.063)	3.625*** (1.062)	3.129** (1.040)
Arrangement is unlicensed	-.269*** (.064)	-6.131*** (1.071)	-5.315*** (1.048)
<b>Accreditation status<sup>8</sup></b>			
Arrangement is accredited	.184* (.074)	3.386** (1.239)	3.537** (1.212)
Meets the standards of quality as rated by a national child care organization	.124 (.073)	4.613*** (1.230)	3.757** (1.203)
Has not been rated for quality by a national child care organization	-.039 (.073)	-.741 (1.229)	-.169 (1.203)
<b>Caregiver's/caregivers' training<sup>9</sup></b>			
Has/have specialized training in child development and education	.542*** (.064)	8.703*** (1.074)	7.454*** (1.051)
Has/have some training in child care	.223*** (.064)	3.360** (1.068)	3.381** (1.045)
<b>Caregiver's/caregivers' experience<sup>10</sup></b>			
Has/have a lot of experience taking care of children in a child care setting	.776*** (.063)	10.157*** (1.066)	9.467*** (1.043)
Has/have some experience taking care of children in a child care setting	.440*** (.064)	6.934*** (1.076)	6.820*** (1.052)
<b>Caregiver's/caregivers' level of warmth and disciplinary attitude<sup>11</sup></b>			
Warm and not strict	.513*** (.064)	3.802*** (1.072)	5.944*** (1.048)
Warm and strict	.605*** (.064)	5.276*** (1.076)	7.138*** (1.052)
<b>Race of children<sup>12</sup></b>			
All African American	.488*** (.063)	2.725* (1.062)	4.151*** (1.040)
Racially mixed	.522*** (.064)	4.529*** (1.074)	5.234*** (1.051)
<b>Income of children's families<sup>13</sup></b>			
A mix of children with low and high incomes	.158* (.064)	2.955** (1.074)	3.303** (1.051)
Mostly children from high income families	.038 (.063)	5.745*** (1.063)	3.340** (1.040)
<b>Subsidy-usage of children<sup>14</sup></b>			
None of the children are receiving a subsidy	-.321* (.127)	-3.679 (2.128)	-4.089* (2.082)
Some of the children are receiving a subsidy	-.198 (.125)	-1.095 (2.107)	-2.018 (2.061)
Most of the children are receiving a subsidy	-.036 (.128)	-1.301 (2.147)	-2.435 (2.101)

Table 6 (Continued)

Dimension and level	Desirability (\$)	Fair price (\$)	Willingness to pay (\$)
Frequency of caregiver–child interactions <sup>15</sup>			
The children receive a lot of individual attention	.826*** (.052)	10.335*** (.874)	9.961*** (.855)
Curriculum <sup>16</sup>			
Has planned activities for learning and playing	.373*** (.052)	6.869*** (.874)	6.292*** (.855)
Religiosity <sup>17</sup>			
Includes religious teaching	.109 (.063)	2.479* (1.064)	1.422 (1.041)
Has no religious teaching	−.158* (.064)	−1.384 (1.078)	−1.267 (1.054)
Safety and sanitation practices of caregiver(s) <sup>18</sup>			
Always make(s) sure that everything appears to be clean and safe for the children	.455*** (.065)	5.790*** (1.085)	6.116*** (1.061)
Do/does not always make sure everything appears to be clean and safe for the children	−.904*** (.063)	−13.097*** (1.062)	−13.779*** (1.039)
Respondent mean rating	.993*** (.022)	18.840*** (.315)	18.434*** (.323)
Constant	−1.668	−46.119	−42.084
R <sup>2</sup>	.451	.523	.504
N	4230	4230	4230

Shown are the *b* coefficients and their associated standard errors in parentheses. Omitted variables are as follows: 1: [blank]; 2: [blank]; 3: 45-min commute from child care to work; 4: [blank]; 5: center care; 6: in a neighbor's home; 7: [blank]; 8: [blank]; 9: has/have little training in child care; 10: do/does not have any experience taking care of children in a child care setting; 11: not warm but strict; 12: all white; 13: mostly children from low-income families; 14: [blank]; 15: the children do not receive a lot of individual attention; 16: has few planned activities for learning and playing; 17: [blank]; 18: [blank].

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .

clean and safe for the children lost .904 points, all else equal, representing the largest effect associated with any child care characteristic in this analysis.

Respondents did not rate child care situations either higher or lower based on the type of care described—either family day care, relative care, center care or neighborhood care. Although statements about the licensing and accreditation positively influenced child care desirability, the presence or absence of these factors in the vignettes had no effect on the rating.

Child care characteristics that largely affect parents' experiences more than children also influenced parents' ratings of child care desirability. Extreme commute times to child care facilities, either very short or very long, affected child care desirability. Parents rated vignettes with longer commutes lower ( $b = -.488$  for a 45 min commute from home to child care compared to blank text). Parents rated vignettes with shorter commutes higher ( $b = .307$  for a 15 min commute from child care to work compared to a 45 min commute).

Parents were concerned with the socio-economic and racial mix of the children in the facility, its religiosity, and whether the facility accepted and included children receiving child care subsidies. They expressed preferences for child care arrangements with all African American children or with a racially mixed group ( $b = .488$  and  $.522$  compared to all White or African American and racially mixed, respectively) as well as arrangements with a mix of children with high and low-incomes ( $b = .158$  compared to mostly children from low-income families).

Descriptions of facilities that included religious training were not rated either higher or lower on desirability all else equal, but those that explicitly described child care with no religious training were rated lower ( $b = -.158$ ). This low-income African American sample, with a large proportion receiving child care subsidies, preferred child care settings that accepted subsidized children ( $b = .197$ ) and rated situations lower if they explicitly said they did not either accept children receiving subsidies ( $b = -.148$ ) or have any subsidy recipients in the facility ( $b = -.321$ ).

The sole child care dimension that did not have any influence on child care desirability was whether the care was offered during non-traditional hours, that is, during the evenings and weekends.

### 3.1.2. Fair price and willingness to pay ratings

Respondents were also asked about the amount of money per week that they would be willing to pay per week for the care situation described on each vignette as well as the amount that they believed was the fair weekly price for this care. The first question addressed their perception of the fair market value, independent of their own income constraints, of the care situations. The second question addressed willingness to pay given parental income constraints.

What was the fair market value of the most desirable child care characteristics? Were parents willing to pay more for those characteristics that they viewed as more desirable? As shown earlier in [Tables 4 and 5](#), parents believed that the child care situations described in the vignettes were worth more than they were willing to pay for them (mean fair weekly price and willingness to pay = \$65.64 and \$49.59, respectively).

Yet parents were willing to pay more for those characteristics they desired most. Almost uniformly, parents viewed their most desired child care characteristics as worth more than others and were willing to pay more for them as well. Less desirable characteristics lowered the perceived fair weekly price of care.

What increased the perceived fair price of care? Intrinsic characteristics that directly affect children's experiences while in care increased the perceived fair market value of care and the amount parents were willing to pay for it. For analyses of willingness to pay and fair market price, the values of the *b* coefficients in [Table 6](#) represent the net dollar increase or decrease in the perceived value of care.

Safety and sanitation (always makes sure that everything appears to be clean and safe for the children) was perceived as being worth more ( $b = \$5.79$ ) per week and respondents were willing to pay more for it ( $b = \$6.116$ ). Its absence, specifically where the caregiver does not always make sure that everything appears to be clean and safe for the children, were perceived as being worth less ( $b = -\$13.097$  and  $-\$13.779$  for fair price and willingness to pay, respectively). Parents expressed that care was worth more and were willing to pay more for care that is licensed ( $b = \$3.625$  and  $\$3.129$  for fair price and willingness to pay, respectively), accredited ( $b = \$3.386$  and  $\$3.537$  for fair price and willingness to pay, respectively), meets standards of quality as rated by a national child care organization ( $b = \$4.613$  and  $\$3.757$  for fair price and willingness to pay, respectively) and has planned activities for learning and playing ( $b = \$6.869$  and  $\$6.292$  for fair price and willingness to pay, respectively). They were willing to pay more for providers who have specialized training in child development and education ( $b = \$8.703$  and  $\$7.454$  for fair price and willingness to pay, respectively) with some training in care ( $b = \$3.36$  and  $\$3.381$  for fair price and willingness to pay, respectively), who are warm ( $b$  ranges from  $\$3.82$  to  $\$7.138$  per week), with a lot of experience taking care of children ( $b = \$10.157$  and  $\$9.467$  for fair price and willingness to pay, respectively), with some experience taking care of children ( $b = \$6.934$  and  $\$6.82$  for fair price and willingness to pay, respectively) and that give the children a lot of individual attention ( $b = \$10.335$  and  $\$9.961$  for fair price and willingness to pay, respectively).

What brought down the price of care? Parents believed that care in a relative's home or in their own home was worth less ( $b = -6.116$ , or about \$6, and  $-4.792$ , about \$5 for care in the relative's home and in the respondent's home, respectively) compared to other possible types of care. Parents thought that care should cost less and were willing to pay less if it was unlicensed (approximately \$5–\$6 less per week). Care where the provider does not always make sure everything appears to be clean and safe for the children was considered to be worth about \$13 less per week.

Although parents desired shorter commutes from either home to care or from care to work, they did not believe they should pay more for this accessibility. They thought care was worth more and were willing to pay more for situations that cared for children who were either all African American or racially mixed (approximately \$3–\$5 more per week compared to all White) and that contained either a mix of children with low- and high-income families or mostly children from high-income families (approximately \$3–\$6 more per week compared to mostly children from low-income families). Apparently these low-income families did not want their children to be in care with only low-income children, but wanted a mix of lower and upper income children in the care setting.

Parents also put an economic premium on religiosity. They valued care that included religious teaching as worth an additional \$2.50 per week.

As shown in [Table 6](#), many of the effects are congruent across all three equations. Although the magnitude of the effect may differ across these equations, their congruency means that this characteristic is consistently preferred more (or less) and considered worth more (or less) by respondents. Yet some of the effects are not congruent across the three equations. For several child care characteristics, they were preferred more by respondents but they neither were willing to pay more for it nor did they believe that it was monetarily worth more. For other characteristics, the opposite was true; these child care characteristics were considered monetarily more valuable but were not desired more. These results are summarized in [Tables 7 and 8](#).

Table 7

Child care levels with congruent effects between desirability, fair weekly price and willingness to pay ratings

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Direction of effects positive
Arrangement is licensed
Arrangement is unlicensed
Arrangement is accredited
Has specialized training in child development and education
Has some training in child care
Has a lot of experience taking care of children in a child care setting
Has some experience taking care of children in a child care setting
Caregiver warm and not strict
Caregiver warm and strict
All African American
Racially mixed
A mix of children with high and low incomes
The children receive a lot of individual attention
Curriculum has planned activities for learning and playing
Caregiver always makes sure that everything appears to be clean and safe for the child
Direction of effects negative
None of the children are receiving a subsidy
Caregiver does not make sure everything is clean and safe for the child

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Table 7 lists the child care levels with congruent effects between the desirability, fair weekly price, and willingness to pay equations. For many characteristics, those that were preferred more were considered worth more and vice versa.

Table 8 shows the child care levels with incongruent effects between the desirability, fair weekly price and willingness to pay equations. There are four types of effects shown in this table. The first column denotes those child care characteristics that were preferred more but were not valued monetarily more or less. The second column denotes those that were preferred less but were not monetarily more or less valued. The third column shows those that were considered monetarily worth more but were not preferred more. The fourth column shows those characteristics that were considered monetarily worth less but were not preferred less.

Respondents preferred child care situations more that accepted subsidized children and that were 15 min from their employment but neither felt that child care with these characteristics was monetarily worth more. They preferred less child care situations that did not accept subsidized children and that were a 45 min commute from their home. For these parents, they wanted more proximate child care that accepted child with subsidies but were not willing to pay more for these characteristics. Similarly, they preferred less care that did not have religious teaching but did not feel that the absence of religious teaching should make a difference in the cost of care. Respondents desired these characteristics but did not perceive these factors as significant to the overall bottom line associated with the pricing of child care.

Table 8

Child care levels with incongruent effects between desirability, fair weekly price and willingness to pay ratings

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Level	Preferred more, not worth more	Preferred less, not worth less	Worth more, not preferred more	Worth less, not preferred less
Accepts subsidized children	✓			
Does not accept subsidized children		✓		
45-min commute from home to childcare		✓		
15-min commute from childcare to work	✓			
In the relative's home				✓
In your home				✓
Meets the standards of quality as rated by a national childcare organization			✓	
Mostly children from high income families			✓	
Includes religious teaching			✓	
Has no religious teaching	✓			

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Table 9

Child care characteristics (levels) with highest percentage of variance explained in predicting child care desirability, fair weekly price, and willingness to pay (shown are squared zero order correlation coefficients with the dependent variable)

Level	Desirability (%)	Fair price (%)	Willingness to pay (%)
Caregiver does not always make sure that everything appears to be clean and safe for the children	5.76	3.84	4.49
Caregiver always makes sure that everything appears to be clean and safe for the children	4.04	2.04	2.66
The children receive a lot of individual attention	3.35	1.46	1.61
Has planned activities for learning and playing	1.02	.94	.79
Caregiver has a lot of experience taking care of children in a child care Setting	.96	.36	.32
Caregiver has specialized training in child development and education	.94	.81	.55
Arrangement is licensed	.77	.76	.79
Caregiver is warm and strict	.53	.16	.27
Arrangement is unlicensed	.49	.76	.56
Mean rating	26.73	41.73	39.44
Total variance explained	44.60	52.87	51.49
Total variance explained minus mean rating variance	17.87	11.14	12.05

Conversely, respondents thought care was worth more if it met standards of quality as rated by a national child care organization, contained mostly children from high income families (compared to mostly children from low-income families), and included religious teaching but they did not rank these characteristics as more desirable, all else equal. They also thought care were worth less if it was either in their own home or relative's home compared to care offered in a neighbor's home but did not prefer care more in any of these situations. Apparently, respondents thought that these characteristics were economically more valuable but they did not want them more, all else equal.

Which child care characteristics had the greatest explanatory power in predicting child care desirability, fair market price or willingness to pay? Assessing the percentage of variance explained is possible because of the approximate statistical independence of each child care level contained on the vignette, subject to restrictions. The percentage of variance explained is measured by squaring each level's zero order correlation with the each respective dependent variable. This measure is not exact because of some restrictions in the construction of the vignettes that creates some collinearity and therefore, these measures constitute approximate measures of the percentage of variance explained. While not precise, they show which child care levels had the most explanatory power. Table 9 shows the child care levels with the highest percentage of variance explained in each respective equation and the percentage of variance explained by the mean rating variable. Shown is the total amount of variance explained by all child care levels contained on the table, including the variance explained by the mean rating. The total variance explained minus the variance explained by the mean rating indicates the total amount of variance explained by these specific child care levels.

The mean desirability rating explains a large portion of the variance and accounts for much of the explanatory power of each equation. The mean desirability rating explains more of the variance in the equations predicting either perceptions of fair market value or willingness to pay, suggesting that the characteristics contained on the vignettes had a larger effect on child care desirability than on its monetary value. (About 7% more of the variance is explained by the most important child care levels for child care desirability than for either fair market value or willingness to pay.)

Nonetheless, the levels that had the most explanatory power were almost entirely the same across all three equations although the amount of variance explained varied. Caregiver behavior was the most important predictors.

Safety and sanitation ranked first. Whether caregivers always make sure that everything appears clean and safe for the children (the level with the highest amount of variance explained) or did not always make sure that everything was clean and safe for the children had the most explanatory power (the level with the second highest amount of variance explained) (the combined variance explained = 9.8%, 5.88% and 7.15% for desirability, fair price and willingness to pay, respectively).

Table 10  
The impact of child care dimensions on child care desirability, fair weekly price, and willingness to pay ratings

	Desirability			Fair weekly price			Willingness to pay		
	B (S.E.)	$\beta$	Rank	B (S.E.)	$\beta$	Rank	B (S.E.)	$\beta$	Rank
Subsidy acceptance	1.000 (.228)	.063***	10	1.000 (.498)	.029*	14	.940 (.412)	.034*	13
Commute time from home to child care	1.000 (.189)	.082***	8 <sup>a</sup>	1.000 (.429)	.025*	16	.988 (.356)	.052**	9
Commute time from child care to work	1.000 (.203)	.056***	11	1.000 (.772)	.014	17	1.007 (.467)	.023*	16
Evening and weekend care	1.000 (1.315)	.009	18	1.000 (30.285)	.000	18	1.471 (4.469)	.004	18
Type of care	1.000 (.314)	.043**	13 <sup>a</sup>	1.000 (.402)	.035*	13	.966 (.520)	.021	17
In-home/out-of-home care	1.000 (.480)	.036*	16	1.000 (.230)	.061***	7	1.007 (.451)	.043*	11
License status	1.000 (.121)	.095***	7	1.000 (.109)	.098***	4	.993 (.124)	.088***	4
Accreditation status	1.000 (.288)	.040***	15	1.000 (.194)	.055***	9	.966 (.228)	.046***	10
Caregiver's/caregivers' training	1.000 (.117)	.098***	6	1.000 (.122)	.088***	5	.999 (.140)	.078***	5
Caregiver's/caregivers' experience	1.000 (.081)	.141***	3	1.000 (.102)	.104***	3	1.022 (.107)	.105***	3
Caregiver's/caregivers' level of warmth and disciplinary attitude	1.000 (.098)	.117***	4	1.000 (.196)	.054***	10	.974 (.137)	.077***	7
Race of children	1.000 (.108)	.106***	5	1.000 (.234)	.045***	11	.967 (.189)	.056***	8
Income of children's families	1.000 (.383)	.030**	17	1.000 (.184)	.058***	8	.962 (.271)	.039***	12
Subsidy-usage of children	1.000 (.328)	.043**	13 <sup>a</sup>	1.000 (.560)	.026	15	.967 (.456)	.032*	14
Frequency of caregiver-child interactions	1.000 (.063)	.183***	2	1.000 (.084)	.127***	2	1.008 (.086)	.128***	2
Curriculum	1.000 (.139)	.082***	8 <sup>a</sup>	1.000 (.127)	.084***	6	.986 (.135)	.079***	6
Religiosity	1.000 (.237)	.048***	12	1.000 (.272)	.039***	12	.930 (.388)	.026*	15
Safety and sanitation practices of caregiver(s)	1.000 (.045)	.252***	1	1.000 (.055)	.196***	1	.996 (.051)	.214***	1
Respondent mean rating	.993 (.022)	.513	–	18.840 (.314)	.640	–	18.437 (.322)	.623	–
Constant	–1.668			–46.119			–41.965		
R <sup>2</sup>	.451			.523			.503		
N	4230			4230			4230		

<sup>a</sup> Tied ranking.

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .

Next in importance was whether the children receive a lot of individual attention (3.35%, 1.46% and 1.61% for desirability, fair price and willingness to pay, respectively). Caregiver experience and the licensing status of the facility were also important predictors but less important than caregiver behavior.

### 3.2. The importance of child care dimensions

Table 10 shows the coding proportionate to effect analyses for each of the three specifications: desirability, fair market price, and willingness to pay. These analyses permit a comparative assessment of the importance of each child care dimension to the variation in vignette ratings.

For each dimension, shown are the unstandardized coefficients and associated standard errors, and the ranking of the dimension in terms of its overall importance. By design, the unstandardized ( $b$  coefficients) regression coefficients are a constant, approximately “1” because they are linear combinations of the levels within each dimension. The  $\beta$  weights indicate the relative impact each dimension has on the overall rating across all vignettes with higher values being more important.

The safety and sanitation practices of child care providers represented the most important child care dimension evaluated. The frequency of caregiver–child interactions ranked second. Caregiver experience ranked third. Safety and sanitation, caregiver–child interactions, and care giver experiences represented the top tier of the most desired and valuable features of child care.

Although not consistent across all three equations, the second tier representing the most desired and valuable child care dimension also largely reflect characteristics associated with the care giving environment. These include caregiver’s warmth and disciplinary attitude rank, caregiver training, license status, and curriculum.

Other characteristics less focused on the children’s experiences per se also competed strongly for second tier status. These included commute time from home to child care, the race of the children in care, and the income levels of the children’s families.

The third tier represents dimensions over which respondents placed far less emphasis. These included accreditation, subsidy acceptance, commute time from child care to work, subsidy usage of children, type of care, religiosity, and in home/out of home care, and evening and weekend care.

### 3.3. *Do child care ratings vary by family characteristics?*

We tested several hypotheses concerning how child care ratings might vary by maternal and family characteristics. These characteristics included years of education, hours of employment, type of child care used, age of youngest child, and whether the respondent had access to a car. We found that parents with more education rated child care higher than less educated parents if the children received a lot of individual attention ( $z = 1.88$  for desirability,  $p < .05$ ) and if the curriculum contained planned activities for learning and playing ( $z = 1.68$  and  $1.73$  for fair price and willingness to pay, respectively,  $p < .05$ ). Parents employed full time tended to rate shorter commute times from home to child care higher than parents employed part time (for desirability,  $z = 1.84$ ,  $2.10$  and  $1.99$  for 15, 30 and 45 min commute time, respectively,  $p < .05$ ; for willingness to pay,  $z = 1.79$  and  $1.66$  for 30 and 45 min commute time, respectively,  $p < .05$ ) or not working at all (for fair price,  $z = 2.05$  and  $1.89$  for 15 and 45 min commute time, respectively,  $p < .05$ ). Parents of older children rated arrangements with learning and playing activities higher than parents of younger children ( $z = 3.37$  for desirability,  $p < .001$ ). Parents without access to a car rated commute times of any length lower than parents with access to a car ( $z = 1.77$  for desirability,  $p < .05$ ).

## 4. Discussion

How did this sample of low-income, African American parents define child care quality? What child care characteristics were deemed most desirable when evaluated outside of the real world context where predictable bundles of characteristics tend to predominate? What is quality care worth to these families? Are they willing to pay more for quality care? How *much* are they willing to pay for quality? Do family characteristics affect how parents evaluate child care desirability?

This research indicates that low-income, African American parents’ definitions of quality focuses squarely on the caregiving environment, specifically the qualifications, experience, training and behavior associated with the child care provider. They also value care that is licensed and accredited. These characteristics, however, are not as important as the specific credentials and experiences associated with the care providers themselves.

Parents also care about social characteristics of the care facility, particularly the socio-economic composition of the children in the care facility. They want their African American children to be either in all African American settings or within a racially mixed group, not in largely White settings. They want their low-income children to mix with children of higher income families as opposed to be solely with other low-income children.

Parents are somewhat concerned with child care accessibility as represented by travel time to and from the facility and whether they offered some kind of religious training. They also want the facility to accept and include children receiving some form of child care subsidy.

The type of care facility—family, center, relative or neighbor care was largely irrelevant to this sample of parents. Parents cared about the specifics of the care giving environment in terms of the training, experience, affect, and qualifications of the care provider independent of whether these providers worked in a particular kind of facility. Type of care did not serve as an indicator of quality.

Parents believed that the characteristics they defined as desirable child care situations were worth more and in the abstract, they indicated they were willing to pay more for them. By combining the coefficients associated with the characteristics deemed more valuable, we can obtain a composite price that parents believe represents the fair market value or price per week they stipulated to be willing to pay for child care. All else equal, a facility that is licensed, where the children receive a lot of individual attention, with planned activities for learning and playing, where the caregiver makes sure that everything is clean and safe for the children, has specialized training and a lot of experience, and has a warm yet strict manner is worth \$50.75 per week more than arrangements without these characteristics. For these low-income parents, this dollar amount represents approximately 65% of the \$78 they were already spending per week on care on average.

Parents appear willing to pay more for the child care features they define as quality. To be sure, the amount parents were willing to pay for the care situations described on the vignettes was less, on average, than its fair market price. But for those child care characteristics that they desired most, parents reported that they were willing to pay almost exactly what they thought it was worth. They were willing to pay \$49.56 for the bundle of child care characteristics described above, just a little more than one dollar less than they thought they were worth in total.

Parents also reported that they were willing to pay more for care that were either largely African American or racially mixed than for care that contained primarily White children as well as children from both high and low-income families. Parents placed a premium on the racial and economic characteristics of the children with whom their children's care would be shared.

Although parents desired care that was more accessible, commuting time from child care to either home or work was not a criterion used to evaluate the value of care. Parents did not believe that any particular type of care was more valuable than any other and did not factor this characteristic into their evaluation of the fair price of care.

Parents cared the most about features that influenced child safety and sanitation, how their children interacted with their provider, and the experience of the caregiver in caring for children. Above all else, parents want care that ensures that their child will be in a safe and supported care giving environment with providers who know exactly what they should be doing.

Child care preferences varied by several family characteristics. Parents with more education, compared to parents with less education, valued care in which children received a lot of individual attention. Parents employed full-time cared more about the length of the commute time compared to parents employed part-time. Parents without access to a car also cared more about the length of the commute time compared to those without a car. Parents with older children valued care more that had learning and playing activities compared to parents with younger children.

## 5. Conclusion

This study has successfully applied the factorial survey technique to studying child care evaluations. The child care vignettes included salient child care dimensions as indicated by the statistical significance and consistency of effects across a number of child care descriptors and specifications. The design of the vignettes permitted child care assessments that mirrored real world child care situations without the constraints found in the real world so that respondents exhibited judgment behavior similar to what they might face selecting a child care situation if equal access to child care were available.

The findings demonstrate that low-income, African American parents desire child care characteristics that are consistent with how child development experts define and evaluate child care quality. Parental definitions of quality mirrored professional standards. Parents preferred child care characteristics such as licensed and accredited care that often serve as indicators of quality in real world markets. In the "factorial survey world," however, licensing and accreditation deliberately do not necessarily correspond with the credentials and behaviors of providers described on the vignettes. Therefore, the findings indicate that parents placed higher value on more specific features associated with child care quality, namely the credentials and affect of providers, than on licensing or accreditation per se.

In addition, this sample defined quality in terms of race and class. These African American parents wanted their children to be among others of the same race although not necessarily *all* of the same race. Importantly, they did not want their children to be among solely poor children; they desired economic diversity within the child care setting, and they did not want their children to be the only African American children present.

What utility do these findings have in developing policies that promote low-income families access to quality care? These findings show that low-income parents wanted well trained, educated, and nurturing child care providers in a diverse setting. All else equal, they were indifferent to whether a care situation was family, neighbor or center based

care. Therefore, promoting low-income families' access to quality care requires expanding the accessibility of quality care situations for low-income families.

Research shows that the quality of most child care ranges from average to poor and that there is little high quality care available, particularly for low-income families (Jaeger & Funk, 2001; NICHD ECCRN, 2000). The findings in this study suggest that low-income families may not need to be encouraged to use quality care. Rather, their inability to gain access to quality care may not be because they hold different child care preferences from those of educational experts. In other words, this research suggests parents may choose lower quality care not because they do not know what quality is or because they define quality care differently, but because such care may be neither available nor affordable in their neighborhoods.

The child care characteristics that these low-income African American parents want are expensive. Their bottom line desire is for safety and sanitation, characteristics that are at the heart of the child care regulatory process. But they also want their children to get individual and frequent attention that requires small class sizes and higher staff–child ratios. They want experienced child care providers with specialized training in child development that requires higher salaries for professional providers. They want their children to be in economically diverse settings, suggesting that they want access to child care facilities favored by more wealthy people and therefore, potentially unaffordable for low-income families.

Promoting the accessibility of quality care for this sample of low-income, African American families would suggest the need for greater investments in child care—in training, salaries, and subsidies. A higher quality provider community would require greater remuneration. Therefore, enlarging the supply of quality care may also increase its inaccessibility to low-income families because of the costs associated with providing high quality care. For low-income families, promoting access to quality care means investing in mechanisms that increase the availability of quality child care and providing families with subsidies to ensure that they can afford to use it.

The study findings do not suggest that low-income families do not want to pay for quality care. On the contrary, parents believe that quality has economic value, and they are willing to pay more for it. They may not, however, be able to pay the full cost for quality care.

This study has focused solely on the preferences of low-income, African American parents in a large, northeastern city. One limitation of the study is that fewer than half of the eligible parents agreed to participate in the study, and participating parents were somewhat different from those parents who did not participate. In particular, the parents who participated were more likely than non-participating parents to use registered or licensed child care and they reported higher household incomes. At the same time, participating parents were not different from non-participating parents on education, type of child care used or degree of satisfaction with current child care.

Similarly, our findings concern parental reports of preferences, and there is no way to assess the validity of these parental reports. Comparing parents' reported preferences with their reports of the actual child care used would not provide additional evidence of validity, since it is possible that parents do not choose the care they prefer due to limited market conditions. Thus, these findings are limited to participating parents' reports of preferences, and the results must be interpreted with the usual caution.

Future research should incorporate the factorial survey technique to compare child care preferences by income, race and ethnicity, children's age, and child care markets across a wide distribution of families and neighborhoods. Other questions worthy of investigation concern the effects of having care that is congruent with parents' values and desires. When child care is more similar to the child care parents value, controlling for quality, do we see concomitant increases in measures of family quality of life or child outcome? Do systematic public education interventions training communities on identifying quality care change, in any way, parents' preferences for different child care characteristics?

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## References

- Anderson, P. M., & Levine, P. B. (1999). *Child care and mothers' employment decisions*. NBER Working Papers 7058, National Bureau of Economic Research, Inc.
- Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children*, 5, 25–50.
- Blau, D. M. (1991). *The economics of child care*. New York: Russell Sage.
- Bogat, A. G., & Gensheimer, L. K. (1986). Discrepancies between the attitudes and actions of parents choosing day care. *Child Care Quarterly*, 15, 159–169.
- Brooks-Gunn, J., Brown, B. V., Duncan, G. J., & Moore, K. A. (1995). Child development in the context of family and community resources: An agenda for national data collection. In *Integrating federal statistics on children: Report of a workshop*. Washington, DC: National Academy Press, pp. 27–97.
- Brush, L. R. (1987). *Usage of different kinds of child care: An analysis of the SIPP data base*. Washington, DC: U.S. Department of Health and Human Services.
- Burchinal, M. R., Peisner-Feinberg, E., Byrant, D. M., & Clifford, R. (2000). Children's social and cognitive development and child-care quality: Testing for differential associations related to poverty, gender, or ethnicity. *Applied Developmental Science*, 4, 149–165.
- Burchinal, M. R., Roberts, J. E., Nabors, L. A., & Bryant, D. M. (1996). Quality of center child care and infant cognitive and language development. *Child Development*, 67, 606–620.
- Capizzano, J., Adams, G., & Sonenstein, F. (2000). Child care arrangements for children under five: Variations across states. In *New federalism: National survey of America's families*. Washington, DC: The Urban Institute, Series B (No. B-7).
- Cryer, D., & Burchinal, M. (1997). Parents as child care consumers. *Early Childhood Research Quarterly*, 12, 35–58.
- Cryer, D., Tietze, W., & Wessels, H. (2002). Parents' perceptions of their children's child care: a cross-national comparison. *Early Childhood Research Quarterly*, 17, 259–277.
- Duncan, G. J., & Brooks-Gunn, J. (2000). Family poverty, welfare reform, and child development. *Child Development*, 71, 188–196.
- Durham, A. M. (1986). The use of factorial survey design in assessments of public judgments of appropriate punishment for crime. *Journal of Quantitative Criminology*, 2(2), 181–190.
- Early, D. M., & Burchinal, M. (2001). Early childhood care: Relations with family characteristics and preferred care characteristics. *Early Childhood Research Quarterly*, 16, 475–497.
- Ehrle, J., Adams, G., & Tout, K. (2001). Who's caring for our youngest children? Child care patterns for infants and toddlers. In *New federalism: National survey of America's families*. Washington, DC: The Urban Institute.
- Emerson, M. O., Yancey, G., & Chai, K. J. (2001). Does race matter in residential segregation? Exploring the preferences of white Americans. *American Sociological Review*, 66, 922–935.
- Emlen, Arthur C., Koren, Paul E., & Schultze, Kathryn H. (1999 October). *From a parent's point of view: Measuring the quality of child care*. Portland, OR: Portland State University, Regional Research Institute for Human Services.
- Feagans, L. V., Fendt, K., & Farran, D. C. (1995). The effects of day care intervention on teachers' ratings of the elementary school discourse skills in disadvantaged children. *International Journal of Behavioral Development*, 18, 243–261.
- Fuller, B., Holloway, S. D., Rambaud, M., & Eggers-Pierola, C. (1996). How do mothers choose child care? Alternative cultural models in poor neighborhoods. *Sociology of Education*, 69, 83–104.
- Galster, G. (2001). On the nature of the neighborhood. *Urban Studies*, 38, 2111–2124.
- Garrett, K. (1982). Child Abuse: Problems of definition. In P. H. Rossi & S. L. Nock (Eds.), *Measuring social judgments: The factorial survey approach* (pp. 177–203). Beverly Hills: Sage Publications.
- Hofferth, S. L., Shauman, K. A., Henke, R. R., & West, J. (1998). *Characteristics of children's early care and education programs: Data from the 1995 National Household Education Survey*. Washington, DC: U.S. Government Printing Office (NCES Publication No. 98-128).
- Hofferth, S. L., & Wissoker, D. A. (1992). Price, quality, and income in child care choice. *The Journal of Human Resources*, 27, 70–111.
- Holloway, S. D., & Fuller, B. (1999). Families and child care: Divergent viewpoints. In Helburn, S. (Ed.), *The child care crisis. Annals of the American Political Science Association*, 56, 98–115.
- Holloway, S. D., Rambaud, M. F., Fuller, B., & Eggers-Piérola, C. (1995). What is "appropriate practice" at home and in child care? Low-income mothers' views on preparing their children for school. *Early Childhood Research Quarterly*, 10, 451–473.
- Hunter, C., & McClelland, K. (1991). Honoring accounts for sexual harassment: A factorial survey analysis. *Sex Roles*, 24, 725–752.
- Huston, A. C., Chang, Y. E., & Gennetian, L. (2002). Family and individual predictors of child care use by low-income families in different policy contexts. *Early Childhood Research Quarterly*, 17, 441–469.
- Jaeger, E., & Funk, S. (2001). *The Philadelphia Child Care Quality Study: An examination of quality in selected early education and care settings. A technical report submitted to the Improving School Readiness Project of the United Way of Southeastern PA*. Philadelphia, PA: Saint Joseph's University, Department of Psychology.
- Johansen, A. S., Leibowitz, A., & Waite, L. J. (1996). The importance of child-care characteristics choice of care. *Journal of Marriage and the Family*, 58, 759–772.
- Kisker, E. E., & Maynard, R. (1991). Quality, cost, and parental choice of child care. In *The economics of child care*. New York, NY: Russell Sage, pp. 127–143.
- Kisker, E. E., & Silverberg, M. (1991). Child care utilization by disadvantaged teenage mothers. *Journal of Social Issues*, 47, 159–177.
- Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1995). *Quality in family child care and relative care*. New York: Teachers College Press.
- Larner, M., & Phillips, D. (1994). Defining and valuing quality as a parent. In P. Moss & A. Pence (Eds.), *Valuing quality in early childhood services: New approaches to defining quality* (pp. 43–60). London, England: Paul Chapman Publishers.

- Liang, X., Fuller, B., & Singer, J. D. (2000). Ethnic differences in child care selection: The influence of family structure, parental practices, and home language. *Early Childhood Research Quarterly*, 15, 357–384.
- Mason, K. O., & Kuhlthau, K. (1989). Determinants of child care ideals among mothers of preschool-aged children. *Journal of Marriage and the Family*, 51, 593–603.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53, 185–204.
- Meyers, M. K. (1993). Child care in JOBS employment and training program: What difference does quality make? *Journal of Marriage and the Family*, 55, 767–783.
- Meyers, M. K. (1995). *Child care and welfare reform: Findings from California*. Paper presented at child care workshop, Board on Children and Families, February 21, 1995. Department of Public Administration, Maxwell School of Citizenship and Public Affairs, Syracuse University.
- NICHD Early Child Care Research Network. (1999). Child care and mother-child interaction in the first 3 years of life. *Developmental Psychology*, 35, 1399–1413.
- NICHD Early Child Care Research Network. (2000). Characteristics and quality of child care for toddlers and preschoolers. *Applied Developmental Science*, 4, 116–135.
- NICHD Early Child Care Research Network. (2001a). A new guide for evaluating child care quality. *Bulletin of Zero to Three: National Center for Infants, Toddlers, and Families*, 21, 40–47.
- NICHD Early Child Care Research Network. (2001b). Nonmaternal care and family factors in early development: An overview of the NICHD study of early child care. *Applied Developmental Psychology*, 22, 457–492.
- Nock, S. L. (1982). Family social status: Consensus on characteristics. In P. H. Rossi & S. L. Nock (Eds.), *Measuring social judgments: The factorial survey approach* (pp. 95–118). Beverly Hills: Sage Publications.
- O'Toole, A. W., O'Toole, R., Webster, S., & Lucal, B. (1993). Nurses' recognition and reporting of child abuse: A factorial survey. *Deviant Behavior: An Interdisciplinary Journal*, 14, 341–363.
- Peyton, V., Jacobs, A., O'Brien, M., & Roy, C. (2001). Reasons for choosing child care: associations with family factors, quality, and satisfaction. *Early Childhood Research Quarterly*, 16, 191–208.
- Phillips, D. (1995). *Child care for low-income families: Summary of two workshops*. Commission of Behavioral and Social Science and Education, National Research Council, National Academy Press, Washington, DC.
- Polit, D. F., & O'Hara, J. J. (1989). Support services. In P. Cottingham & D. T. Ellwood (Eds.), *Welfare policy for the 1990s* (pp. 165–198). Cambridge, MA: Harvard University Press.
- Porter, Toni. (1991). *Just like any parent: The child care choices of welfare mothers in New Jersey*. New York, NY: Bank Street College of Education.
- Pungello, E. P., & Kurtz-Costes, B. (1999). Why and how working women choose child care: A review with a focus on infancy. *Developmental Review*, 19, 31–96.
- Ramey, C. T., & Campbell, F. A. (1992). Poverty, early childhood education, and academic competence: The Abecedarian experiment. In A. C. Huston (Ed.), *Children in poverty: Child development and public policy* (pp. 190–221). New York: Cambridge University Press.
- Rossi, P. H., & Anderson, A. B. (1982). The factorial approach: An introduction. In *Measuring Social Judgments: The factorial survey approach* (pp. 15–67). Beverly Hills: Sage Publications.
- Shinn, M., Phillips, D., Howes, C., Galinsky, E., & Whitebook, M. (1990). *Correspondence between mothers' perceptions and observer ratings of quality in child care centers*. New York, NY: New York University Department of Community Psychology.
- Shlay, A. B., & DiGregorio, D. A. (1985). Same city, different worlds: Examining gender- and work-based differences in perceptions of neighborhood desirability. *Urban Affairs Quarterly*, 21, 66–86.
- Shlay, A. B., Weinraub, M., Harmon, M., & Tran, H. (2004). Barriers to subsidies: Why low-income families do not use child care subsidies. *Social Science Research*, 33, 134–157.
- Shonkoff, J., & Phillips, D. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
- Sonenstein, F. L., Gates, G. J., Schmidt, S., & Bolshun, N. (2002). *Primary child care arrangements of employed parents: Findings from the 1999 National Survey of America's Families*. Washington, DC: The Urban Institute, Occasional Paper Number 9.
- Sonenstein, F. L., & Wolf, D. A. (1991). Satisfaction with child care: Perspectives of welfare mothers. *Journal of Social Issues*, 47, 15–31.
- Stevenson, H. W., Chen, C., & Uttal, D. H. (1990). Beliefs and achievement: A study of black, white, and Hispanic children. *Child Development*, 61, 508–523.
- Thurmon, Q. C., Lam, J. A., & Rossi, P. H. (1988). Sorting out the cuckoo's nest: A factorial survey approach to the study of popular conceptions of mental illness. *The Sociological Quarterly*, 29, 565–588.
- U.S. Child Care Bureau. (2003). Child Care Development Fund (CCDF): Report to Congress. Washington DC: United States Administration for Children and Families. <http://www.acf.hhs.gov/programs/ccb/policy1/congressreport/CCDFreport.pdf>.
- U.S. Department of Labor. (2000). Current Population Survey. Bureau of Labor Statistics. <http://www.bls.gov/cps/home.htm>.
- Vandell, D., & Wolfe, B. (2000). *Child Care Quality: Does it Matter and Does it Research on Poverty*.
- Weinraub, M., Kochanoff, A. T., & Shlay, A. B. (2002). *Benchmarking early care and education in Pennsylvania: The 2002 Family Survey*. Harrisburg, PA: Governor's Policy Office.
- Whitebook, M., Howes, C., & Phillips, D. (1990). Who cares? Child care teachers and the quality of care in America. In *Final report of the National Child Care Staffing Study*. Oakland, CA: Child Care Employee Project.
- Whitebook, M., Sakai, L., & Howes, C. (1997). *NAEYC accreditation as a strategy for improving child care quality: An assessment by the National Center for the Early Childhood Work Force*. Washington, DC: National Center for the Early Childhood Work Force.
- Wise, S., & Sanson, A. (2000). *Child care in cultural context: Issues for new research*. Australian Institute of Family Studies.