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Prices Reported by Center-Based Early Care and Education Providers: Associations with Indicators of Quality

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Overview

Introduction

Paying for child care can place a burden on households, especially those with low incomes. Currently, there is a dearth of knowledge regarding whether households obtain higher-quality child care when they pay higher prices for that care. To that end, this research brief uses data from center-based providers to examine whether centers that report higher prices for child care provide higher-quality care, as measured with a variety of indicators.

Research question

Are indicators of child care quality associated with higher child care prices, as reported by center-based providers?

Purpose

While much research exists on quality in early care and education (ECE), there is limited information about how the quality of care is related to the prices charged for child care. This report explores preliminary associations between indicators of the quality of care and the prices for care reported by providers in the United States for infants, toddlers, and preschoolers.

Key findings and highlights

- **Fewer than half of the quality indicators examined were associated with reported prices**. Overall, prices for preschool care had more associations with quality indicators than prices for care of younger children:
    - Prices for preschool care were associated with seven of the 18 indicators of quality considered (39%).
    - Prices for toddler care were associated with three of the 18 indicators considered (17%).
    - Prices for infant care were associated with three of the 14 indicators[1] considered (21%).
- **Across the three age groups, classrooms with a highly educated staff member tended to be in centers that reported higher prices**, relative to classrooms with staff members with less education.
- **Teachers with certifications or advanced degrees tended to work in centers with higher reported prices**, compared to teachers with fewer qualifications. Specifically, preschool and infant teachers with a certification (i.e., a Child Development Associate [CDA] or state certification to teach young children, special education, or elementary school) tended to work in centers that reported higher prices, relative to teachers who lacked a certification. Toddler teachers with an education beyond an associate degree tended to work in centers with higher reported prices, compared to toddler teachers with less than an associate degree.
- **Toddler and preschool teachers who had attended a professional development workshop in the past year tended to work in centers that reported higher prices**, compared to toddler and preschool teachers who had not attended a workshop in the past year.
- **Infant and preschool teachers whose professional motivation revealed that they were teaching for career-related reasons tended to work in centers that reported higher prices**, compared to infant and toddler teachers who endorsed, for example, teaching "for the paycheck" or "as a way to help other parents."

[1] Four indicators of quality could not be considered when examining infant prices due to the small sample of infant classrooms.

Methods

This brief uses data from the 2012 National Survey of Early Care and Education (NSECE), an integrated set of nationally representative surveys of ECE providers and households with young children. The NSECE did not collect observational assessments of quality in child care settings. Instead, the NSECE asked ECE providers and workforce members to report on numerous quality indicators that research suggests contribute to high-quality care (Madill, Moodie, Zaslow, & Tout, 2015). Centers' hourly rates were adjusted to account for regional differences in cost of living. After accounting for the number of children served by provider (i.e., total child enrollment), community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to being converted to an hourly rate, we conducted separate regression analyses to examine whether each indicator of quality was significantly associated with the hourly reported price for care.

Implications

Few associations between reported prices and indicators of quality were found in this national dataset, especially for infant and toddler care. Decision makers, including parents and policymakers, need additional information about what drives the prices charged for child care and what those prices "buy" families in terms of the quality of care for their children. For example, child care providers might keep prices for infant and toddler care below cost by increasing the price of preschool care (Workman & Jessen-Howard, 2018). This information is important for consumer education efforts, as well as for guiding policymakers to know how to invest in programs to enhance the quality of ECE without passing along the price burden to families.

Glossary

- **ECE**: early care and education
- **NSECE**: National Survey of Early Care and Education
- **Center-based provider:** A provider authorized to provide early care and education services to children birth to age 5 in a non-residential setting; may also collectively be referred to as "centers"
- **Reported prices:** The highest hourly price providers report charging parents and families for non-subsidized, full time child care and education for each age group; families with children in the center may pay a lower rate than the reported price due to subsidy, sibling discounts, scholarship opportunities, and/or other discounts
- **Non-zero price:** The tuition or fees that child care providers charge parents, reported as a value greater than $0
- **Total child enrollment:** The total number of children in all age groups served by a child care provider
- **Cost of care:** Expenses such as rent, salaries, and supplies that child care providers pay in order to provide care
- **QRIS:** quality rating and improvement system

Executive Summary

Paying for child care can place a burden on households, especially those with low incomes. In 2012, households living below the federal poverty level that paid for regular[2] child care for any of their children under age 13 spent one third of their income on care (Forry, Madill & Halle, 2018). In many cases, child care prices (that is, the rates charged to families) are shaped by the cost of providing that care. Typical costs for early care and education (ECE) providers include staff salaries, rent and utilities, and supplies. The prices that ECE providers ultimately charge families, however, may not reflect the true cost of providing that care. ECE providers may have other funding sources, such as grants or donations, which allow them to offer lower prices (Davis et al., 2017). Currently, there is a dearth of knowledge regarding whether child care centers that report higher prices for care are, indeed, providing higher-quality care.

This report uses an integrated set of nationally representative surveys of center-based ECE providers and center-based ECE workforce members—the 2012 National Survey of Early Care and Education (NSECE)—to identify the relationship between the quality and reported price of child care in the United States. Although the NSECE did not collect observations to assess the quality of child care centers, it did include measures of quality indicators, or factors that researchers and/or best practices have identified as contributors to high-quality care (Madill et al., 2015). These quality indicators occur at the center, classroom, and teacher levels. Indicators at the classroom and teacher levels were measured in one randomly selected classroom for each center. As such, the indicators at this level may not necessarily reflect all classrooms or teachers serving each specified age group for the center at large.

For each age group of interest (i.e., infant, toddler, and preschool), the ECE providers reported the highest price charged for full-time, unsubsidized care. The analytic sample includes community-based centers that reported prices greater than $0 for the age groups of interest. Analyses regarding the classroom-level indicators of quality were limited to classrooms in the sample that reported serving the age groups of interest. Finally, teacher-level analyses were limited to teachers and lead teachers primarily working with the age group of interest. All analyses excluded centers that received funds from Head Start and public pre-K, as well as those that operate through public school sponsorship.

For each age group of interest, we conducted a series of regression analyses to test whether each quality indicator was significantly associated with the hourly reported price for that age group. Analyses controlled for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to being converted to an hourly rate. Centers' hourly rates were adjusted to account for regional differences in cost of living.

Key findings

Fewer than half of the quality indicators examined were associated with reported prices. Overall, prices for preschool care had more associations with quality indicators than did prices for care of younger children:

- Prices for preschool care were associated with seven of the 18 indicators of quality considered (39%).
- Prices for toddler care were associated with three of the 18 indicators considered (17%).
- Prices for infant care were associated with three of the 14 indicators considered (21%).

[2] Regular care is defined as at least five hours of care for one child, with the same child care provider, each week.

Some indicators of quality were consistently associated with the reported price of child care for infants, toddlers, and/or preschoolers.

- Specifically, these significant indicators measured classroom-level measures of staff education level, teachers' participation in professional development workshops, teacher's completion of a certificate (i.e., a Child Development Associate [CDA] or state certification to teach young children, special education, or elementary school), and teachers' professional motivation.

Prices reported by ECE providers do not always directly reflect the cost of providing high-quality care.

- Although some quality indicators may lead to increased operating costs for ECE providers (e.g., having a more educated or trained workforce may require providers to pay higher salaries), many quality indicators did not have significant associations with the reported price.
- For example, centers that have at least one specialist (e.g., language specialists, those who work with children with special needs) who work with the provider do not systematically report a higher price for care than centers without a specialist.

Price and Quality in Early Care and Education

Paying for child care can place a burden on households, especially those with low incomes. In 2012, households living below the federal poverty level that paid for regular[3] child care for any of their children under age 13 spent one third of their income on care (Forry et al., 2018). Parents who are budgeting for child care may assume that higher prices for care reflect a higher-quality setting. However, there is a dearth of knowledge regarding whether families who pay higher prices for care are, indeed, getting higher-quality care.

In many cases, child care prices (that is, the rates charged to families) are shaped by the cost of providing that care. Typical costs for early care and education (ECE) providers include staff salaries, rent and utilities, and supplies. To achieve many quality designations, such as a five-star rating, in a state's quality rating and improvement system (QRIS), a provider's costs may increase. For example, it is common for a QRIS to emphasize higher levels of teacher education, and employing these teachers may require centers to pay higher staff salaries. Further, quality designations may also encourage providers to offer additional teacher trainings or specialized services to children and their families that may add to the cost burden of the provider (National Center on Early Childhood Quality Assurance & National Center on Subsidy Innovation and Accountability, 2018). Research confirms that higher-quality ECE providers tend to have higher overall costs to operate (Caronongan, Kirby, Boller, Modlin & Lyskawa, 2016).

The prices that ECE providers ultimately charge families, however, may not reflect the true cost of providing that care. ECE providers may have other funding sources, such as grants or donations, which allow them offer lower prices (Davis et al., 2017).

This research brief asked whether higher levels of quality are associated with higher prices reported by center-based providers. We use data from the 2012 National Survey of Early Care and Education (NSECE; see Box 1) to describe how various indicators of quality are—or are not—associated with the maximum price reported for each of three age groups: infants (0- to 11-month-olds), toddlers (2-year-olds), and preschoolers (3- and 4-year-olds[4]).

[3] Regular care is defined as at least five hours of care for one child, with the same child care provider, each week.
[4] In centers that reported prices for both 3- and 4-year-olds, the preschool price is the average of the two prices. In centers that had a reported price for 3-year-olds *or* for 4-year-olds, the preschool price is equal to the price in the given age group.

Data source: The National Survey of Early Care and Education

Dataset. This brief is based on information collected by the 2012 National Survey of Early Care and Education (NSECE), a nationally representative study of households and early care and education providers in the United States conducted in 2012. The NSECE was funded by the Office of Planning, Research, and Evaluation (OPRE) in the Administration for Children and Families (ACF), U.S. Department of Health and Human Services. This brief uses data from two NSECE surveys: the Center-Based Provider Survey and the Center-Based Workforce Survey.

Center sample. This brief uses data for 3,194 unweighted (54,853 weighted) center-based ECE providers in community-based[i] settings who responded to the Center-Based Provider Survey. Centers had to report a unsubsidized, full-time enrollment price greater than $0 for at least one child under 60 months of age to be included in this analytic sample. Centers with public funding (i.e., Head Start or public pre-K) or school sponsorship were excluded from the analytic sample because it is not known whether classrooms and teachers in publicly funded programs are working with any children who paid the reported price.

Classroom sample. From each ECE center surveyed, the NSECE randomly selected one classroom from which to obtain classroom-level information, such as group size and adult-child ratio, during the administration of the Center-Based Provider Survey. This brief uses data for 2,780 classrooms (unweighted). To be included in the analysis, a classroom had to be in a community-based center, serve an age group for which the center reported a price, and currently have at least one child enrolled.

Teacher sample. From each classroom, the NSECE randomly selected one workforce member to survey using the Center-Based Workforce Survey. Workforce members were eligible for the survey if they worked at least five hours in the classroom over the past week. This brief uses data from 1,380 (unweighted) of the center-based ECE teachers surveyed. To be included in our analysis, teachers had to work in a community-based center, be a teacher or lead teacher, work with an age group for which the center charged a price, and work most often with children birth to age 5. Classroom assistants and aides were excluded.

[i] Community-based centers are defined as those that did not receive funding or administrative oversight from a public school, Head Start, or public pre-K program. However, they may have received funding from other sources, such as foundations, churches, or state- or federal-based subsidy programs.

Indicators of quality

The NSECE did not collect observational assessments of quality in ECE settings. Instead, the survey asked ECE providers and workforce members about various indicators of quality that researchers and/or best practice have identified as factors that contribute to high-quality care (Madill et al., 2015).

This research brief examines 18[5] of the 19 identified indicators of quality available in the NSECE. Some indicators focus on the center as a whole—for example, whether the center had low staff turnover. Other indicators focus on classrooms (e.g., whether a curriculum was used). Finally, some indicators focus on teachers (e.g., whether a teacher had a post-secondary degree). Tables 1 to 3 provide an overview of all indicators of quality examined.

The design of the NSECE permits statements about three different populations of interest:

- For **ECE centers,** the NSECE permits questions about the tendency for centers with certain types of quality indicators to report higher prices. For example, do centers with low staff turnover rates tend to report higher prices for preschool care, compared to centers with higher turnover rates?

[5] Analyses did not examine stress related to child behavior problems.

- For **ECE classrooms**, the NSECE permits questions about the tendency for center classrooms with certain types of quality indicators to be located in centers with higher prices. For example, do preschool classrooms that use a curriculum tend to be in centers that report a higher price for preschool care, compared to classrooms without a curriculum?
- For **ECE teachers**, the NSECE permits questions about the tendency for teachers with certain types of quality indicators to work in centers with higher prices. For example, do toddler teachers with a bachelor's or advanced degree tend to work in centers with a higher reported price for toddler care, compared to toddler teachers who had less than an associate degree?

Center-level indicators

Table 1 details the indictors of quality focused on the center as a whole.

Table 1. Center-level indicators of quality

Indicator of Quality	Description
Low staff turnover	The center had 0% to 20% staff turnover over the past 12 months.
Services for children and families	The center helps children and their families obtain services, either on-site or by referral (services include health screening, developmental assessments, therapeutic services, counseling services, and/or social services).
Specialists	The center has at least one specialist who works in the program, including language specialists, those who take care of children with special needs, and/or those who teach English as a second language.
Mentors, coaches, or consultants for staff	The center provides mentors, coaches, or consultants for teachers, assistant teachers, or aides to support staff seeking training or professional development opportunities.
Professional development funding	The center provides funding for staff to participate in college courses or off-site trainings.
Paid time off for professional development	The center provides staff with paid time off to participate in college courses or off-site trainings.

Classroom-level indicators

Table 2 details the indictors of quality that focused on the classroom. These indicators are reflective of the randomly selected classroom surveyed in the NSECE.

Table 2. Classroom-level indicators of quality

Indicator of Quality	Description
Curriculum	The classroom uses a curriculum (as reported by the center-based provider).
Low group size/child-adult ratio	The classroom meets National Association for the Education of Young Children (NAEYC) standards for group size and/or child-adult ratio for the classroom's age group.[6] • Child-adult ratio: Infant classrooms: 4 infants or fewer per adult; toddler classrooms: 6 toddlers or fewer; preschool classrooms: 10 children or fewer • Group size: Infant classrooms: 8 children or fewer; toddler classrooms: 12 children or fewer; preschool classrooms: 20 children or fewer
Classroom staff education	The classroom has at least one highly educated staff member. This variable had three levels: (1) no teachers or assistants/aides in classroom had a post-secondary degree, (2) the highest degree of any teacher or assistant/aide in the classroom was a two-year college degree, and (3) at least one teacher or assistant/aide in the classroom had a four-year college degree or higher.

Teacher-level indicators

Table 3 details the indictors of quality measured at the teacher level. These characteristics are reflective of the teacher or lead teacher who was surveyed from the randomly selected classroom in the NSECE.

Table 3. Teacher-level indicators of quality

Indicator of Quality	Description
Coaching, mentoring, or ongoing consultation	The teacher participated in coaching, mentoring, or ongoing consultation with a specialist in the past 12 months.
Child-centered beliefs	This is a continuous measure of teachers' child-centered beliefs, measured using an abbreviated version of the Parental Modernity Scale. Higher scores represent more child-centered beliefs and less adult-centered beliefs.
Attended workshop	The teacher participated in a workshop in the past 12 months to improve skills or gain new skills in working with children.
College course	The teacher enrolled in a course at a community college or four-year college relevant to work with children under age 13 in the past 12 months to improve skills or gain new skills in working with children.
Teacher education	The teacher is highly educated. This variable had three levels for preschool and toddler teachers: (1) no post-secondary degree, (2) associate degree, (3) bachelor's or advanced degree. This variable had two levels for infant teachers: (1) no post-secondary degree, (2) post-secondary degree (associate, bachelor's, or advanced degree).

[6] NAEYC (2018). *Staff-to-child Ratio and Class Size*. Retrieved from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/accreditation/early-learning/staff_child_ratio.pdf

Indicator of Quality	Description
Certificate	The teacher has a Child Development Associate (CDA) certificate or state certification to teach young children, special education, or elementary school.
Respect	The teacher agrees or strongly agrees to the statement, "My coworkers and I are treated with respect on a day-to-day basis."
Classroom stability	The teacher was moved to a different classroom or group of children in the last week.
Professional motivation is career or personal calling	The teacher's main reason for working with young children is related to the teacher's career. This variable had two levels: (1) the teacher marked one of the following responses: "It is my career or profession," "It is a step toward a related career," or "It is my personal calling"; or (2) the teacher marked one of the following: "It is a job with a paycheck," "It is work I can do while my own children are young," "It is a way to help parents," or "None of these reasons apply."

Prices charged for care

The NSECE Center-Based Provider Survey asked providers, "What is the highest rate you are currently charging families for full-time enrollment for [Infants less than 12 months old; 2-year-olds, 3-year-olds; 4-year-olds; school-age children] without any subsidies?" The analytic sample includes all centers that reported prices for care greater than $0 for each specified age group. Centers' hourly rates were adjusted to account for regional differences in cost of living[7] and differences in how centers reported prices.[8] Table 4 shows hourly reported prices for each age group in centers included in the analyses. See Box 2: Methodology for more information about analysis methods.

Table 4. Hourly reported prices for center-based early care and education in 2012, by age group

Age group	Weighted n	**25th** Percentile	Median	75th Percentile	Avg.	Std. Dev.
Infants (0- to 11-month-olds)	28,800	$2.56	$3.23	$4.32	$4.14	$3.25
Toddlers (2-year-olds)	38,000	$2.34	$3.09	$4.26	$4.02	$3.67
Preschool (3- and 4-year-olds)	52,500	$2.28	$3.00	$4.18	$4.04	$4.14

Source. Authors' analysis of the 2012 NSECE Center-Based Provider Survey.
Note. Prices are based on providers charging non-zero prices for care and weighted to total number of providers providing care. Per data disclosure rules, sample sizes and prices are rounded.

[7] Twelve cost-of-living adjustment weights were used—one for each combination of urbanicity (rural, moderate-density urban, high-density urban) and U.S. region (Northeast, Midwest, South, and West). Weights were provided by the authors of the NSECE dataset.
[8] The NSECE Center-Based Provider Survey includes an hourly rate variable (CB_B1_5_STDRATE_HRLY_X_TC) that was calculated by dividing the center's highest rate without subsidy by the number of hours covered by that rate. For this brief, this hourly price variable was adjusted for a subset of providers who reported weekly prices. To determine the denominator for the hourly rate variable, providers who reported a weekly rate were asked, "How many hours does that cover?" However, review of responses suggests that many providers stated the number of hours covered per day (rather than hours per week, as intended). Therefore, for providers who (1) reported weekly rates, (2) reported fewer than 15 hours were covered by that weekly rate, and (3) reported having more hours open per week than hours covered by that weekly rate, we re-calculated an hourly rate variable by dividing the provider's weekly rate by the number of hours the center was open per week (CB_HRSOPEN_WEEK_R).

Methodology

Separate regression analyses were conducted to test whether each indicator of quality (the independent variable) was significantly associated with the adjusted hourly price charged for a given age group (the dependent variable). Each regression analysis controlled for total child enrollment, community urban density, community poverty density, ages served by the center (i.e., ages 0-3 only, 3-5 only, or 0-5), and the time period for which the provider originally reported the price prior to its being converting to an hourly rate (i.e., hourly/half day/full day, weekly, monthly, term/year, and other). Weights were applied to obtain nationally representative estimates.

We interpreted associations that were significant at $p < 0.10$.[ii] Some regressions for infant prices could not be conducted because sample sizes were smaller than those required by the NSECE's reporting requirements for restricted-use data. Regression results are summarized in figures 1 to 7, with detailed results in Appendix A.

Based on the results from each regression, we report the predicted price at each level of a quality indicator (for example, the infant price in a low-turnover center and the infant price in a high-turnover center). These predicted prices hold all covariates at their mean values. Significance bars in each figure indicate differences between predicted values.

Although this brief considers each indicator of quality's association with price in a separate analysis, quality indicators tend to co-occur. For example, more educated teachers tend to have more child-centered beliefs.

[ii] As these analyses were exploratory and we did not have explicit hypotheses, no adjustments were made for multiple significance tests. Future analyses are needed to confirm the significant findings.

Findings

Center-level indicators of quality

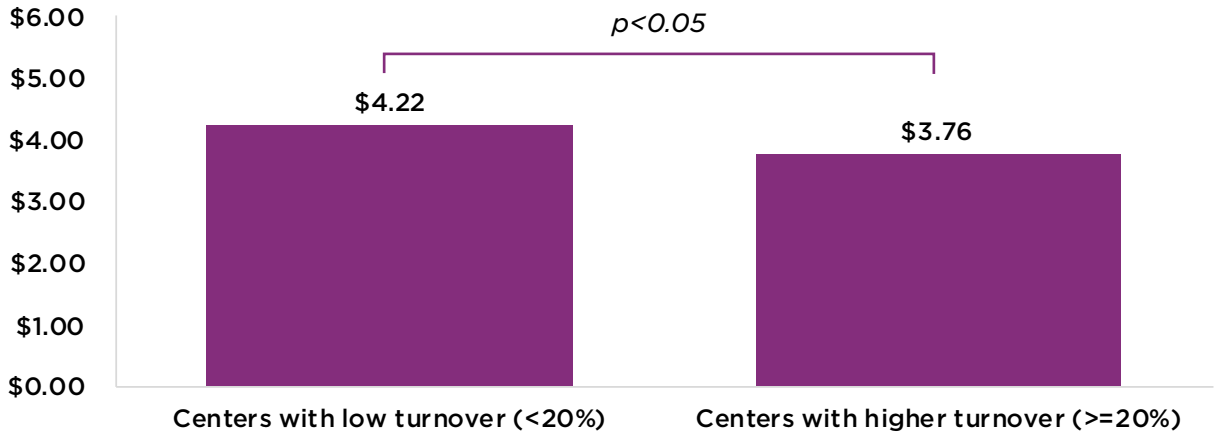
In community-based centers, seven indicators of quality were associated with child care prices, including low staff turnover, classroom use of curriculum, classroom- and teacher-level staff education, teachers' participation in a professional development workshop, teachers' certification, teachers' feelings of being respected at work, and teachers' professional motivations. However, these associations varied depending on child age.

Preschool care

Figure 1 shows that reported prices for preschool care were higher in centers with lower staff turnover, compared to centers with higher staff turnover.

For the five other center-level quality indicators, preschool prices did not vary by quality. See Table 1 for a full list of center-level quality indicators and Appendix A for detailed results.

Figure 1. Predicted hourly reported price for preschool care in a community-based center, by center turnover rate



Source. Authors' analysis of the NSECE Center-Based Provider Survey.
Note. The sample was limited to community-based centers with non-zero prices for 3- and/or 4-year-olds. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted reported prices are based on a regression in which preschool prices were predicted by center turnover rates, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Toddler care

Of the six center-level quality indicators, none were associated with prices for toddler care in community-based centers. See Table 1 for a full list of center-level quality indicators and Appendix A for detailed results.

Infant care

Of the six center-level quality indicators, none were associated with prices for infant care in community-based centers. See Table 1 for a full list of center-level quality indicators and Appendix A for detailed results.

Classroom-level indicators of quality

Preschool care

Figure 2 shows the predicted hourly prices reported for preschool care in community-based centers, by classroom-level quality indicators with significant associations with reported prices:

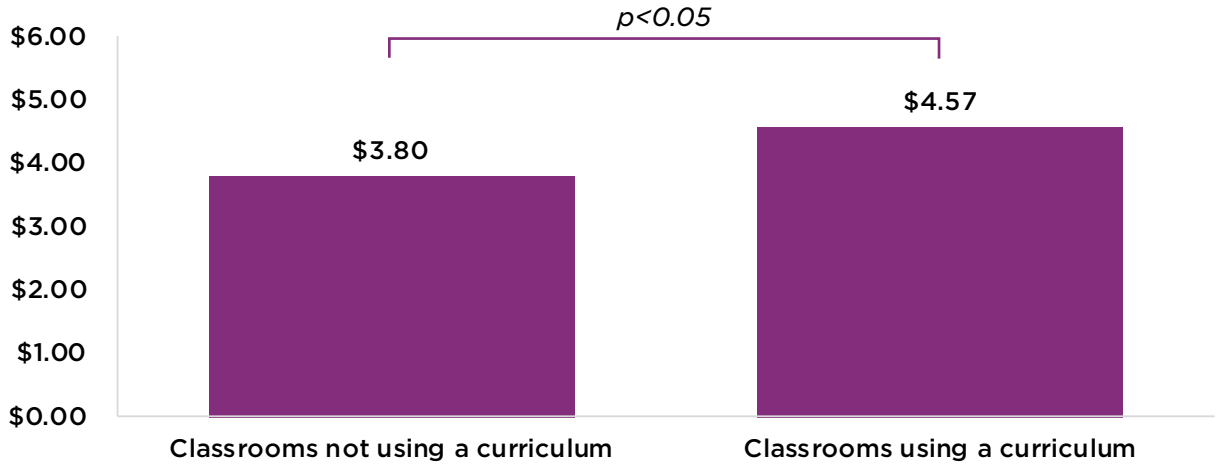
A. Preschool classrooms that used a curriculum tended to be located in centers with a higher reported preschool price, compared to classrooms without a curriculum.

B. Preschool classrooms in which at least one staff member had a four-year degree tended to be located in centers with a higher reported preschool price, compared to preschool classrooms where the highest education of any staff member was a two-year degree. Classrooms where **no staff member had a post-secondary degree**, however, tended to be found in centers with a predicted price that was not significantly different from classrooms that included staff members with a two-year degree **or** a four-year degree. This may be because classrooms where no staff member had a post-secondary degree are located in a wide variety of centers, some of which report low prices while others report higher prices.

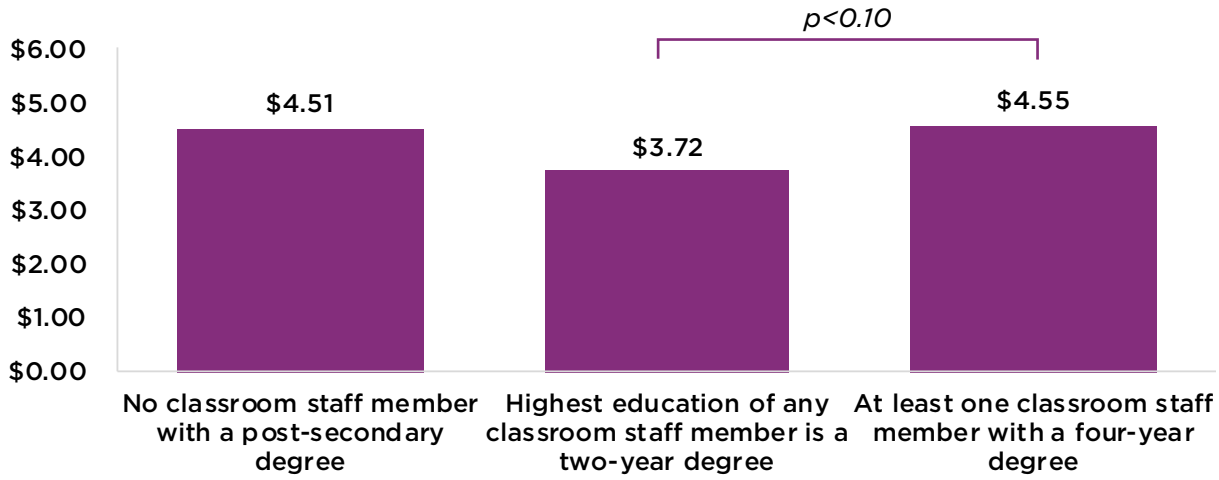
The other classroom-level quality indicator considered, group size/child-adult ratio, was not associated with preschool prices. See Table 2 for a full list of classroom-level quality indicators and Appendix A for detailed results.

Figures 2A and 2B. Predicted hourly reported price for preschool care in a community-based center, by the following quality indicators:

A. Classroom use of curriculum



B. Classroom staff education level



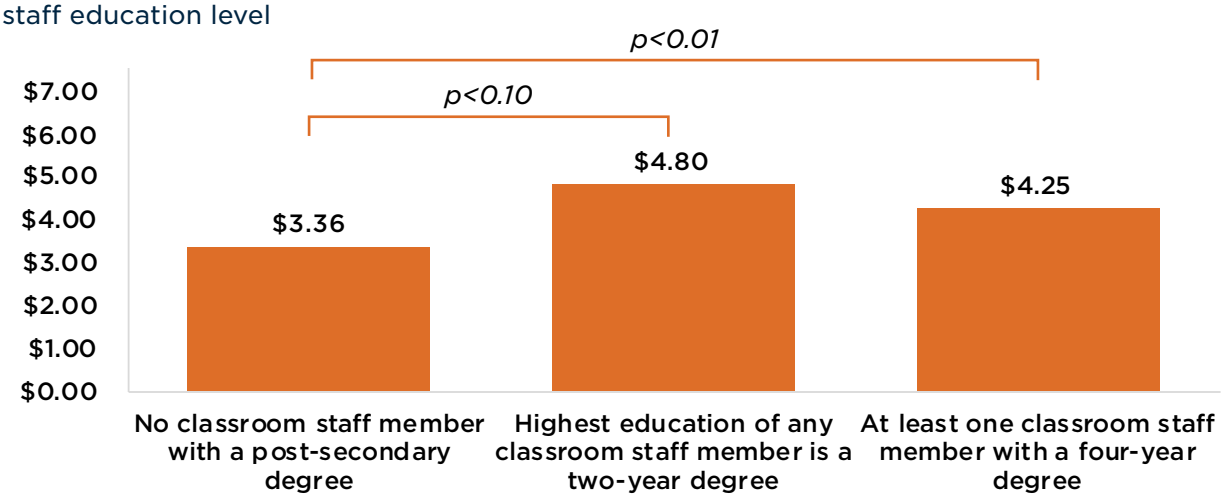
Source. Authors' analysis of the NSECE Center-Based Provider Survey.
Note. The sample was limited to classrooms serving 3- and/or 4-year-olds in community-based centers with non-zero prices for 3- and/or 4-year-olds. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted reported prices are based on a regression in which preschool prices were predicted by the classroom-level quality indicator of interest, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Toddler care

Figure 3 shows that toddler classrooms in which at least one staff member had a two- or four-year degree tended to be located in centers with a higher reported price for toddler care, compared to toddler classrooms where none of the staff had a post-secondary degree.

For the two other classroom-level quality indicators considered, reported prices for toddler care did not vary by quality. See Table 2 for a full list of classroom-level quality indicators and Appendix A for detailed results.

Figure 3. Predicted hourly reported price for toddler care in a community-based center, by classroom staff education level



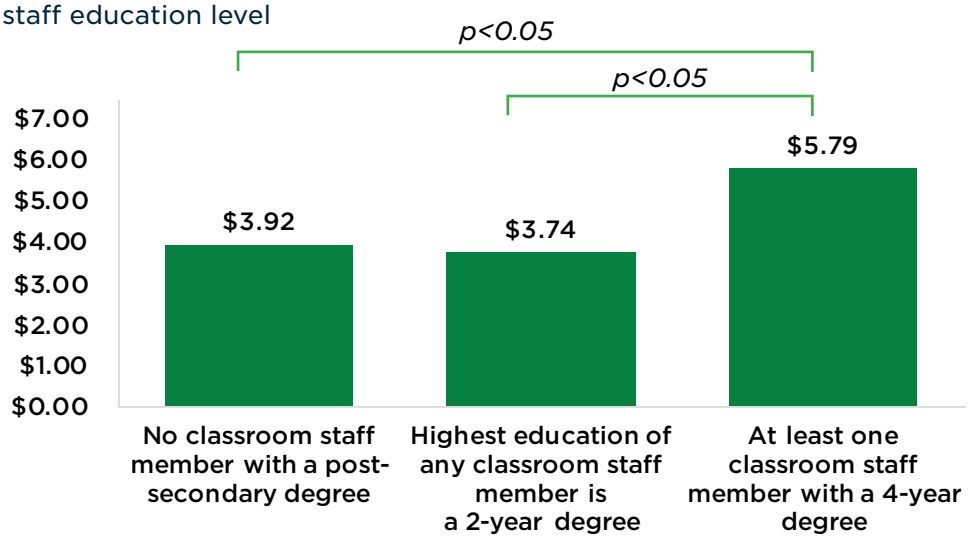
Source. Authors' analysis of the NSECE Center-Based Provider Survey.
Note. The sample was limited to classrooms serving 2-year-olds in community-based centers with non-zero prices for 2-year-olds. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted prices are based on a regression in which reported prices for toddler care were predicted by classroom staff education levels, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Infant care

Figure 4 shows that infant classrooms in which at least one staff member had a four-year degree tended to be located in centers with higher reported prices for infant care, compared to classrooms with staff members with lower levels of education.[9]

For the other classroom-level quality indicator considered (curriculum use), prices for infant care did not vary by quality. See Table 2 for a full list of classroom-level quality indicators and Appendix A for detailed results.

Figure 4. Predicted hourly reported price for infant care in a community-based center, by classroom staff education level



Source. Authors' analysis of the NSECE Center-Based Provider Survey.
Note. The sample was limited to classrooms serving children from birth to 11 months in community-based centers with non-zero prices for children in this age group. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted prices are based on a regression in which reported prices for infants were predicted by classroom staff education levels, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

[9] The price difference between classrooms with a staff member holding a two-year degree and classrooms with no post-secondary degree-holding staff members was not statistically significant.

Teacher-level indicators of quality

Preschool care

Figure 5 shows the predicted hourly prices reported for preschool care in community-based centers, by teacher-level quality indicators:

A. Preschool teachers who had attended a professional development workshop in the past year tended to work in centers with a higher reported preschool price, relative to teachers who had not attended a professional development workshop in the past year.

B. Preschool teachers with a certificate tended to work in centers with a higher reported preschool price, compared to preschool teachers without certification.

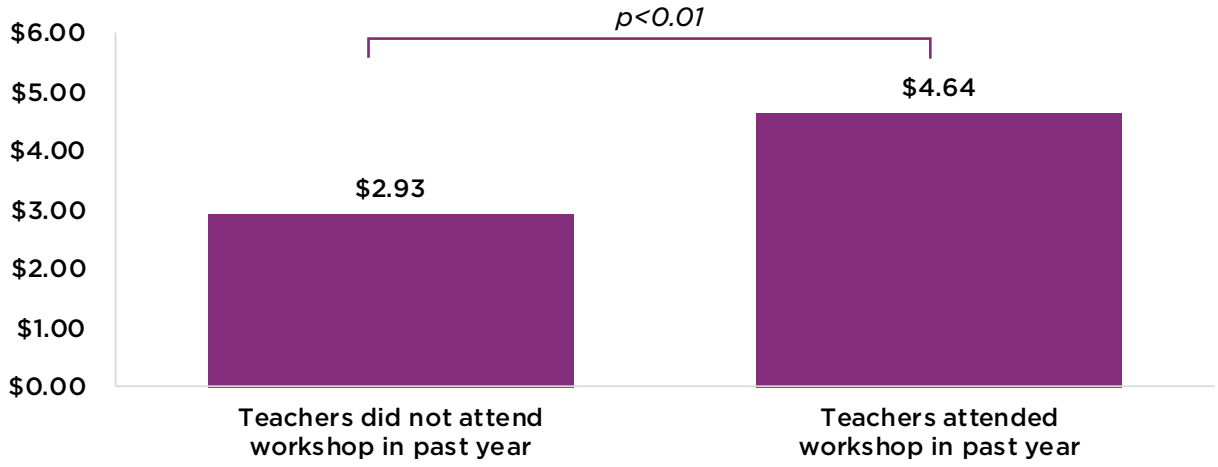
C. Preschool teachers who felt that they and their coworkers were treated with respect at work tended to work in centers that had a higher reported preschool price, relative to those teachers who felt less respected.

D. Preschool teachers who taught for reasons related to a career or personal calling tended to work in centers with a higher reported preschool price, compared to teachers who taught for other reasons (i.e., it was a job with a paycheck, work they could do while their own children were young, a way to help parents, or none of the listed reasons).

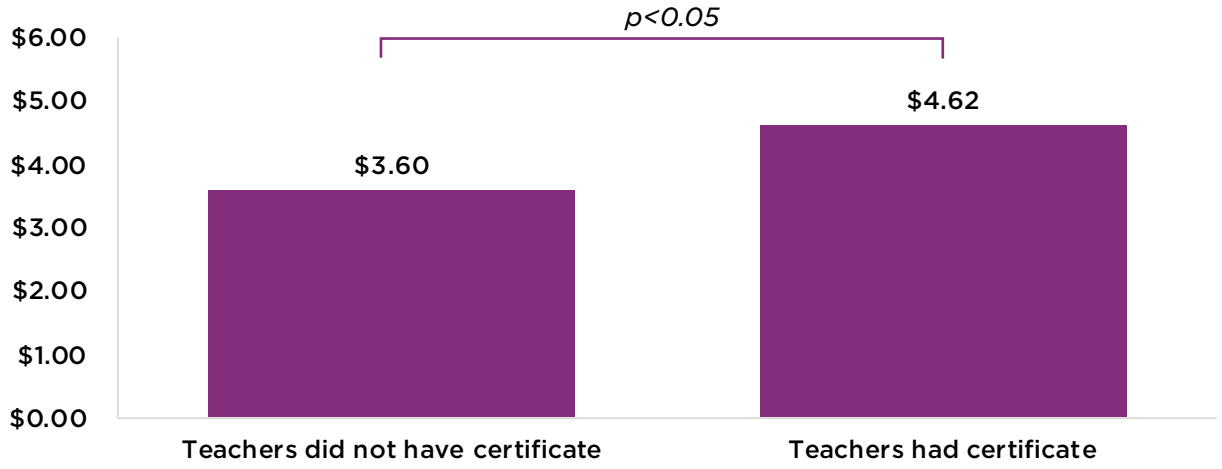
For the five other teacher-level quality indicators considered, preschool prices did not vary by quality. See Table 3 for a full list of teacher-level quality indicators and Appendix A for detailed results.

Figures 5A, 5B, 5C, and 5D. Predicted hourly reported price for preschool care in a community-based center, by the following quality indicators:

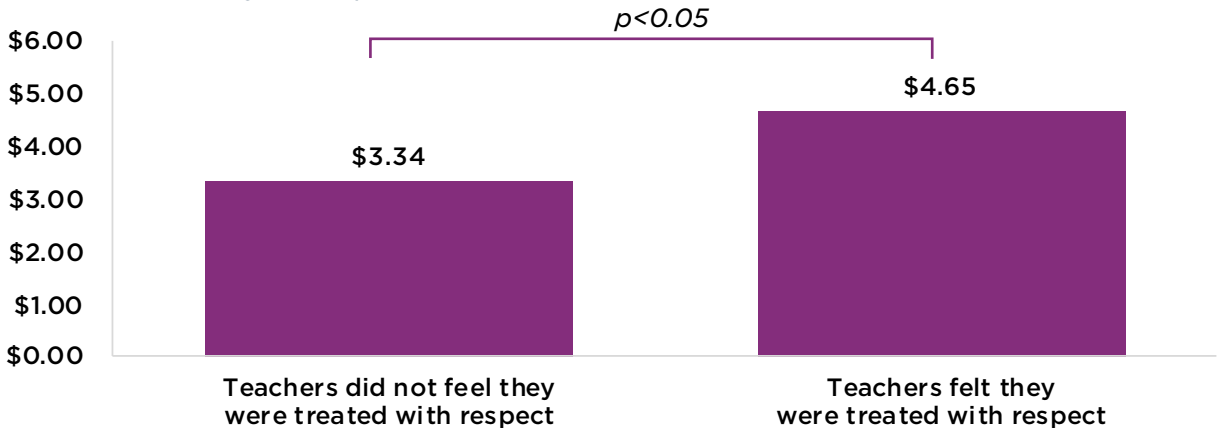
A. Teachers' workshop attendance



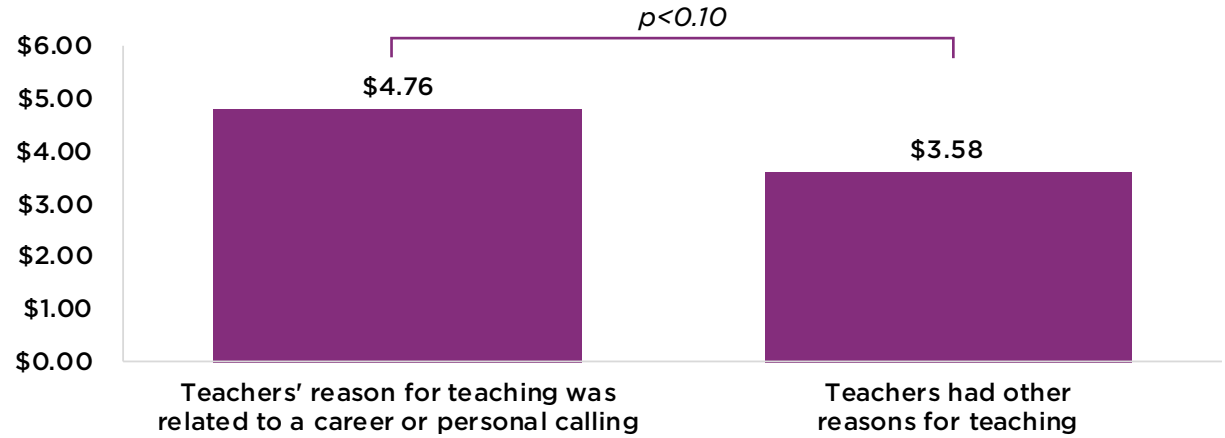
B. Teacher certification (i.e., CDA certificate or state certification to teach young children, special education, or elementary school)



C. Teachers' feelings of respect



D. Teachers' reasons for teaching



Source. Authors' analysis of the NSECE Center-Based Workforce Survey.
Note. The sample was limited to teachers and lead teachers who primarily worked with 3-and/or 4-year-olds in community-based centers with non-zero prices for 3- and/or 4-year-olds. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted reported prices are based on a regression in which prices for preschool care were predicted by the teacher-level quality indicator of interest, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Toddler care

Figure 6 shows the predicted hourly prices reported for toddler care in community-based centers, by teacher-level quality indicators.

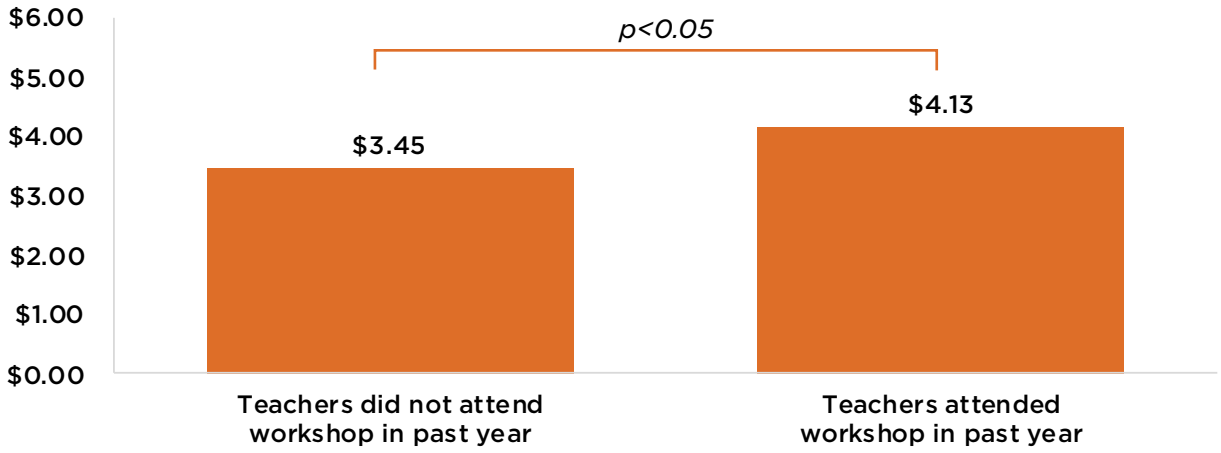
A. Toddler teachers who had attended a workshop in the past year tended to work in centers with a higher reported price for toddler care, compared to toddler teachers who had not attended a workshop.

B. Toddler teachers with a bachelor's or advanced degree tended to work in centers with a higher reported price for toddler care, compared to toddler teachers with no post-secondary degree. Toddler teachers whose highest level of education was an associate degree were somewhere in the middle, with prices that were not significantly different from those with teachers at the extremes of the education measure.

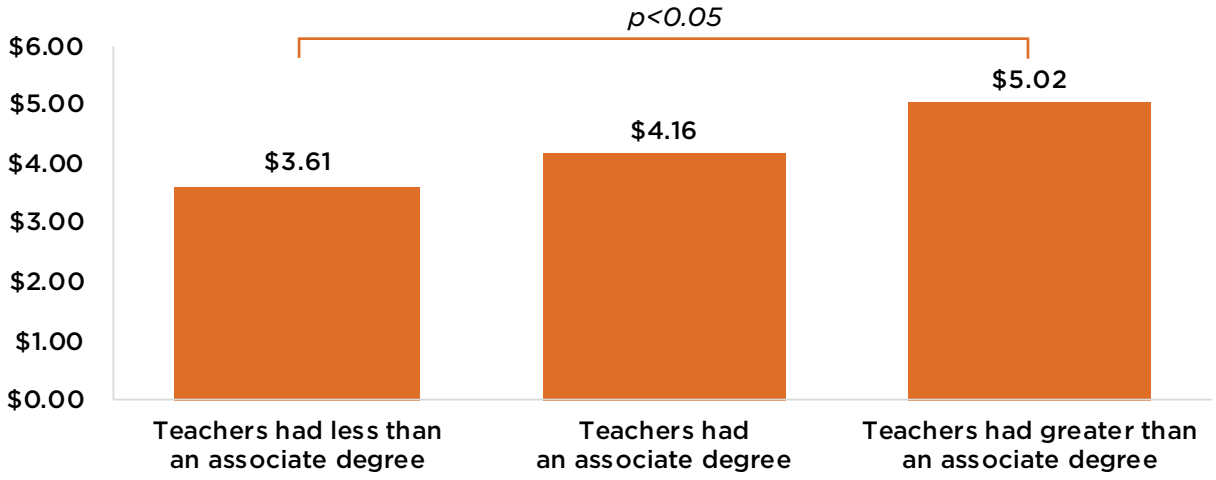
For the seven other teacher-level quality indicators considered, prices for toddler care did not vary by quality. See Table 3 for a full list of teacher-level quality indicators and Appendix A for detailed results.

Figures 6A and 6B. Predicted hourly reported price for toddler care in a community-based center, by the following quality indicators:

A. Teachers' workshop attendance



B. Teachers' education



Source. Authors' analysis of the NSECE Center-Based Workforce Survey.
Note. The sample was limited to teachers and lead teachers who primarily worked with 2-year-olds in community-based centers with non-zero prices for 2-year-olds. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted prices are based on a regression in which reported prices for toddler care were predicted by the teacher-level quality indicator of interest, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Infant care

Figure 7 shows the predicted hourly prices reported for infant care in community-based centers, by teacher-level quality indicators:

A. Infant teachers with a certificate tended to work in centers with a higher reported price for infant care, compared to infant teachers who did not have a certificate.

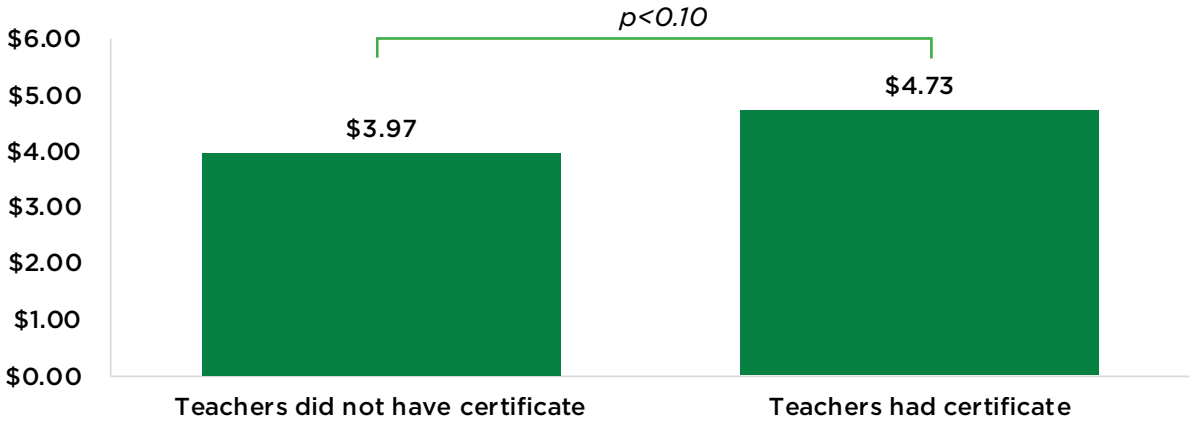
B. Infant teachers who taught for reasons related to a career or personal calling tended to work in centers with a higher reported price for infant care, compared to teachers who taught for other reasons (i.e., it was a job with a paycheck, work they could do while their own children were young, a way to help parents, or none of the listed reasons).

For the four other teacher-level quality indicators considered, prices for infant care did not vary by quality. See Table 3 for a full list of teacher-level quality indicators and Appendix A for detailed results.

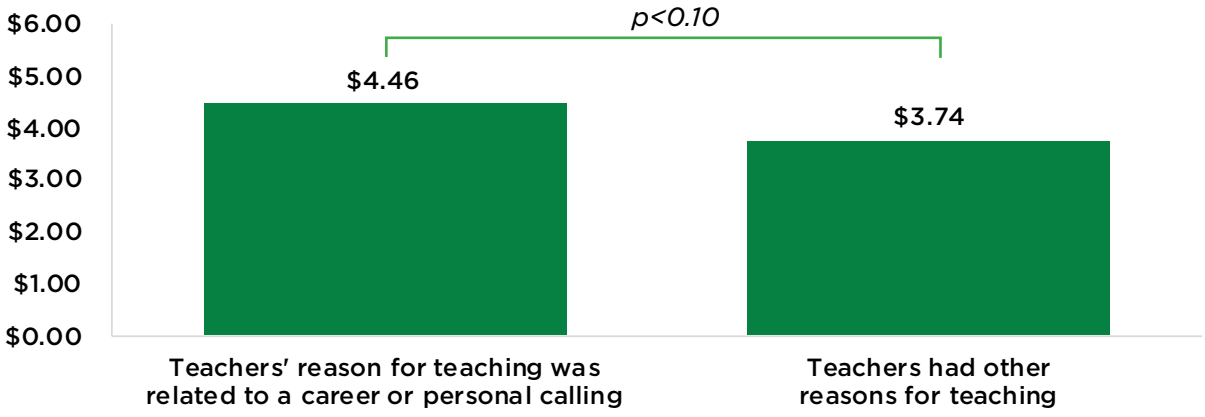
Due to the small sample of infant teachers, we could not examine the association between infant care price and the following quality indicators: coaching, mentoring, or consultation provided; attended workshops; perceived respect.

Figures 7A and 7B. Predicted hourly reported price for infant care in a community-based center, by the following quality indicators:

A. Teacher certification (i.e., CDA certificate or state certification to teach young children, special education, or elementary school)



B. Teachers' reasons for working



Source. Authors' analysis of the NSECE Center-Based Workforce Survey.
Note. The sample was limited to teachers and lead teachers who primarily worked with children from birth to 11 months in community-based centers with non-zero prices for children in that age group. Centers that received Head Start or public pre-K funding were excluded, as were public school-sponsored centers. Predicted reported prices are based on a regression in which prices for infants were predicted by teachers' reason for teaching, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate.

Summary and Implications

This brief uses data from the 2012 NSECE to determine whether higher-quality ECE providers tend to report higher prices for care. Table 5 summarizes findings from the regression analyses. In community-based centers without public funding (i.e., Head Start or public pre-K) or public school sponsorship, four indicators of quality were somewhat consistently associated with hourly prices (i.e., associations were found in more than one of the age groups examined). Specifically, these four quality indicators included teachers' education level at the classroom level, teachers' participation in professional development workshops, teachers' completion of a certificate (i.e., a CDA or state certification to teach young children, special education, or elementary school), and teachers' professional motivation. As these four indicators all relate to teachers' training and professional development, these findings could imply that providers that are able to charge higher prices may do so to support a more qualified and higher-paid ECE workforce.

Table 5. Significance of associations[a] with prices reported[b] for infant, toddler, and preschool care in community-based settings

Indicator of Quality	Indicator Level [c, d, e, f]	Infant Care Price	Toddler Care Price	Preschool Care Price
Low staff turnover	Center	NS	NS	**
Services for children and families	Center	NS	NS	NS
Specialists	Center	NS	NS	NS
Mentors, coaches, or consultants for staff	Center	NS	NS	NS
Professional development funding	Center	NS	NS	NS
Paid time off for professional development	Center	NS	NS	NS
Curriculum	Classroom	NS	NS	**
Low group size/ratio	Classroom	#	NS	NS
Classroom staff education	Classroom	**	*	*
Coaching, mentoring, or ongoing consultation	Teacher	#	NS	NS
Child-centered beliefs	Teacher	NS	NS	NS
Attended workshop	Teacher	#	**	***
College course	Teacher	NS	NS	NS
Teacher education	Teacher	NS	**	NS
Certificate	Teacher	*	NS	**
Respect	Teacher	#	NS	**
Classroom stability	Teacher	NS	NS	NS
Professional motivation is career or personal calling	Teacher	*	NS	*

Source. Authors' analysis of the NSECE Center-Based Provider Survey and Center-Based Workforce Survey.
Notes. (a) For all significant findings, higher levels of quality were associated with higher reported prices. (b) Significance tests are based on a regression in which prices were predicted by the quality indicator of interest, controlling for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converted to an hourly rate. (c) Center-level analyses were limited to community-based centers with non-zero prices for the age group of interest. (d) Classroom analyses were limited to classrooms serving the age group of interest in community-based centers with non-zero prices for the age group of interest. (e) Teacher-level analyses were limited to teachers primarily working with the age group of interest in community-based centers with non-zero prices for the age group of interest. (f) School-sponsored and Head Start- or public pre-K-funded centers were excluded from all analyses. (g) *** p<0.01, ** p<0.05, * p<0.1, NS not significant; # result suppressed; due to suppression rules, we do not interpret differences between groups when one of the groups being compared had <50 unweighted cases.

Many other quality indicators, however, did not have significant associations with prices. For example, ECE centers that help children and their families get services—either on-site or by referral (e.g., health screening, developmental assessments, therapeutic services, counseling services, and/or social services)—do not systematically report higher prices for care than centers that do not offer such services. And although teachers who report attending workshops in the past year tended to work in ECE centers that report higher prices, receipt of coaching, mentoring, or ongoing consultation was unrelated to the reported price in centers.

These mixed findings are consistent with previous work, suggesting that the prices charged by ECE providers do not always reflect the true cost of providing that care (Davis et al., 2017). In addition to considering prices charged by a child care center, families seeking high-quality care can ask whether a center is accredited (e.g., through NAEYC) or participates in their state's QRIS.

Notably, there were few associations between reported prices for infant and toddler care and indicators of quality. Previous research has found that the cost of providing care (e.g., paying for staff salaries, rent, and supplies) is significantly higher for infant and toddler care than for preschool care, due in large part to required smaller class sizes and child/adult ratios. As a result, child care providers often set infant and toddler care at prices that are more reflective of what parents and families can reasonably pay, rather than prices that would cover the full cost of care. To help offset the high cost of care for younger children, child care providers may raise the price of preschool care beyond its true cost (Workman & Jessen-Howard, 2018). The discrepancies between the cost of providing high-quality care and the prices that parents and families can pay to access that care can complicate the relationship between the reported price and quality of child care, particularly for families of infants and toddlers.

There was also an unexpected finding in this study. As noted in Figure 2b, preschool classrooms in which no staff member held a post-secondary degree tended to be located in centers with a predicted price that was not significantly different from classrooms in which the highest level of staff education was a two-year degree, or from classrooms where at least one staff member had a four-year degree or higher. Subsequent analyses exploring the characteristics of these preschool classrooms did not explicitly illuminate why classrooms without a staff member with a post-secondary degree were charging prices similar to the other classroom types. One interesting observation in this exploration was that classrooms in which no staff member had a post-secondary degree included a wider range of reported prices than the other types of classrooms. This could suggest that classrooms without a staff member with a post-secondary degree can be found in a wide variety of settings, some of which are significantly more expensive than others. It is also possible that the price set for some of these preschool classrooms without post-secondary staff education may be inflated to subsidize costs elsewhere in the setting. These possible explanations are preliminary and beyond the scope of these analyses, but represent an area worthy of future exploration.

Limitations of the present study

There are several caveats regarding the analyses presented in this brief. First, we are examining the highest unsubsidized price reported by providers, which may not accurately reflect the true prices that families pay for children's care after accounting for subsidies, scholarships, or discounts. Additionally, although the analytic sample excluded centers that receive funding from Head Start or public pre-K, or are sponsored by public school districts, centers that served children receiving subsidies were included in this exploration. It is possible that receipt of subsidies may impact the highest unsubsidized rate centers report charging to private-paying families. On the one hand, providers who serve many children with a subsidy have a steady stream of public funding, which may allow them to offer low rates for private-paying families. On the other hand, low reimbursement rates for subsidized care in many states may lead some providers to make up for lost income by charging high rates for private-paying families. Future analyses may wish to investigate the relationship between quality indicators and the true price of care for families.

Second, the price data itself may contain measurement error, particularly as several providers reported prices at differing intervals (e.g., monthly, weekly) that were converted into an hourly price of care. Furthermore, some providers were missing price information altogether, even though they likely charged some families for care.

Third, the regression analyses explored associations between quality indicators and reported child care price, and did not explore causal linkages between these factors. That is, while this study identifies instances in which reported price shares a relationship with a quality indicator, it does not necessarily imply that the presence of a quality indicator *causes* a change in price.

Fourth, the regression analyses examined quality indicators *separately*, even though quality indicators can co-occur in ECE settings. It is worthwhile to consider how the provision of concurrent indicators of quality may complicate the association between individual quality indicators and reported prices. For example, teachers with more advanced education credentials tend to exhibit more child-centered beliefs, yet it is unlikely that the provision of these indicators represent an equal premium on the reported price of care. Future analyses may consider exploring associations stratified by the number of quality indicators present or engaging in sensitivity analyses to identify the most influential quality indicators.

Finally, the sampling design of the 2012 NSECE is such that indicators of quality at the classroom and teacher levels do not represent all classrooms or teachers in the centers to which we are assigning a reported price. In addition, the analyses in this report were exploratory and we did not have explicit hypotheses; thus, no adjustments were made for multiple significance tests. Future analyses are needed to confirm the significant findings.

Implications for ECE research and policy

Despite these limitations, the existing findings point in promising directions for further investigation into the associations between price and quality of care. The study also reinforces the need for additional information about what goes into the price of care for decision makers, including parents and policymakers.

Avenues for further research

The present study provides an analysis of the relationship between price and quality within community-based ECE centers; however, many families use other types of child care. Future studies should consider the association between indicators of quality and prices charged in home-based care. Additionally, it would be important to explore the association between reported price and quality in publicly funded child care centers that also serve private-paying families. Of particular concern are infant/toddler classrooms in centers with public pre-K programs (Workman & Jessen-Howard, 2018). When centers cannot charge higher prices for preschool care to subsidize the price of more resource-intensive infant/toddler care, are there more consistent associations between quality and price for infant/toddler care?

Notably, we conducted initial exploratory analyses of centers that receive public funding but also serve private-paying families, finding no significant associations between center-level indicators of quality and reported price. However, we were unable to do similar analyses of classroom- and teacher-level indicators of quality because we were unable to ensure that the randomly selected classroom included any private-paying children. The 2019 NSECE—and other data sources with detailed information about the funding of children within a classroom—will permit such an analysis.

Future research may also explore how centers' participation in quality initiatives and/or cost-sharing opportunities affect investments in various quality indicators. These initiatives and opportunities may complicate the relationship between reported price and quality. For example:

- Are there situations in which a center meets one quality indicator at the expense of other quality indicators? For example, if a center must meet low group size or child-adult ratio requirements

for licensing or accreditation, does the center compensate for the increased cost of supplying more staff by hiring teachers with less education or providing fewer professional development opportunities to their staff?

- Do centers that participate in QRIS receive financial support or incentives to offset the cost of meeting a quality indicator? If so, does that support ultimately affect the prices charged to families to provide that care?
- Is the cost of meeting certain quality indicators lower for franchised centers that can pool costs across multiple providers? If so, does that cost-sharing opportunity reduce the impact of meeting a quality indicator on the prices charged to families?

Finally, there are, of course, several other factors that affect prices across states and localities, such as licensing regulations or location-specific supply and demand markets for child care. Additional analyses may use state-level ECE datasets to examine whether the influence of these location-specific factors on child care price is masked when analyzing trends at the national level.

Policy considerations

A main finding of this study is that there are few associations between reported prices and indicators of quality, especially for infant and toddler care. Decision makers, including parents and policymakers, need additional information about what drives the prices charged for child care and what those prices "buy" families in terms of the quality of care for their children. It may also be helpful to know how many families pay the center's reported price and how many pay a lower rate due to subsidies or scholarships. This information is important for consumer education efforts, and can guide policymakers in how to invest in programs to enhance the quality of ECE without passing along the price burden to families.

Ensuring that low-income children have access to high-quality care is a central tenet of the reauthorized Child Care and Development Fund (CCDF), which provides subsidized child care to low-income working families. Efforts are currently underway to understand the true cost of providing child care. For example, states may choose to use cost modeling to understand how much child care centers should be reimbursed to provide care for low-income children funded by CCDF (Davis et al., 2017). Ultimately, these efforts will allow funders to ensure that ECE providers have the resources they need to provide high-quality care.

Appendix A: Data Tables

Table A1. Summary of regression results for quality indicators predicting early care and education prices.

Quality Indicator	Infant Care Hourly Price (0-11 months)		Toddler Care Hourly Price (24-35 months)		Preschool Care Hourly Price (3- and 4-year-olds) [a]	
Center-Level Indicators of Quality - The center...	b	SE	b	SE	b	SE
...had less than 20% staff turnover over the past 12 months *(reference: ≥ 20%)*	-0.04	0.26	0.32	0.20	**0.46****	**0.20**
...helps children and their families get services, either on-site or by referral *(reference: No)*	-0.25	0.50	-0.05	0.32	0.17	0.28
...has at least one specialist who works in the program *(reference: No)*	-0.05	0.33	0.76	0.67	0.43	0.50
...provides mentors, coaches, or consultants for teachers, assistant teachers, or aides to support staff seeking training or professional development opportunities *(reference: No)*	0.28	0.34	0.10	0.23	0.31	0.24
...provides funding for staff to participate in college courses or off-site trainings *(reference: No)*	0.14	0.28	-0.39	0.34	0.12	0.30
...provides staff with paid time off to participate in college courses or off-site trainings *(reference: No)*	0.23	0.26	-0.12	0.26	0.23	0.25
Classroom-Level Indicators of Quality - The classroom...	b	SE	b	SE	b	SE
...uses a curriculum *(reference: No)*	0.24	0.45	0.32	0.27	**0.76****	**0.38**
...meets NAEYC standards for group size and/or ratio for the classroom's age group *(reference: meets neither group size nor ratio standards)*						
Meets either group size or ratio standards, but not both	#	#	0.06	0.50	-2.39	2.57
Meets both group size and ratio standards	#	#	0.18	0.55	-1.84	2.31
...has at least one highly educated staff member *(reference: Highest degree of any teacher or assistant/aide in the classroom is a 2-year college degree)*						
No teachers or assistants/aides in the classroom had a post-secondary degree	0.18	0.32	**-1.45***	**0.84**	0.80	0.53
At least one teacher or assistant/aide in the classroom had a 4-year college degree or higher	**2.05 ****	**0.84**	-0.56	0.89	**0.83***	**0.46**

Teacher-Level Indicators of Quality (sample includes teachers and lead teachers, but no assistants or aides)	b	SE	b	SE	b	SE
The teacher participated in coaching, mentoring, or ongoing consultation with a specialist in the past 12 months *(reference: No)*	#	#	0.70	0.74	-0.41	0.49
Continuous measure of the teacher's child-centered beliefs, measured using an abbreviated version of the Parental Modernity Scale *(higher scores represent more child-centered beliefs and less adult-centered beliefs)*	0.05	0.06	-0.04	0.39	-0.02	0.74
The teacher participated in any workshops in the past 12 months to improve skills or gain new skills in working with children *(reference: No)*	#	#	**0.68****	**0.33**	**1.71*****	**0.55**
The teacher enrolled in a course at a community college or four-year college relevant to work with children under age 13 in the past 12 months to improve skills or gain new skills in working with children *(reference: No)*	-0.86	0.63	0.27	0.45	0.02	0.41
3-level education measure: The teacher is highly educated *(reference: No post-secondary degree)*						
Associate degree	**Analysis was not conducted for infant teachers**		0.54	0.66	-0.83	0.51
Bachelor's or advanced degree			**1.41****	**0.56**	0.002	0.82
2-level education measure (infant teachers only): The teacher is highly educated *(reference: no post-secondary degree)*	-0.02	0.50	**Analysis was only conducted for infant teachers**		**Analysis was only conducted for infant teachers**	
The teacher has a Child Development Associate (CDA) certificate or state certification to teach young children, special education, or elementary school. *(reference: No certification)*	**0.76***	**0.45**	0.55	0.40	**1.03****	**0.52**
The teacher agrees or strongly agrees to the statement, "My coworkers and I are treated with respect on a day-to-day basis." *(reference: strongly disagree, disagree, or neither disagree nor agree)*	#	#	0.18	0.51	**1.31****	**0.61**
The teacher was moved to a different classroom or group of children in the last week *(reference: Never)*	1.23	0.98	-0.47	0.46	0.12	0.55
The teacher's main reason for working with young children is because it is my career or profession, a step towards a related career, my personal calling *(reference: a job with a paycheck, work I can do while my own children are young; a way to help parents; none of these reasons)*	**0.72***	**0.42**	-0.25	0.36	**1.18***	**0.62**

Source. Authors' analysis of the NSECE center-based provider and workforce surveys.
Notes. For a given age group (i.e., infant, toddler, preschool), each row represents a separate regression analysis in which price was predicted by one quality indicator. Regressions controlled for total child enrollment, community urban density, community poverty density, ages served by the center, and the time period for which the provider originally reported the price prior to its being converting to an hourly rate. The sample for each regression was limited to centers with non-zero prices for the age group of interest. [a] Preschool hourly price was calculated as the average of 3-year-old prices and 4-year old prices. In some cases, centers reported 3- and 4-year old prices using different time periods (e.g., the 3-year-old rate was given as a weekly rate, whereas 4-year-old rate was given as a monthly rate). Because regression models controlled for the time period for which rates were initially reported prior to being converted to hourly rates, we categorized preschool prices as having an "other" time period if there were different time periods for 3- and 4-year-olds. These cases constituted less than 2% of the sample in all preschool models.
*** p<0.01, ** p<0.05, * p<0.1, # result suppressed because at least one response level for the quality indicator had fewer than 50 unweighted cases; significant values bolded.

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