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The Impact of Child Care Subsidy Use on Child Care Quality

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Abstract

In 2008, the federal government allotted \$7 billion in child care subsidies to low-income families through the state-administered Child Care and Development Fund (CCDF), now the government's largest child care program (US DHHS, 2008). Although subsidies reduce costs for families and facilitate parental employment, it is unclear how they impact the quality of care families purchase. This study investigates the impact of government subsidization on parents' selection of child care quality using multivariate regression and propensity score matching approaches to account for differential selection into subsidy receipt and care arrangements. Data were drawn from the Child Care Supplement to the Fragile Families and Child Wellbeing Study (CCS-FFCWS), conducted in 2002 and 2003 in 14 of the 20 FFCWS cities when focal children were 3 years old ($N = 456$). Our results indicate that families who used subsidies chose higher quality care than comparable mothers who did not use subsidies, but only because subsidy recipients were more likely to use center-based care. Subgroup analyses revealed that families using subsidies purchased *higher*-quality home-based care but *lower*-quality center-based care than comparable non-recipients. Findings suggest that child care subsidies may serve as more than a work support for low-income families by enhancing the quality of nonmaternal care children experience but that this effect is largely attributable to recipients' using formal child care arrangements (versus kith and kin care) more often than non-recipients.

Keywords

child care subsidies; child care arrangements; child care quality

Over the past two decades, the federal government has substantially expanded funding for subsidized child care. Much of this funding flows through the Child Care and Development Fund (CCDF), which supports state-administered subsidy programs for low-income families (US DHHS, 2008). The program, whose explicit goal is to facilitate employment among current and former welfare recipients as well as low-income parents more broadly, is now

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the federal government's largest child care program, serving nearly 2 million children per month (US DHHS, 2008). Although subsidies have been shown to reduce families' cost of care (Forry, 2009; Gennetian, Crosby, Huston, & Lowe, 2004) and facilitate parental employment (Blau & Tekin, 2007), it is less clear whether receipt of a subsidy alters the characteristics of child care parents purchase. Of particular interest is whether parents use subsidies to purchase higher-quality care than they would otherwise, for quality of child care is positively associated with children's cognitive and socioemotional development (National Institute for Child Health and Human Development–Early Child Care Research Network [NICHD ECCRN], 2002; NICHD ECCRN & Duncan, 2003; Vandell & Wolfe, 2000), particularly among low-income children (Currie, 2001; McCartney, Dearing, Taylor, & Bub, 2007). If subsidies do elevate recipients' quality of care, then CCDF funding could be considered not just an effective work support but also a support for children's early development. The present study addresses this issue, asking whether families who receive a federal subsidy choose higher-quality care than comparable families who do not.

Theoretical Framework

Theoretically, parents with a child care subsidy should purchase higher quality child care than comparable families without one because subsidies decrease income constraints, increase purchasing power, and, thereby, multiply child care options. In order for this theory to be supported, however, three assumptions must hold true. First, parents would need to spend their subsidy income on higher-quality care rather than simply using subsidies to purchase the same quality care they would otherwise and reallocating their savings to other household expenditures; that is, parents would need to *prioritize* child care quality. Second, even if parents did prioritize quality, they would need to be able to distinguish higher- from lower-quality care among their options. Finally, high-quality child care—or at least options that range in quality—would need to be available in recipients' child care markets. If parents do not prioritize quality highly, cannot assess quality accurately, or have no high-quality child care available to them, then child care subsidies would not allow recipients to purchase higher-quality care than they would otherwise.

Indeed, existing research on parents' child care preferences, choices, and local options casts doubt on these assumptions, suggesting that subsidy receipt may not enable or induce parents to purchase higher-quality care. First, some studies on child care preferences find that parents value practical aspects of care, such as convenience, reliability, and cost, rather than characteristics developmental psychologists consider indicators of high quality, such as materials to stimulate emergent literacy and logical reasoning, activities to stimulate language development, and warm caregiver-child interactions (Hofferth, 1991; Kisker & Maynard, 1991). In support of these findings, Blau and Hagy (1998) find that a decrease in the price of care increases the hours of care parents purchase but not their demand for quality, at least not quality measured in terms of group size, caregiver/child ratio, and caregiver training. These findings suggest that subsidy receipt may motivate parents to use child care of similar quality while reallocating associated savings to other household expenses.

Other research, however, finds that parents and professionals do value the same developmentally important characteristics of child care quality. Specifically, parents rank caregiver training (Cryer, Tietze, & Wessels, 2002; Early & Burchinal, 2001; Helburn, 1995; Rose & Elicker, 2008), caregiver-child interactions (Rose & Elicker, 2008), and promotion of school readiness (Gamble, Ewing, & Wilhelm, 2009) among the most important dimensions of care. Many of these studies find, however, that parents are less able than professionals to identify or monitor these dimensions. As a result, they tend to overestimate the quality of their children's care and choose lower quality care than they desire (Cryer & Burchinal, 1997; Cryer et al., 2002; Helburn, 1995; Mocan, 2007). If, as

these studies suggest, parents cannot reliably identify high-quality care, receiving a subsidy would not necessarily lead parents to choose it.

Finally, parents would not be able to use child care subsidies to purchase higher-quality care if higher-quality options were not available in their communities. Indeed, research suggests the supply of regulated care is limited and the average quality of care is often quite poor in low-income communities (Gordon & Chase-Lansdale, 2001; Loeb, Fuller, Kagan, Carol, & Carroll, 2004; Queralt & Witte, 1998). Some researchers connect this phenomenon with the previous pattern, arguing that if parents cannot distinguish higher-quality care, they may not be willing to pay more for it, which may push high-quality providers out of the market (Mocan, 2007; Walker, 1991). Alternatively, providers may not be able to charge low-income parents enough to enrich the quality of their programs. If few high-quality providers are available in low-income communities, subsidies, however generous, may not enable parents to choose better quality care for lack of access.

It is also possible that certain features of the subsidy program itself may undermine recipients' ability to purchase high-quality care. Adams and Rohacek (2002) explain that given limited funding and high demand for subsidies, many states (understandably) choose to cover more families instead of increasing the value of subsidies. As a result, subsidies are often not generous enough to cover the cost of high-quality care. Moreover, subsidies reimburse providers (or pay parents) at providers' going rates with the aim of increasing access (Adams & Rohacek). If providers cannot charge local families enough to provide high-quality care, then subsidy recipients will continue to use the available low-quality care but pay less for it. Finally, because ongoing eligibility for subsidies is based on parents' income and employment, and because the process of proving ongoing eligibility can be complex and time-consuming, many families receive subsidies for short spells (Chaudry, 2004; Meyers et al., 2002). Lack of continuity in subsidy receipt can cause instability in child care arrangements, which could in turn limit parents' access to high-quality care (Adams & Rohacek). Lack of continuity also means that any spell in high-quality care may be brief and, thus, have limited impact on children's overall quality of care and developmental outcomes. In each of the scenarios, parents would use subsidies to purchase the same quality care they would otherwise but would pay less (or nothing) for it, making child care subsidies an effective work support for parents and a potentially useful cash transfer, but not a support for early child development.

If parents find the subsidy system unstable and complicated, or if they believe other early education programs offer higher quality care, they may choose alternative sources of subsidized care, such as Head Start (or Early Head Start) or public-school-based preschool, over CCDF-funded arrangements. Unlike CCDF-subsidized care, these programs are free (i.e., do not charge a copayment) and aim to enhance children's school readiness through validated curricula. Thus, parents may view them as a more economical and higher-quality option than any they could find with a child care subsidy. However, parents can only choose Early Head Start or Head Start if their income falls below the federal poverty line (with some exceptions), which describes some but not all subsidy-eligible families. Moreover, parents can only choose Head Start or a public school-based pre-K if either is locally available and if these programs, which are often half-day, suit parents' work schedules. Thus, parents may use subsidies only when they lack access to these free, possibly higher-quality programs, or when they work full-time and/or non-standard hours. In these scenarios, subsidies may allow parents to purchase care of higher quality than they would otherwise, but not necessarily care with quality as high as that offered by publicly funded early education programs.

Previous Research

Researchers have examined the impact of subsidies on child outcomes, and their studies may suggest a relationship between child care subsidies and quality. Overall, they find that short-term impacts of exposure to subsidized care on cognitive, socioemotional (e.g., behavior problems), and health outcomes (e.g., obesity) are either neutral (Datta Gupta & Simonsen, 2010) or negative (Datta Gupta & Simonsen; Herbst & Tekin, 2008; 2009). These studies invoke quality of care as a likely explanation, concluding that child care subsidies either do not impact the quality of care parents use, which would produce neutral effects on child outcomes, or motivate parents to use child care when they would not otherwise, which could undermine child development if the care is of mediocre to poor quality. However, because none of these studies examined quality as a mediator, and because subsidy receipt is associated with short term arrangements that may have equally short term impacts on children's environments, the relevance of these findings to impacts on quality are unclear.

Most previous research that directly examines the impact of subsidy receipt on parents' child care choices has compared the type of care that recipients and non-recipients use rather than the quality. The consensus from these studies is that parents who use subsidies are more likely to choose center- versus home-based care than demographically similar parents who do not use subsidies (Berger & Black, 1992; Brooks, 2002; Crosby, Gennetian, & Huston, 2005; Henly, Ananat, & Danziger, 2006; Tekin, 2005; Weinraub, Shlay, Harmon, & Tran, 2005; Wolfe & Scrivner, 2004). Parents who use subsidies are also more likely to choose licensed care—both center- and home-based—than comparable non-recipients (Weinraub et al.). Because centers tend to offer higher-quality care than home-based providers for preschool-aged children (Coley, Li-Grining, & Chase-Lansdale, 2006; Rigby, Ryan, & Brooks-Gunn, 2007), and licensed care tends to offer higher quality than unlicensed (Rigby et al.), many infer from these studies that subsidies allow parents to purchase more developmentally enriching care than they would otherwise. Yet, the studies do not (nor do their authors claim to) provide empirical evidence that this is the case.

A study by Weinraub and colleagues (2005) did directly compare the quality of child care used by subsidy recipients and non-recipients in a sample of low-income, African American families living in one city. They found that quality did not differ between the groups even though recipients were more likely to use licensed, center-based care, suggesting that even if receiving a subsidy allows families to move to center-based care, it does not necessarily allow them to choose care of higher quality than they would otherwise. However, the study's sample was ethnically and geographically homogenous, so it is not clear that its findings generalize to the broader population of subsidy recipients. Moreover, they did not account for differential selection of eligible parents into subsidy use. Not all eligible families apply for or receive subsidies; thus, subsidy recipients may differ from non-recipients in ways that could bias the association between subsidy receipt and child care choices.

Other studies have explored the impact of subsidies on child care quality by comparing quality across child care providers who do and do not serve subsidized children or who serve different proportions of subsidized children (Jones-Branch, Torquati, Raikes, & Edwards, 2004; Raikes, Raikes, & Wilcox, 2005). They find that centers and homes serving predominantly subsidized children do indeed provide lower- quality care than those serving unsubsidized children. However, because subsidies are reserved for low-income families, it is not surprising that centers serving subsidized children are of lower quality on average than those serving non-subsidized children; the latter group is probably more affluent, and more affluent families tend to purchase higher-quality care (Howes, Phillips, & Whitebook, 1992; NICHD ECCRN, 2005; Peisner-Feinberg et al., 1999; Phillips, Voran, Kisker, Howes, & Whitebook, 1994). Although these analyses demonstrate that subsidies do not elevate families' quality of care to equal that of relatively affluent families', they do not identify

whether subsidies elevate families' quality of care above that of socioeconomically comparable, unsubsidized families. To answer the latter question, it is important to compare families who are equally eligible for, and likely to obtain, child care subsidies.

Finally, no previous studies have examined whether the impact of subsidy receipt on quality differs for families using center- versus home-based care. If parents do not value, cannot identify, or cannot find high-quality center-based care in their communities, as the research reviewed above variously implies, subsidy receipt may have no impact on the quality of center-based care parents choose. Moreover, if parents view publicly funded early education programs as a more economical and higher-quality option and these programs are available to them, they may choose this type of center care over any they could find with a subsidy. However, if subsidy receipt makes parents more likely to choose licensed care, as prior research has found, it is possible that child care subsidies allow parents who prefer home-based care to switch from employing a relative or friend, who charges little or no money, to using a family day care provider, who charges more. In earlier work with CCS data, Rigby and colleagues (2007) found that family day care providers were more likely to have child care training, more likely to be licensed, and offered higher quality care than kith and kin providers, a pattern also found in other studies (Loeb et al., 2004). These patterns suggest subsidies may operate differently for parents who choose center- versus home-based arrangements.

Selection Into Subsidy Use and Child Care Arrangements

The central challenge in estimating the impact of subsidies on child care quality is identifying a group of families comparable to subsidy recipients on characteristics that determine subsidy receipt and child care choices. The first step in creating comparable groups is restricting the sample to families eligible for subsidies. Because most states require recipients to work some number of hours per week (which may include school or job training), eligible parents may have stronger preferences for work or be more employable than their ineligible, low-income counterparts. However, even among families eligible for subsidies, not all apply for one, so one must also account for the differential selection of eligible families into application. Research on why some eligible families do not apply for subsidies suggests many are either unaware of the program or unable to navigate the complex subsidy system (Adams, Snyder, & Sandfort, 2002; Meyers & Heintze, 1999; Shlay, Weinraub, Harmon, & Tran, 2004). It is also possible that some do not apply for subsidies because they fear the stigma of government assistance, particularly those who have never received government aid. If the individual characteristics that determine these inclinations also influence child care choices, they could bias the association between subsidy receipt and child care quality.

More importantly, parents who are more able or motivated to work may selectively apply for child subsidies, making subsidy recipients more socioeconomically advantaged than eligible non-recipients (Blau & Tekin, 2007; Danziger, Ananat, & Browning, 2004; Huston, Chang, & Gennetian, 2002; Tekin, 2005). Recently, Herbst (2008), using data from the 2002 National Survey of American Families, found that subsidy recipients were more likely to be single mothers, to be African American (versus White) mothers, and to have received welfare or food stamps, and were younger on average than eligible non-recipients. Although these differences suggest that more economically disadvantaged mothers receive subsidies, Herbst also found that recipients had higher education levels than non-recipients, suggesting mothers who receive subsidies may be more able to attain economic self-sufficiency. Many of these characteristics—family structure, maternal race, maternal education level, household income, and employment status—have been shown to predict parents' likelihood of choosing center-based care as well as the quality of care they choose (Blau, 2001; Fuller,

Holloway, & Liang, 1996; Huston et al., 2002; Liang, Fuller, & Singer 2000; NICHD ECCRN, 1997).

The selection of parents into subsidy receipt also may vary widely across states. Under the CCDF, states have great flexibility in determining eligibility for child care subsidies in terms of income limits, income calculations, and employment requirements (Schulman & Blank, 2006). Local labor market conditions, supplies of child care providers, and policies regarding other needs-based assistance programs could also influence parents' preferences for work and child care and, in so doing, their likelihood of applying for and receiving a subsidy.

Present Study

By estimating the impact of subsidy receipt on child care choices, this study aims to adjudicate between the null effect previously outlined and the assumptions that undergird it, and any positive effect subsidies might have on the quality of care low-income children receive. Our approach expands on the existing literature in four key ways. First, our data contain observational assessments of child care quality measuring aspects of care known to influence child development, such as materials and interactions to stimulate language development and social competence (Harms, Clifford, & Cryer, 1998), unlike previous studies that have used maternal reports of quality or satisfaction (Berger & Black, 1992; Brooks, 2002). Second, we create an analytic sample that reflects the subsidy-eligible population by restricting our analyses, as best we could, to families eligible for subsidies in their states. Third, we account for selection into subsidy receipt among eligible families by controlling for characteristics that predict parents' likelihood of applying for subsidies, their likelihood of receiving subsidies after applying, and state policy variation. Fourth, by distinguishing between center- and home-based care, we determine if subsidy receipt has different associations with quality by care type.

Method

Fragile Families Child Care Study

Data were drawn from the Child Care Supplement to the Fragile Families and Child Wellbeing Study (CCS-FFCWS). The FFCWS is a longitudinal birth cohort study that oversampled unwed births to parents in large U.S. cities to examine associations between nonmarital childbirth and parent and child outcomes (see Reichman, Teitler, Garfinkel, & McLanahan, 2001 for a detailed description of the larger FFCWS design). Data for the CCS were collected in 2002 and 2003 in 14 of 20 FFCWS cities. As part of the FFCWS, participants in all 20 cities were visited in their homes when focal children were approximately three years old. During this visit, families in 14 of the 20 cities were asked if they used child care for 10 hours per week or more. Of the families visited at home in these 14 cities, 1,150 families fit the CCS criteria. Because some of these families refused to allow their child's provider to participate, some providers refused to participate, and some arrangements ended soon after the parent interview, child care observations were conducted in the child care settings of 777 of the eligible children.

When we compared families with child care observations to those for whom we did not gather child care data or who lacked complete data, some demographic differences emerged. Participants were more likely to have been married at the time of the focal child's birth (25% versus 14%) and less likely to have been cohabiting (28% versus 43%), although they were equally likely to live apart from the father. Participants also had higher incomes at baseline than nonparticipants, with an average income-to-poverty ratio of 2.1 versus 1.9 among nonparticipants. On all other key characteristics—maternal race, age, education

level, and immigrant status—the samples were statistically equivalent. Still, differences in marital status and income suggest that our sample was more socioeconomically advantaged than eligible families who did not participate in the study. Because more advantaged families tend to use higher-quality child care (NICHD ECCRN, 1997), the quality of care in our sample may be biased upwards. If this is true, it will be harder for us to detect associations between child care subsidy receipt and child care quality owing to a truncated range of quality scores.

Analytic Sample of Subsidy-eligible Families

Of the 777 children for whom we had child care quality data, we restricted our analytic sample to families eligible for CCDF subsidies in their state of residence at the time of the three-year interview ($N = 456$). Although it is possible recipients began receiving subsidies before three years, because recipients must demonstrate their eligibility regularly, income and employment information obtained at three years should reflect ongoing eligibility status. Using mothers' reports of welfare receipt, household income, and employment status, we simulated families' eligible status in three steps. First, all families receiving Temporary Assistance for Needy Families (TANF) at three years were classified *subsidy-eligible* (21%), because in all 14 CCS states, families enrolled in TANF were automatically eligible (US DHHS, 2002, 2003). Second, by comparing the annual income thresholds for each state (based on 12 times the monthly income thresholds in the year the parent was interviewed) to the families' annual income, we classified families *income-eligible* if their incomes fell at or below the states' income threshold for their family size. Third, families interviewed in 2002 were classified *employment-eligible* if the mother worked part- or full-time, or was in school or job training, because the 14 CCS states had no minimum work hours requirement and considered students categorically eligible in that year. In 2003, five states began requiring cohabiting or married mothers and their partners to work minimum hours, so we factored this requirement into our employment-eligible classification for those interviewed in 2003. Finally, if families were *both* income- and employment-eligible according to these rules, they were classified subsidy-eligible. Combining the TANF recipient and income- and employment-eligible groups yielded a subsidy-eligible sample of 446.

When we cross-classified subsidy-eligible families with subsidy recipients (see below for a definition of subsidy-recipient), 40 recipients were misclassified as ineligible for subsidies. Because we do not have administrative data on families' TANF receipt, income, or employment, and because we gathered eligibility information at a single time point, it is not surprising our eligibility calculations did not match families' eligibility status in all cases (Herbst, 2008). Of these 40, 12 were using home-based child care and 28 were using center-based care. We recoded the 12 cases using home-based child care as subsidy-eligible because we assumed families could not receive any other kind of government subsidy to pay for home-based care. Thus, if the provider reported that the family was receiving a subsidy, that subsidy must have come from the CCDF. We recoded the 28 cases using center-based care as subsidy-eligible only after checking providers' reports of subsidy source and sponsoring agency to ensure that families were not using some other form of subsidization. This recoding yielded a final subsidy-eligible sample of 486. The final analytic sample included 456 of these children because 30 cases were missing data on our key treatment variable, subsidy use, or on one or more covariates.

Although the child care sample was advantaged relative to the larger FFCWS sample, our subsidy-eligible sample was disadvantaged in expected ways (see Table 1). On average, mothers were living just over federal poverty line, with 40% having received welfare in the past year and over half having received food stamps (not shown). Nearly a third lacked a high school diploma and the vast majority had attended no college. Only 12% of mothers were married to the focal child's biological father, whereas over half were single not living

with a partner. Additionally, nearly 70% of mothers were African American with only 10% White and 20% Latina.

Among the 1,150 families who fit the criteria for the CCS, 650 families were eligible for child care subsidies (not shown). When we compared our analytic sample ($N = 456$) to those for whom child care data were not collected ($N = 194$), few demographic differences emerged, suggesting that among those eligible for subsidies, the child care sample was not highly selective. The analytic sample had a slightly higher average income-to-needs ratio at the time of the focal child's birth (1.45 versus 1.23, $p < .10$) and mothers were more likely to have been born in the U.S. (95% versus 90%, $p < .05$); however, the groups did not differ in terms of race/ethnicity, family structure, mothers' age, mothers' employment status, or receipt of government assistance.

Measures

Subsidy receipt—Due to the decentralized administration of the subsidy program, the common practice of blending these funds with other federal (e.g., Head Start) or state/local (e.g., prekindergarten) funding streams, and the growing trend of using federal funds to contract directly with providers, it can be challenging to identify exactly which children are being served by subsidies using survey data. Most commonly, researchers rely on mothers' reports of subsidy receipt (Henly et al., 2006; Tekin, 2005; Weinraub et al., 2005). However, these reports may inadvertently combine subsidization types if mothers are not asked to, or cannot reliably, distinguish among government funding streams or between public and private sources of subsidization. They may also underestimate subsidy use if mothers believe co-payments reflect the full cost of care. These misclassifications could overestimate and possibly reverse the estimated effect of subsidy receipt on child care quality if Head Start programs, state prekindergarten classrooms, or privately funded centers offer higher quality care than families purchase with CCDF subsidies. To reduce this bias, we used a measure of subsidy receipt obtained directly from providers. Although providers' reports may also underestimate receipt among mothers who receive subsidies directly, this underestimation risks biasing our estimation far less than the misclassifications embedded in mothers' reports.

To determine our subsidy recipient group, we began with child care providers' responses to the question, "Is any part of the child's care paid for by government support?" Responses were coded "0" if the provider responded that the focal child did not receive government support and "1" if the provider responded he/she did. Providers who responded in the affirmative were asked which government program provided the funding. Children whose providers reported their care was subsidized by the state or local board of education, a state pre-Kindergarten program (e.g., the Abbott program in New Jersey), Head Start or Early Head Start, or a private non-profit foundation were recoded as "0" and were excluded from the subsidy group. Additionally, if a child's provider responded to the question, "Is the center sponsored by or affiliated with any organizations or schools?" with either Head Start or a public school, the child was similarly excluded from the subsidy group. The remaining providers reporting government support either reported "CCDF" explicitly or a state or county social service agency likely to receive CCDF funds. In our analytic sample, 43% ($n = 195$) of eligible children received a subsidy according to this definition (whereas, 36 children were funded by Head Start and 34 were funded through the public school system).

Given low rates of subsidy take-up nationally, 43% represents a relatively large percentage of eligible families using federal subsidies (e.g., in 2005, the percentage of federally eligible children served was 29% nationally [Assistant Secretary for Planning and Evaluation, 2008]). When evaluating this usage rate, it is important to note that our sample is not nationally representative, so usage rates in the CCS-FFCWS cannot be expected to reflect

actual take-up rates. Specifically, our sample only includes families with 3-year-olds, and parents of young children are more likely to use subsidies than those with school-aged children (Herbst, 2008). Our study also includes only families using some form of nonmaternal care, thus excluding any eligible non-users who use no care at all. Finally, the larger Fragile Families study only sampled families living in large cities, and it oversampled unwed births by a proportion of two to one. Both sampling criteria could yield high take-up rates in our sample. We also acknowledge we may have overestimated the usage rate in our sample if some children received government funding from a non-CCDF source, or if we somehow underestimated the number of families eligible for subsidies in the CCS. The implications of these possible errors are addressed in the Discussion.

Quality of care—To assess child care quality, we used two common measures of child care quality with good reliability and validity. The *Early Childhood Environment Rating Scale–Revised* (ECERS-R; Harms et al., 1998) and the *Family Day Care Rating Scale* (FDCRS; Harms & Clifford, 1989) assess the global quality of child care in center- and home-based settings, respectively. We used the FDCRS to assess the quality of both family child care providers and kith and kin providers (relatives and friends), because there is not a validated parallel measure specially designed for kith and kin providers. We acknowledge the FDCRS may not tap quality characteristics unique to kith and kin care (Porter, Rice, & Mabon, 2003). However, other studies examining kith and kin care also have used this measure (e.g., Loeb et al., 2004; Weinraub et al., 2005), and a recent project to develop an assessment tool for kith and kin care included FDCRS items related to language and reasoning stimulation, and tone (Porter, Rice, & Rivera, 2006), suggesting the measure taps some important aspects of kith and kin care.

Both the ECERS-R and FDCRS are observational assessments of global quality that rate settings on factors known to enhance children's early learning environments, such as nutrition, safety and cleanliness, the condition and quality of furnishings and displays, and activities and materials to stimulate motor skills, emergent literacy, logical reasoning, and social skills. Both measures were administered by trained observers. Training consisted of five all-day training sessions for the ECERS-R and FDCRS, two practice visits to child care centers and one practice visit to a family child care provider. To be certified as data collectors, trainees had to have at least 85% agreement (within one point) on all items with ratings by the "gold standard" trainer–observer during both a center and a family child care practice visit.

Scores on ECERS-R and FDCRS items range from 1 to 7. A score of 1 indicates inadequate quality care, while a score of 7 indicates excellent care. The quality variable in the present study represents the setting's average quality score, according either to the ECERS-R or FDCRS, calculated by summing scores on each item and dividing by the total number of items in the measure (37 items for the ECERS-R, and 29 items for the FDCRS).

Type of care—To classify child care type, we created a binary variable that represents whether the child was in center- or home-based care. This variable was coded "1" if the focal child received child care in a center or "0" if the care took place in any home-based setting. In supplementary analyses, we distinguished between types of home-based care, specifically, between more formal family day care providers and less formal care by a relative or family friend. As mentioned above, we also used center providers' responses to subsidization questions to distinguish between children receiving federal subsidies and those in Head Start classrooms, public-school-based pre-kindergartens, and unsubsidized center care.

Covariates—In all multivariate models, we entered a rich set of covariates that influence child care subsidy receipt and mothers' child care preferences. Specifically, to account for parents' likelihood of applying for subsidies we included mothers' scores on the Peabody Picture Vocabulary Test (PPVT-III; Dunn & Dunn, 1997) and a dummy variable for whether the mother had received TANF in the past year. Initially, we included dummy variables for Food Stamps and WIC receipt; however, we dropped them from final models because neither was associated with quality or subsidy use. Removing these covariates did not alter the final results.

We also included a set of characteristics known to predict subsidy receipt among subsidy-eligible families and mothers' child care choices. These were: maternal education (two dummy variables for less than high school, high school diploma/GED, with some college/college degree as the reference category), household income (income-to-poverty ratio), maternal employment (two dummy variables for employed part-time and full-time with unemployed as the reference category), whether she was in an education or job training program, maternal race (three dummy variables for African American, Latina, other race, with White as the reference), maternal age at the focal child's birth (in years), maternal relationship status (three dummy variables for cohabiting with biological father, cohabiting with other partner, and single, with married to biological father as the reference), maternal household structure (one dummy variable for whether mother lived with another adult [= 1] versus no other adults [= 0]; one dummy variable for whether mother lived with two or more children other than the focal child [= 1] versus zero or one [= 0]), and maternal immigrant status (born in the U.S. = 1; born elsewhere = 0).

In addition to these covariates, we included 13 indicator variables for mothers' city of residence to control for state variation in subsidy eligibility requirements, labor market conditions, and policy context. Finally, we included two child covariates, child age in months at the time of the three-year interview and first born status (firstborn = 1; other parity = 0). We excluded child sex from final models because it was not associated with quality or subsidy use. Sample means and percentages on all characteristics are displayed in Table 1.

Information on all time-*invariant* covariates, such as maternal race, age at childbirth, and immigrant status, were collected during the baseline interview at the time of the focal child's birth. It is inappropriate to enter information on time-*variant* characteristics gathered after treatment, in this case after subsidy receipt, because the treatment may have influenced these characteristics. Therefore, information on all time variant characteristics, such as household income, educational attainment, relationship status, living arrangements, maternal employment, and whether or not mothers received welfare or job training/education in the last year were obtained from the parent interview conducted just before the child entered the observed child care setting. Note, in most cases, the time point used preceded the three-year interview and so did not reflect the same information used to determine subsidy-eligible status.

Analytic Strategy

We used two methodological approaches to estimate the impact of child care subsidy receipt on quality of care. First, we ran Ordinary Least Squares (OLS) regression models predicting child care quality from subsidy receipt, holding constant the outlined set of covariates. In the first model, we regressed quality on CCDF subsidy receipt and all covariates to estimate the average association between subsidy receipt and quality. In the second model, we added an indicator variable for center-based care to determine if the association detected was driven by recipients' greater likelihood of choosing center-based care. In the third model, we entered the interaction between subsidy receipt and center-based care to determine if the

impact of subsidies on quality varied by type of care. FFCWS national sampling weights were not used in analyses because not all CCS cities were among those included in the FFCWS national sample for which weights are available.

Second, as a robustness check, we replicated the first model using a propensity score matching approach, drawing upon the full set of covariates and indicators for city of residence. Propensity score matching theoretically yields less biased estimates of the impact of a treatment, in this case subsidy receipt, on an outcome, in this case child care quality, than OLS by ensuring treated cases are compared to control cases that have on average the same distribution of values across covariates (Gelman & Hill, 2007; Rubin, 1997). Specifically, the method allows for all covariates to be reduced to a single composite variable—the propensity score—that can be used to assess the groups' region of common support, that is, the range of values over which treated cases have adequate matches among controls. Propensity scores are then used to identify matches between each treated case and one or more control case(s) and to compute a weighted average of their differences. The matching model we used, described in detail below, generates an estimate of the average effect of the treatment on the treated (ATT), which is analogous to the effect estimated by a treatment dummy variable in an OLS model. Thus, we can compare the propensity score matching estimates to our OLS results to evaluate possible bias in the latter models.

It should be noted that recent critiques of matching approaches to causal inference warn that propensity score matching only offers unbiased estimates under certain conditions (Heckman, Ichimura, Smith, & Todd, 1996; Heckman, Ichimura, & Todd, 1997; Smith & Todd, 2005). Specifically, Heckman and colleagues (1996; 1997) emphasize three necessary conditions for matching estimators to have low bias: the data must contain a rich set of covariates related to program participation and the outcome variable; the treatment and control groups must be drawn from the same geographic areas; and the outcome variable must be measured identically across groups. Additionally, Smith and Todd conclude that picking the subsample of a dataset in which treatment and control groups are maximally homogenous is often crucial to obtaining the least biased estimate. In response to these warnings, we stress that our data contain a rich set of family characteristics to use as covariates and that our subsidy-users and non-users lived in the same 14 cities and were administered identical surveys and observations. Moreover, by restricting our analytic sample to subsidy-eligible families, we believe we have identified an appropriately homogenous subsample of the CCS.

Results

Bivariate Associations

Table 1 displays mean differences between subsidy recipients and non-recipients on quality of child care chosen, type of child care chosen, and all family characteristics. These patterns indicate whether any differences exist in child care arrangements across groups before accounting for differential selection into subsidy receipt, as well as which family characteristics might influence that selection process. On average, subsidy recipients chose child care that was about a quarter of a standard deviation higher in quality than non-recipients. They were also 27 percentage points more likely to use center-based care than non-recipients, and both of these differences were significant.

Few differences emerged between groups in terms of family characteristics. Subsidy recipients were less likely to be Latina and slightly more likely to be African American than non-recipients (although not significantly). They were less likely to be cohabiting with the child's father and more likely to be either single or married than non-users. They were also less likely to live with another adult and less likely to have received welfare in the past year.

However, on all other key maternal characteristics—household income-to-poverty ratio, age, education, food stamps receipt (not shown), employment, and verbal ability—no significant differences emerged between groups.

OLS Regression Models

In Model 1, the value of the subsidy receipt coefficient reflects the estimated impact, in points on the quality rating scale, of subsidy receipt on child care quality for families in all types of care (Table 2). Holding constant family characteristics and cross-city variation, subsidy recipients used child care that was a third of a standard deviation higher in observed quality than eligible non-recipients, an effect slightly larger than the mean difference. Moreover, subsidy receipt was the most significant predictor of quality in the model, and among the largest in magnitude. To test whether subsidy receipt was positively associated with child care type with all covariates controlled, we also regressed the use of center-based care on subsidy receipt in a linear probability model (not shown). Results were relatively unchanged from the descriptive pattern, with subsidy recipients 28 percentage points more likely to choose center-based care than non-recipients. Again, subsidy receipt was a more significant predictor of child care choice than all family-level covariates.

Next, to test whether subsidy receipt was positively associated with child care quality because recipients were more likely to choose center-based care, we entered an indicator for center-based care into the model (Model 2). We reasoned that because subsidy recipients were more likely to choose center-based care, the effect of subsidy receipt on type of care could be driving the effect on quality. As the results for Model 2 indicate, the subsidy estimate was reduced nearly to zero and became nonsignificant with type of care controlled. A Sobel test conducted to assess mediation indicated that type of care strongly mediated the positive association between subsidy receipt and quality (Sobel = 5.11, $SE = .10$, $p < .001$).

Although these results suggest the impact on quality stems from subsidy recipients' choosing center-based care more often than non-recipients, it is also possible that the association between subsidy receipt and quality varies by child care type. To test this possibility, in Model 3 we entered the interaction between subsidy receipt and care type. The interaction coefficient was negative and significant, indicating that subsidy receipt was associated far less positively with quality in center- than home-based care. When OLS models were run separately for center- and home-based care to ease interpretation of the interaction, results indicated that within types of care, subsidy receipt had *opposite* associations with the quality of care chosen. Specifically, among families using home-based arrangements, subsidy recipients chose care that was 0.60 of a standard deviation *higher* in quality than non-recipients (average quality score for home-based care was 3.13 [$SD = 1.28$]). However, among families using center-based care, subsidy recipients chose care that was 0.37 a standard deviation *lower* than non-recipients (average quality score for center care was 5.01 [$SD = 1.39$]). These findings suggest that subsidy receipt impacts parents' child care choices—or their options—quite differently depending on the type of care parents either prefer to use or use of out of necessity.

Propensity Score Matching Models

Next, we replicated this series of analyses in a propensity score matching framework. The first step was to generate a propensity score for each family by regressing subsidy receipt in a probit model on the same set of covariates used in the OLS model. As the bivariate results suggested, few family characteristics significantly predicted subsidy receipt. Income-to-poverty ratio at the time of enrollment was positively associated with receipt, suggesting mothers with higher household incomes were more likely to choose the program. All unwed mothers were less likely than married mothers to receive a subsidy, although only cohabitators

were significantly so (by 33 percentage points according to marginal effects calculated at the mean). Mothers receiving welfare were less likely to receive subsidies, although only at the trend level, again indicating more socioeconomically advantaged mothers use subsidies. Mothers employed part-time were less likely to receive subsidies than unemployed mothers prior to enrollment. No other maternal characteristics significantly predicted subsidy receipt. The pseudo R-squared of .14 suggests the model fit the data reasonably well.

Predicted probabilities of receiving a subsidy, or propensity scores, generated from this model were then used to match “treated” observations with members of the artificial “control” group of families who did not receive a subsidy. We did so using nearest neighbor matching with replacement (MWR), meaning that some control observations were matched to a treated observation more than once to maximize balance across groups and that treated cases were matched to the control case(s) with the nearest propensity score (Gelman & Hill, 2007). To impose a common support condition, we excluded treated cases without matches within .01 of their propensity score, an approach called caliper matching (Smith & Todd, 2005). Seven treated cases (subsidy users) were dropped from analyses once this condition was imposed. Of these cases, all fell in the upper end of the propensity score distribution, that is, among those most likely to receive a subsidy, with values ranging from .71 to .89. We then checked for balance across the two groups (subsidy users and non-users) in this reduced sample by examining mean differences on all covariates (available upon request). For the unmatched samples, nine of the 34 covariates had significantly different means across groups, with *t* scores as large as -4.98 , whereas for the matched samples, no covariates differed significantly across groups, suggesting balance for the caliper matched samples was far better than that of the unmatched samples.

After generating propensity scores, assessing group overlap, imposing the common support condition, and checking for balance on covariates, we used the matching technique to replicate the OLS analyses using the same set of covariates. In the full sample models predicting child care quality, propensity score models yielded estimates similar to but larger than those from OLS. Specifically, the impact of subsidy receipt on observed child care quality was 0.79 with an associated standard error of 0.22. This difference suggests comparisons between subsidy recipients and non-recipients that do not account fully for selection into subsidy receipt may underestimate the impact of receipt on quality. Specifically, the association between subsidy receipt and quality may be weaker among families highly likely to receive subsidies than among those less likely to receive subsidies; thus, excluding cases with high propensity scores from propensity score models yielded a larger estimate. The estimated impact of subsidy receipt on the likelihood of choosing center care was also larger than the impact estimated in OLS models in size, equaling 34 percentage points with an associated standard error of .07 (versus 28 in OLS model). Again, it is possible that the association between subsidy receipt and care type is weaker among families highly likely to receive subsidies than those less likely to receive subsidies, and, thus, excluding off-support cases with high propensity scores yielded a larger propensity score estimate. This estimate may be less biased by differences between treatment and control cases than the OLS estimate, however, it may also be less generalizable to the broader subsidy-receiving population.

Because OLS models indicated that choice of center-care mediated the positive impact of subsidy receipt on quality, overall propensity score model results largely supported those from OLS models. It is not feasible within a propensity score matching framework to enter child care type—a post-treatment variable—or the interaction between child care type and subsidy receipt into the model. Therefore, the mediation and moderation analyses were not conducted in this framework.

Supplementary Analyses Examining Home- and Center-based Subgroups

Given the different findings by child care type, we decided to explore whether subsidy receipt had different impacts for home- and center-based care because parents used subsidies to purchase different kinds of care within each type. Subsidy-eligible families using home-based care could have used a subsidy to pay for a family day care provider or an informal kith and kin arrangement (i.e., a relative or friend). Therefore, subsidy receipt might have been associated with higher-quality home-based care in our sample because recipients were more likely to choose family day care providers than kith and kin care, and family day care providers tend to provide higher-quality care than relatives or friends (Loeb et al., 2004; Rigby et al., 2007). However, subsidy-eligible families using center-based care had a more complex set of options. They could have used subsidies to purchase care at a private center rather than pay the full cost of that care. Depending on their income and location, they could also have sent their child to a local Head Start program or to a public school-based pre-kindergarten program, both of which are free. Subsidy receipt might have been associated with lower-quality center care if some subsidy-eligible families were able to choose these free options over subsidies, and if these options offered higher-quality care than private centers.

To test these hypotheses, we investigated which kind of home-based provider subsidy recipients were more likely to choose, and we compared child care quality across kinds of home- and center-based providers. As expected, subsidy recipients were far more likely to use a family day care provider than a relative or friend if they used home-based care. Specifically, among those in home-based care, 47% of subsidy recipients used a family day care provider versus only 9% of non-recipients (meaning 91% of non-recipients used kith and kin care versus 54% of subsidy recipients; $\chi^2 = 43.84, p < .0001$). Moreover, a one-way ANOVA revealed that within our subsidy-eligible sample, family day care providers had significantly higher ratings than kith and kin providers (3.96 versus 2.91, $F_{1, 237} = 29.18, p < .0001$), indicating that subsidy recipients were more likely to choose the higher-quality kind of arrangement. By contrast, the center care subsidy-recipients used was of lower average quality than the care provided by Head Start programs or public-school based pre-kindergartens, according to a one-way ANOVA (subsidy recipients = 4.62, Head Start = 5.61, pre-kindergarten = 5.58; $F_{3, 210} = 8.13, p < .001$). Subsidy recipients also used lower-quality care than those who paid the full cost of center care ($M = 5.27$), although this difference was statistically insignificant. Thus, subsidy receipt was associated with lower-quality care among families using center-based care most likely because Head Start programs and public pre-kindergartens offered higher-quality care to subsidy-eligible families.

Discussion

The present study investigated whether receipt of a child care subsidy allowed families to purchase higher-quality child care for their preschool-aged children than they could otherwise afford by comparing the quality of care subsidy recipients and non-recipients used in a subsidy-eligible sample. Using multivariate regression and propensity score matching models to account for differential selection into subsidy receipt among eligibles, we found families with subsidies did select higher-quality care on average than comparable families without them, an effect that was both statistically and practically significant. Additional analyses revealed that subsidy recipients were also more likely to select center-based care than non-recipients and that this difference entirely accounted for the overall quality effect. Moreover, when we examined separate subsidy effects for families in center- and home-based arrangements, we identified a more complex pattern of impacts: whereas subsidy recipients in home-based care used *higher-quality* providers than non-recipients, those in center-based care used *lower-quality* providers than non-recipients.

The distinction between subsidized center care and publicly funded early education programs may help explain why subsidy receipt had opposite associations with the quality of center- and home-based care. Our supplementary analyses suggest that subsidy recipients have very different child care options once they select center- versus home-based care. Subsidy recipients who choose center-based care must select among local providers who accept subsidies. If few high-quality centers exist in recipients' communities, which much research suggests (Galinsky, Howes, Kontos, & Shinn, 1994; Loeb et al., 2004; Phillips et al., 1994; Queralto & Witte, 1998), then subsidies cannot elevate the quality of center-based care children experience. It is also possible that child care subsidies simply are not generous enough to cover the cost of high-quality centers. Either way, if high-quality care is inaccessible, low-income families who have a universal prekindergarten program in their area or are eligible for and have access to free Head Start may choose these options over the subsidy program. In turn, subsidy-eligible parents who do not have access to or are ineligible for these programs may use subsidies by default (or because these programs do not suit their work schedules) and choose a center lower in quality as a result. Unfortunately, our data lack information on the availability of regulated centers, public prekindergarten, and Head Start classrooms in families' communities, thus we cannot explore these processes. Future research should include measures of child care availability to determine the impact of accessibility on subsidy recipients' child care choices.

Families using home-based care face a different set of options than those using center-care, as they choose between family day care providers and kith and kin care. Whereas subsidies may not cover the cost of center-based care that is as good as other publicly funded programs, they may cover the cost of most family day care providers. Thus, mothers looking for higher-quality home-based care may use subsidies to switch from their kith and kin arrangements to family day care providers. Alternatively, the structure of subsidy administration may drive parents' home-based choices. Although states differ in their CCDF licensing requirements, and no states require all providers receiving CCDF to be licensed, many states may encourage parents to use regulated care (US DHHS, 2008). In the case of home-based care, subsidies may direct mothers away from using kith and kin providers and toward family day care providers, who are more likely to be licensed. Future research should disentangle these mechanisms, for they have different policy implications. If subsidies impact child care choices because they encourage mothers to use regulated care, then policymakers should work to strengthen links between subsidy receipt and the use of regulated care. If subsidies facilitate the use of more developmentally enriching child care because they increase mothers' purchasing power, enabling them to move away from lower-quality kith and kin care, then policymakers should insure subsidies are generous enough to cover the cost of regulated care.

When interpreting the findings for home-based care, however, it is important to consider how our use of the FDCRS to assess child care quality in these settings may have influenced the results. The FDCRS is global assessment of child care quality that, like the ECERS-R, emphasizes structural aspects of child care quality such as physical space, materials, and daily schedule. Therefore, it may not capture the unique strengths of kith and kin arrangements, which center on caregiver-child interactions and emotional tone (Porter et al., 2003). If so, our findings might overstate the developmental importance of parental use of family day providers rather than kith and kin care.

More broadly, because our quality measures assess global features of care, our results only illuminate the associations between subsidies and global quality. It is possible that if we had more nuanced measures of caregiver-child interactions or other processes, different associations would have emerged. For instance, just as a global quality measure may overstate the difference between family day care and kith and kin providers, perhaps

differences between subsidized centers and other publicly funded programs would have been smaller had we used measures of process quality. Then again, it is possible process quality measures would have revealed even larger differences among center types. It is also important to acknowledge that global measures of quality like the ECERS-R and FDCRS are only weakly associated with child outcomes (Mashburn et al., 2008). It is not clear that 0.37 of a standard deviation difference in ECERS-R scores between subsidized centers and other public programs, although statistically significant, would produce large differences in child outcomes. We cannot know with certainty how our use of the ECERS-R and FDCRS influenced the nature or implications of our results; thus, future research should replicate these analyses with data that contain a variety of quality measures.

Our study has several limitations that should be considered before drawing policy conclusions. First, our sample is not nationally representative. The FFCWS only recruited families living in large cities and substantially oversampled unwed births. It is arguable that this composition renders the sample more similar to the population eligible for child care subsidies than a more diverse one, but it nonetheless limits the generalizability of our findings to the population reflected in the FFCWS. The response rate for the Child Care Supplement was also notably low. Because participants were more socioeconomically advantaged than non-participants, many non-participants may have used federal subsidies. If the non-participants who used subsidies chose lower-quality care than the participants who used subsidies, our sample could have biased the effect on quality upward. Then again, if the non-participants who used subsidies chose higher-quality care than their participating counterparts, our sample would have biased the effect on quality downward. It is impossible for us to know how sample selection may have influenced our results, but the issue warrants concern. Future research in this area should replicate our analyses with a larger, nationally representative dataset, one with valid measures of both subsidy use and observed child care quality.

Another point of concern is that even for a disadvantaged sample, the rate of subsidy use was high given low coverage rates in many states. Although we believe that providers' reports of subsidy use are more accurate than mothers', it is possible that providers over-reported subsidy use by counting state-funded prekindergarten or Head Start slots as federally subsidized. We attempted to minimize this risk by excluding subsidization identified as "Head Start," "board of education," or "state pre-K" from the treatment group. Nonetheless, providers' over-reporting of federal subsidy use may still pose a problem, particularly if federal subsidy funds were blended with or confused with other state and local funding agencies. Our findings regarding the effect of subsidies on the quality of home-based care are particularly encouraging given this concern, for it is hard to imagine how family child care providers could have included non-federal subsidies in their responses.

A related issue is the likelihood that we did not perfectly simulate the subsidy-eligible subsample of the CCS. Forty cases we deemed ineligible according to our simulation actually received subsidies according to their child care providers. In turn, it is likely that some cases we categorized as eligible non-recipients were in fact ineligible and that some cases we excluded as ineligible were in fact eligible non-recipients. Because our TANF, income, and employment information came from a single time point and because survey data on these measures likely contain more error than administrative data, false positives and false negatives in our eligibility simulation were inevitable. Unfortunately, it is difficult to assess the magnitude and impact of these misclassifications. However, when models were rerun excluding the 40 "misclassified" cases, our results did not change appreciably. Ideally, future studies examining this question would use rich administrative data on economic and employment status in combination with rich survey data on family characteristics and child care quality.

Finally, we recognize that by using OLS regression and propensity score matching to estimate causal effects, we assume that all family characteristics driving selection into subsidy use and child care arrangements are observable and included in our analyses (Rosenbaum & Rubin, 1985). Because both methods account only for the covariates entered, our results could be biased if any covariates confounded with child care selection went unmeasured. However, based on our review of the literature, we feel confident that we included a comprehensive set of predictors of subsidy receipt and child care selection. Moreover, propensity score matching is a more rigorous approach than those used in the past to answer questions about subsidy use and child care quality, and we hope that future studies will make use of this technique when asking similar questions.

In sum, our findings suggest that child care subsidies could go beyond supporting parental employment to also serving child development goals. Specifically, we provide evidence that subsidies allow mothers to purchase more formal care, either in centers or from family day care providers, both of which offer higher-quality care (on average) than kin and kin. A switch to center-based care alone may benefit children, for research has shown that the more time low-income children spend in center-based care during the preschool years, the better their cognitive outcomes upon kindergarten entry (McCartney et al., 2007; NICHD ECCRN & Duncan, 2003). Nonetheless, our results suggest that under the current subsidy system, children may receive higher-quality care in contract-based programs like school-based prekindergarten than in subsidized centers, although this conclusion is tentative because our data are not nationally representative. If these findings can be replicated in a nationally representative sample, however, one policy prescription might be to increase the availability of contract-based programs like universal prekindergarten. Another approach would be to strengthen the subsidy system's link to high-quality care by increasing the value of subsidies (Adams & Rohacek, 2002) or instituting tiered reimbursements, which some states have done, in which providers with higher-quality ratings command higher reimbursement rates (Karolak, Collins, & Stoney, 2001). Both approaches could simultaneously make high-quality care more affordable and incentivize caregivers to elevate the care quality. Although our analyses cannot identify which policy change to enact, our results stress the importance of integrating a stronger developmental focus into what is now the federal government's largest child care program.

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Table 1

Sample Descriptives

	Mean (SD)/Percentage	Subsidy-Users	Non-Users	Range
		<i>n</i> = 194	<i>n</i> = 262	
<i>Treatment Group Status</i>				
Family received subsidy	42.5%	100.0	0.0*	0–1
<i>Dependent Variables</i>				
Quality of child care	4.02 (1.63)	4.27	3.84*	1–7
Child attends center-based care	47.4%	62.9	35.9*	0–1
<i>Family Characteristics</i>				
Household Income-to-Poverty Ratio	1.27 (1.31)	1.37	1.19	0–12.25
Mother's age (in years)	23.91 (5.6)	23.66	24.10	15–42
Mother is African American	69.1%	73.2	66.0	0–1
Mother is Latina	19.5%	14.4	23.3*	0–1
Mother is other race	2.2%	2.6	1.9	0–1
Mother is White (omitted)	9.5%	9.8	8.8	0–1
Mother has less than HS education	32.9%	29.4	35.5	0–1
Mother has HS education	38.4%	39.2	37.8	0–1
Mother has some college/+ (omitted)	28.7%	31.4	26.7	0–1
Mother is cohabiting with father	29.6%	17.5	38.6*	0–1
Mother lives with a new partner	5.7%	6.2	5.3	0–1
Mother is single	52.9%	60.3	47.3*	0–1
Mother is married to father (omitted)	11.5%	16.0	8.8*	0–1
Mother lives with any other adult	74.8%	69.1	79.0*	0–1
Mother has 0 – 1 child in home	34.0%	34.0	34.0	0–1
Mother has 2 + children in home (omitted)	66.0%	66.0	66.0	0–1
Mother was born in US	94.7%	94.3	95.0	0–1
Mother received welfare last year	40.1%	34.5	44.3*	0–1
Mother is employed full-time	44.1%	46.4	42.4	0–1
Mother is employed part-time	18.0%	15.0	20.2	0–1
Mother is unemployed (omitted)	37.9%	38.6	37.4	0–1
Mother is attending school	10.3%	11.9	9.6	0–1
Mothers' PPVT score	88.21 (10.66)	88.04	88.34	40–131
Child's age in months	35.53 (2.12)	35.47	35.57	0–1
Child is firstborn	33.3%	33.5	33.2	0–1
<i>City of Residence</i>				
Nashville	2.6%	3.6	2.9	0–1
Baltimore	10.6%	12.4	9.2	0–1
Detroit	9.9%	9.8	10.0	0–1
Newark	10.4%	4.7	14.7*	0–1

	Mean (SD)/Percentage	Subsidy-Users	Non-Users	Range
		<i>n</i> = 194	<i>n</i> = 262	
Philadelphia	7.7%	4.7	10.0*	0–1
Richmond	7.3%	5.7	8.4	0–1
Corpus Christi	8.6%	8.3	8.8	0–1
Indianapolis	7.9%	10.9	5.7*	0–1
Milwaukee	16.7%	23.8	11.5*	0–1
New York	4.6%	3.6	5.4	0–1
San Jose	4.6%	4.2	5.0	0–1
Boston	2.9%	2.6	3.1	0–1
Chicago	5.3%	5.2	5.4	0–1
Jackson	0.9%	0.5	1.2	0–1

Note. *N* = 456

*
p < .05.

Table 2

OLS Regression Estimates of Subsidy Receipt Impact on Child Care Quality

	Model 1		Model 2		Model 3	
	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>
Subsidy Recipient	0.54	0.15*	0.05	0.13	0.86	0.18*
Center-based care	--	--	1.74	0.14*	2.45	0.17*
Subsidy X Center-based care	--	--	--	--	-1.58	0.25*
<i>Family Characteristics</i>						
Household Income-to-Poverty Ratio	0.04	0.06	0.02	0.05	0.05	0.05
Mother's age (in years)	0.02	0.01	0.01	0.01	0.02	0.01
<i>Maternal Race</i>						
Mother is European American	--	--	--	--	--	--
Mother is African American	-0.39	0.27	-0.39	0.23	-0.47	0.22*
Mother is Latina	-0.55	0.30	-0.52	0.26*	-0.48	0.25*
Mother is other race	-0.91	0.52	-0.79	0.44	-0.83	0.42*
<i>Maternal Education</i>						
Mother has less than HS education	-0.13	0.20	-0.11	0.17	-0.03	0.17
Mother has HS education	0.13	0.18	0.07	0.15	0.09	0.15
Mother has Some College+	--	--	--	--	--	--
<i>Maternal Partner Status</i>						
Mother is married to father	--	--	--	--	--	--
Mother is cohabiting with father	-0.52	0.26*	-0.48	0.22*	-0.46	0.21*
Mother lives with a new partner	0.16	0.37	-0.39	0.32	-0.45	0.31
Mother is single	-0.25	0.26	-0.31	0.22	-0.33	0.21
Mother lives with any other adult	-0.19	0.19	0.05	0.16	0.00	0.15
Mother has 0 – 1 other child in home	-0.17	0.18	0.04	0.15	-0.02	0.14
Mother was born in US	-0.24	0.38	-0.18	0.32	-0.16	0.31
Mother received welfare last year	-0.40	0.15*	-0.23	0.13	-0.15	0.12
<i>Maternal Employment</i>						
Mother is unemployed	--	--	--	--	--	--

	Model 1		Model 2		Model 3	
	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>
Mother employed full time	-0.12	0.17	-0.13	0.15	-0.15	0.14
Mother employed part time	0.33	0.20	0.17	0.17	0.12	0.17
Mother is attending school	0.40	0.23	0.04	0.20	0.02	0.19
Mothers' PPVT score	0.00	0.01	0.00	0.01	0.00	0.01
Child age in months	0.10	0.03*	0.07	0.03*	0.06	0.03*
Child is firstborn	0.43	0.19*	0.16	0.16	0.17	0.15
Constant	4.01	0.95*	3.00	0.81*	2.58	0.78*
Adjusted R ²	0.24		0.45		0.50	

Note. *N* = 456. Models control for city of residence.

*
p < .05.