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Child Care and Early Education Policy and Research Analysis

Early Care and Education in Rural Communities

Katherine Paschall, Tamara Halle, Kelly Maxwell

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Submitted by: Katherine Paschall, Tamara Halle, Kelly Maxwell
Child Trends

Submitted to: Ivelisse Martinez-Beck, PhD., Project Officer
Office of Planning, Research, and Evaluation
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Project Director: Kathryn Tout
Child Trends
7315 Wisconsin Avenue
Ste. 1200W
Bethesda, MD 20814

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Overview and Key Findings

This report provides a descriptive comparison of the early care and education (ECE) landscape across rural, moderate-density urban (suburban), and high-density urban areas. The goal of this comparison was to understand whether ECE availability and characteristics in rural areas differ from those in more densely populated communities. We used nationally representative data on both households with young children and ECE providers to describe availability of care, use of and need for child care, and setting and workforce characteristics in rural, moderate-density urban, and high-density urban areas. Key findings from this report relate to the following:

Availability and use of care

- In absolute numbers, more ECE providers of every provider type (e.g., center-based, listed home-based, unlisted paid home-based) were available in high-density urban areas than in rural areas. Center-based care comprised about 50 percent of all care that was provided in a center or listed home; this was true across rural and more urban areas. In terms of the number of families per provider, there were fewer families per center-based and home-based provider in rural areas than in more urban areas.
- A smaller proportion of centers served infants and toddlers in rural areas than in both moderate- and high-density urban areas. A smaller proportion of infants and toddlers in rural areas regularly used center-based care than those in moderate-density (but not high-density) urban areas.
- There were no significant differences by rurality in the ages of children served by listed or unlisted paid home-based providers.

Families' need for and difficulties finding care

- In rural areas, less than 50 percent of families with infants and toddlers searched for care in the past year. This percentage is proportionally lower than families in moderate-density urban areas and proportionally similar to families in high-density urban areas.
- Findings signal that families in rural and moderate-density urban areas may have a greater need for care during nonstandard hours (overnight and weekend hours). While few families in any area worked solely nonstandard hours, proportionally more families in rural and moderate-density urban areas reported working a mix of both standard and nonstandard hours, than families in high-density urban areas.
- Failure to find care was highest among households in high-density urban communities (13%). In rural communities, fewer than 8 percent of families reported experiencing any indicator of difficulty finding care.

Characteristics of ECE centers and homes by rurality

- Compared to centers in high-density urban areas, a higher percentage of rural centers were sponsored by a public school or received funding from Head Start or public pre-K. Transportation was offered by a greater proportion of rural centers than centers in high-density urban areas, which may be linked to sponsorship by public schools, Head start, or public pre-K funding.
- No significant differences in selected indicators of provider quality (such as turnover rates or providing or referring to ancillary services[a]) were observed among rural, moderate-density, or high-density urban centers or homes.

[a] Ancillary services include health, developmental assessments, therapy (e.g., speech), counseling, or social services.

Characteristics of ECE center-based and home-based workforces by rurality

- Listed home-based teachers and caregivers in rural areas reported taking fewer professional development opportunities than their counterparts in moderate-density and high-density urban areas. A higher percentage of listed home-based teachers and caregivers in rural areas had an ECE certification than their peers in moderate-density urban areas. However, rural listed home-based teachers and caregivers were not significantly different from their peers in high-density urban areas in terms of ECE certification.
- Unlisted paid home-based teachers and caregivers in rural areas reported more years of experience working with children than their peers in high-density urban areas, but not more than those in moderate-density urban areas.

These findings suggest both a limited supply of center-based infant and toddler care and limited demand for this care in rural communities. However, these findings cannot determine whether the supply drives demand or demand reflects supply. In addition, findings suggest a limited number of providers offering nonstandard hours of care. In terms of workforce characteristics, findings suggest that listed home-based teachers and caregivers in rural areas may benefit from additional professional supports such as involvement in quality initiatives and professional organizations. Although current findings are representative of ECE in communities of various population densities at a national level, the findings should be supplemented with research using regional or state data to better understand the supply and demand of rural ECE at a more local level.

Introduction

Much like the 7.8 million families with young children in urban areas, many of the 1.1 million families with young children in rural areas need and use early care and education (ECE) services.[b,c] Families across the United States face challenges to accessing child care, and challenges often vary by population density. Although the definitions of urban, suburban, and rural areas differ across studies, the literature suggests that—compared with suburban and urban areas—rural areas face a myriad of challenges that impact the need for, search for, and use of child care. These challenges include limited employment opportunities, lack of transportation, and less access to higher education.[1]

Additionally, these challenges may contribute to differences in ECE availability and quality, and the types of care that families use. For example, families in rural areas face unique employment constraints that may inhibit their ability to access child care. A synthesis of research on rural maternal employment reported that women living in rural areas are employed disproportionately in low-paying, part-time positions, and are thus may be more likely than urban mothers to require multiple jobs with long or nonstandard hours to support their families.[2] However, on a national scale, there is no clear pattern of care use among families with mothers who work nonstandard hours, suggesting an unclear link between need for care, care use, and maternal employment.[3] Thus, the types of care families need and prefer—such as care available at nonstandard hours (e.g., overnight or on weekends), care available at a particular price, or care provided by a particular type of person—may vary by rurality for a variety of reasons. In the present analysis, we examine systematic differences in care use and family work schedules by rurality in order to address this gap in the field.

Some past research indicates that the types of ECE available and the types of ECE families use differ among urban, suburban, and rural communities. For example, an analysis of the availability of child care across eight states found that 55 percent of children in rural communities live in areas with low

[b] From the authors' analysis of the 2012 NSECE.
[c] The U.S. Census Bureau estimates that approximately 20 percent of the population lives in rural areas, while the National Survey of Early Care and Education, the data source for this report, estimates approximately 10 percent of families due to applying stricter criteria to the designation of rural communities. For more information, see the Method section.

or no child care availability. In urban areas, only about one-third experience low or no availability.[4] In addition, home-based care has been found to be more common in rural areas than in urban areas.[5,6] Prior research also suggests that families in rural areas prefer home-based care or care from someone they know over center-based care.[7,8] An analysis of 2005 National Household Education Survey data found that, while children in rural areas were as likely as children in urban areas to use nonparental care, they were more likely to be cared for by relatives than use center-based care.[9] However, our understanding of current availability and use of ECE is limited, as previous studies rarely used nationally representative data sources, and none used data sources from the past decade.

Little is currently known about differences in provider or workforce characteristics and quality across rural, suburban, and urban communities. A literature review identified only one study reporting on one aspect of quality, teacher-child ratios, finding that ratios were similar across rural and urban areas.[10] Other researchers report that the availability of a trained early childhood workforce and professional supports differs between rural and urban areas, in part because rural areas—particularly those that are under-resourced—face unique challenges of low rates of educational attainment and low college enrollment.[11] In addition, there may be low or unreliable demand for care, and the costs of staffing and ensuring compliance with local, state, and federal regulations may be more burdensome for child care providers in rural areas than in urban areas.[12] There is a clear need to develop a foundational understanding of provider and workforce characteristics and quality across child care settings, both centers and homes, in rural and urban areas.

Purpose

The purpose of this report is to use nationally representative data from the 2012 National Survey of Early Care and Education (NSECE) to provide a descriptive comparison of the types of ECE available in high-density urban, moderate-density urban (suburban), and rural areas. Additionally, this report compares the need for and use of child care among families with young children in both rural and urban areas. This report also sheds light on differences in ECE by rurality on a national scale. High-quality ECE is of great importance for children's development and school readiness.[13] In order to understand unmet needs for child care and workforce support, it is necessary to evaluate the differences in supply and demand for ECE between rural, moderate-density urban, and high-density urban areas. Once these needs are clarified, useful support can be provided for high-quality care that fosters healthy development.

Methodology and Data

Sample

The households described in this report were representative of those with at least one child from birth to age 5. The center-based settings described in this report were representative of those who served at least one child from birth to age 5 who was not yet in kindergarten. The center-based workforce represented center-based teachers and caregivers, including lead and assistant teachers from privately and publicly funded centers. We focused on center-based teachers and caregivers who cared for at least one child from birth to age 5, but not in a kindergarten setting. The home-based settings and workforce described in this report were representative of those who cared for at least one child from birth to age 5. Home-based settings and workforce members could have been listed on a state or federal registry of providers (referred to as 'listed'), or unlisted. Home-based workforce members also could have

Data

The data presented in this report are from the National Survey of Early Care and Education (NSECE), a set of nationally representative surveys of child care settings, the child care workforce, and families with young children from 2012. In this report, we use data from all four of the national surveys: the household, center-based provider, center-based workforce, and home-based provider surveys.

cared exclusively for children they knew (relationship-based) or cared for at least one child with whom they did not previously have a relationship (non-relationship-based). Most listed home-based providers were non-relationship-based (90%), whereas most unlisted providers were relationship-based (78%). Finally, all listed providers were paid. Although unlisted providers included both paid and unpaid providers, due to sampling and data limitations, our sample includes only those who were paid. Weighted sample sizes for each population are shown in Table 1.

Table 1. Population totals

Population	Total
Households with young children from birth to age 5	11,422,170
Center-based settings	129,280
Center-based workforce	999,610
Listed home-based settings and workforce	118,190
Unlisted paid home-based settings and workforce	919,260

Note. Totals are rounded to the nearest 10.
Source. Authors' analysis of four public use datasets from the 2012 NSECE: the household survey public use data, center-based survey public use data, home-based survey public use data, and workforce survey public use data.

Measures

We examined the following key features of ECE available across the four NSECE surveys: households' need for and use of care, households' difficulty finding care, ECE setting characteristics (including setting quality), and ECE workforce characteristics. The key features were compared across three levels of rurality.

Household survey

Need for care

We examined two predictors of need at the household level:

- *The number of families who searched for care in the past 24 months for their young child.* Households were asked this question in regard to a randomly selected child in the household. This variable was analyzed only among households for whom the randomly selected child was up to age 5.
- *Parental work schedules.* This was analyzed among households for whom the randomly selected child was up to age 5. The variables representing the child's parents' work schedule are:
    - Standard hours only: Monday – Friday, 8 a.m. – 6 p.m. shifts
    - Nonstandard hours only: shifts that occurred outside of standard hour shifts on weekdays and anytime on weekends
    - A mix of standard and nonstandard hours

Types of care used

Households reported the types of care they used for each child in their household with the following categories:

- Center-based care
- Non-relationship-based home-based care:[d] Provider did not have previous relationship with the child and care is paid
- Relationship-based home-based care: Provider had previous relationship with the child (e.g., neighbor, friend) and care is paid
- Unpaid home-based care: Provider had previous relationship with the child and care is unpaid
- Parental care only: Child does not use any type of nonparental care

Difficulties finding care

Households reported two indicators of difficulty finding care, which signal issues accessing available care:[e]

- The household searched for and failed to find care for their young child.
- The household searched for and found care for their young child but did not have a choice of provider, as there was only one provider in their area or one provider with availability.

Provider surveys (center-based and home-based)

Setting characteristics

Center-based setting characteristics included:

- Sponsorship by a public school or funding from Head Start or public pre-K[f]
- Hours of operation
- Provision of transportation
- Flexible scheduling and payments, which refer to providers that allow families to have care schedules that vary week to week or programs that permit parents to pay for and use varying numbers of hours of care each week

Center-based providers also reported on several center-level predictors of quality,[14,15] including:

- Annual turnover rates
- Providing paid time off for staff to attend professional development trainings
- Access or referrals to one of five ancillary services for children or families, including health, developmental assessments, therapy (e.g., speech), counseling, or social services
- Participation in quality initiatives, including accreditation, tiered reimbursement, or a quality improvement system

Listed home-based providers reported on a modified set of setting characteristics, including hours of operation, transportation, and flexible scheduling and payments. Listed home-based providers also reported on a smaller set of quality indicators, including access or referrals to one of five ancillary services (e.g., health, social services) and telling parents about their participation in a quality initiative, which could include accreditation or tiered reimbursement.

Unlisted paid home-based providers reported their hours of care, flexible scheduling and payments, and access or referrals to one of five ancillary services (e.g., health, developmental, social services).

[d] Households were not asked if home-based providers were "listed" or "unlisted."
[e] Households only reported on these items if they reported having searched for care in the past 24 months for the randomly selected focal child, and data were only analyzed among those for whom the randomly selected child was up to age 5.
[f] Community-based sponsors may still receive funding from child care subsidy programs such as CCDF or TANF (including voucher/certificates, state contracts).

Many questions were not asked of relationship-based providers, which limits both the listed and unlisted paid home-based sample used in analyses of setting characteristics.[g]

Workforce survey

The workforce survey captures information from members of the workforce sampled from the centers included in the center-based survey. Home-based workforce members who responded to the home-based provider survey also provided information on their individual characteristics as ECE workforce members.

Workforce characteristics

Workforce characteristics included demographic, professional, and psychological characteristics. Characteristics also included predictors of quality, including education level, professional development, years of experience, and motivation for working with children. Survey differences and data limitations alike resulted in fewer workforce characteristics being examined among the home-based workforce, particularly the unlisted paid home-based workforce.[h]

Other measures used in the analyses

Rurality

The rurality variable was derived from the distribution of the ratio of the population living in urban areas to total population in each community in which ECE providers were located and families lived. Community population information was extracted from census tract data from the 2005-2009 American Community Survey. A three-category variable was created by the NSECE study team to characterize the density of rural and urban populations for each family, center-based ECE provider, and listed and unlisted paid home-based ECE provider.[i,j]

- *Rural:* Areas with a low density of urban population (values of .000 to 0.29 of the urban to total distribution)
- *Moderate-density urban:* Areas with a moderate density of urban population (values of 0.30 to 0.85 of the urban to total distribution)
- *High-density urban:* Areas with a high density of urban population (values of 0.85 to 1.00 of the urban to total distribution)

Analyses

The goal of all analyses was to characterize any features that may signal differences in availability, use, need, and quality of ECE services by rurality. We conducted descriptive analyses, including means and proportions of family use of, need for, and difficulties finding care, along with ECE setting and workforce characteristics. We tested for significant differences across rural, moderate-density urban, and high-density urban areas.[k] Significant differences between areas are noted in the text and figures. We incorporated the NSECE's survey weights to have our findings be nationally representative of each population of interest (e.g., households, children, center-based and home-based providers, and the ECE workforce in both centers and homes).

[g] Not all variables were asked of all provider types (i.e., relationship-based providers were not asked questions about their professional backgrounds). Some response categories were collapsed to maximize available data.
[h] Not all variables were asked of all provider types (i.e., relationship-based providers were not asked questions about their professional background). Some response categories were collapsed to maximize available data.
[i] More information available from: National Survey of Early Care and Education Project Team (National Opinion Research Center) (April, 2017). National Survey of Early Care and Education (NSECE), 2012: Codebook for Center-based Public-Use Data File. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
[j] The definition of rural can shift across studies, and the approach used by NSECE, which we use in our study, is only one of several used by the field.
[k] Significant differences were tested with ANOVAs and chi-square tests. Significant differences were interpreted at $p < .05$.

Findings

The landscape of ECE by rurality

As expected due to population density, rural communities had fewer centers, listed home-based providers, and unlisted paid home-based providers than moderate-density and high-density urban areas. However, there were smaller provider: family ratios in rural areas than in high-density urban areas due to the overall lower population of families in rural areas.

Compared to rural areas, high-density urban areas had 2.85 times the number of centers, 3.20 times the number of listed home-based providers, and 6.87 times the number of unlisted paid home-based providers.

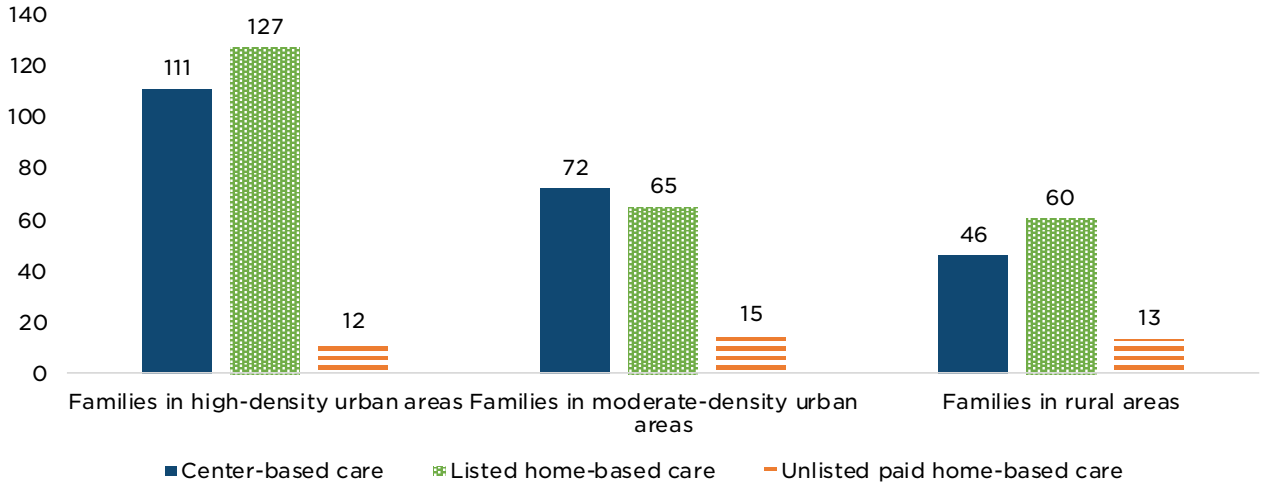
Table 2. Total ECE providers by type and rurality

	High-density urban areas	Moderate-density urban areas	Rural areas
Total of centers	70,640	33,840	24,790
Total of listed home-based providers	61,670	37,340	19,180
Total of unlisted paid home-based providers	666,010	163,090	90,160

Note. Totals are rounded to the nearest 10.
Source. Authors' analysis of the 2012 NSECE center-based survey public use data and the 2012 NSECE home-based provider survey public use data.

As shown in Figure 1, the ratio of families with a child from birth to age 5 to center-based and listed home-based providers was much smaller in rural communities than in high-density urban communities. This indicates greater availability of these care types, relative to the number of families, in rural areas.

Figure 1. Estimated number of families with a child from birth to age 5 per provider by rurality



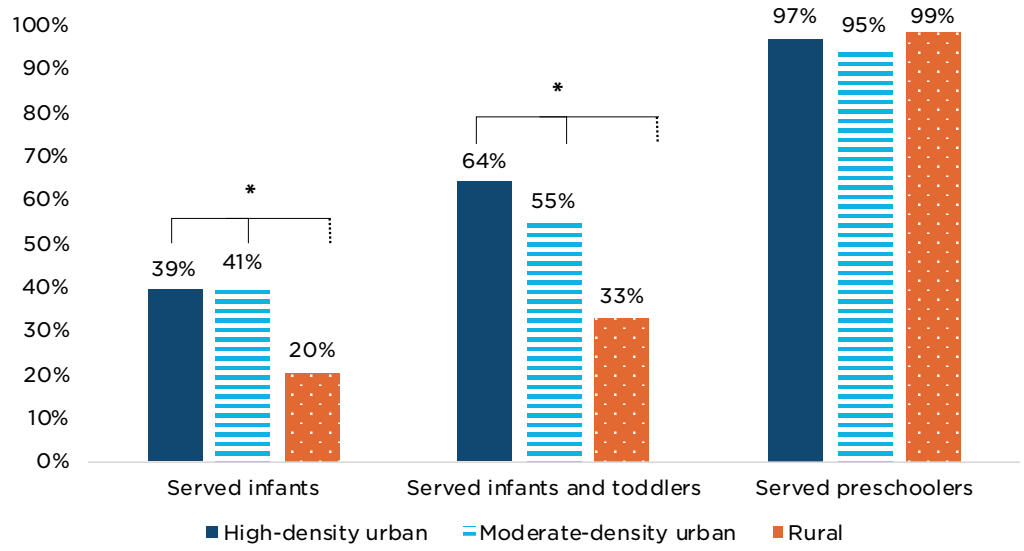
Source. Authors' analysis of the 2012 NSECE center-based survey public use data, the 2012 NSECE home-based provider survey public use data, and the 2012 NSECE household survey public use data.

Proportionally fewer rural centers served infants and toddlers compared to centers in both moderate-density and high-density urban areas. However, the proportion of listed and/or unlisted paid home-based providers serving infants and toddlers did not differ significantly by rurality.

In rural areas, there was 1 center-based provider for every 46 households. In high-density urban areas, there was 1 center-based provider for every 111 households.

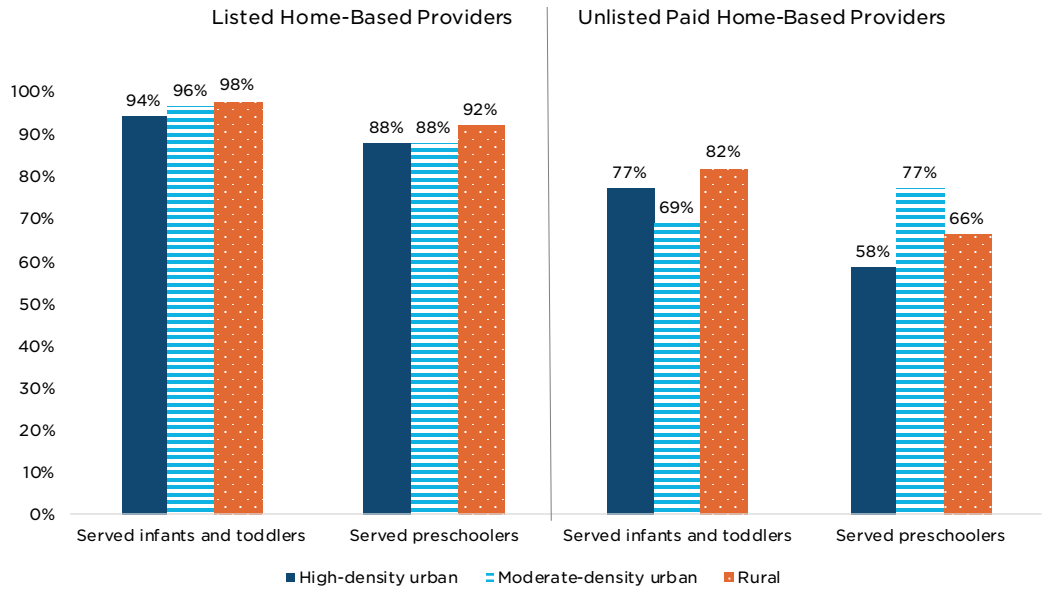
As shown in Figure 2, a smaller percentage of rural centers served infants or at least one child from birth to age 3 than those in moderate-density and high-density urban areas. Figure 3 shows that nearly all listed home-based providers across all rurality levels offered care for infants and toddlers, while approximately 90 percent offered care for preschoolers. Proportionally fewer unlisted paid home-based providers offered care for infants and toddlers, but the proportions did not differ significantly by rurality. Additionally, while the percentages of unlisted paid home-based providers who cared for preschoolers ranged from 58–77 percent, the percentages did not significantly differ by rurality.

Figure 2. The percentage of centers that served each age group by rurality



Source. Authors' analysis of the 2012 NSECE center-based survey public use data.
Note. Asterisks denote significant differences between the dotted-line and solid-line groups. Infants are represented both in the first set of columns (infants) and the second set of columns (infants and toddlers).

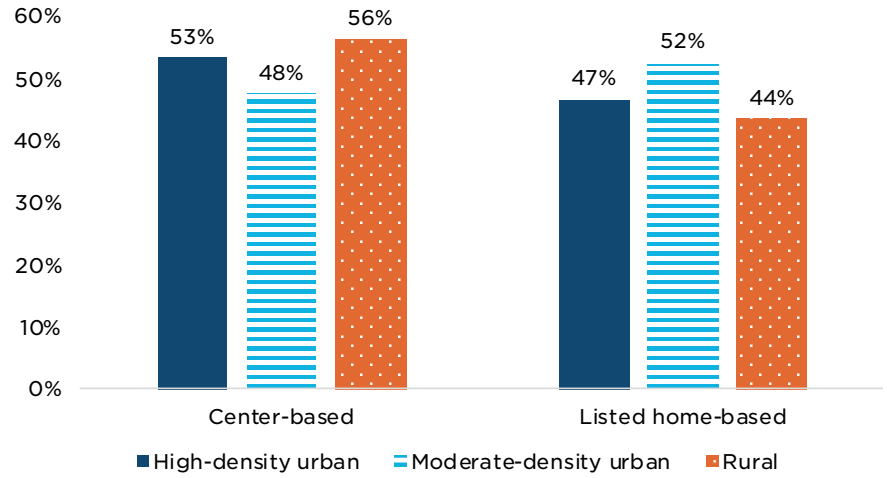
Figure 3. The percentage of home-based providers that serve each age group by rurality



Source. Authors' analysis of the 2012 NSECE home-based provider survey public use data.

We also compared the percentage of care available in centers versus that provided in listed home-based care settings;[l] as shown in Figure 4, we found no significant differences in the proportions of providers that provided care in a center versus a listed home.

Figure 4. The percentage of center-based and listed home-based providers serving children from birth to age 5, by rurality



Source. Authors' analysis of the 2012 NSECE center-based survey public use data and the 2012 NSECE home-based provider survey public use data.

Families' need for and use of care by rurality

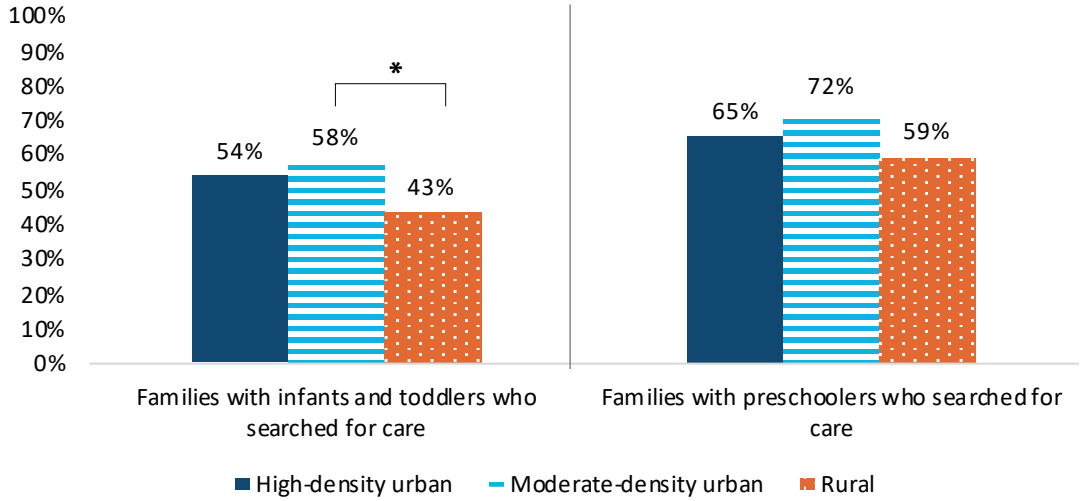
We first examined families' potential need for care by looking at their searches for care. As shown in Figure 5, the percentage of families with infants and toddlers in rural areas who searched for care was less than 50 percent—significantly lower than the percentage of families in moderate-density urban

[l] Given the sampling design of the NSECE, it is possible to combine the totals of center-based and listed home-based providers to comprise the total population of listed providers across the United States. It is not possible to add the total of unlisted providers, given differences in the way listed and unlisted home-based providers were sampled.

areas who searched for care. The proportion of families who searched for care for preschool-aged children did not differ significantly by rurality.

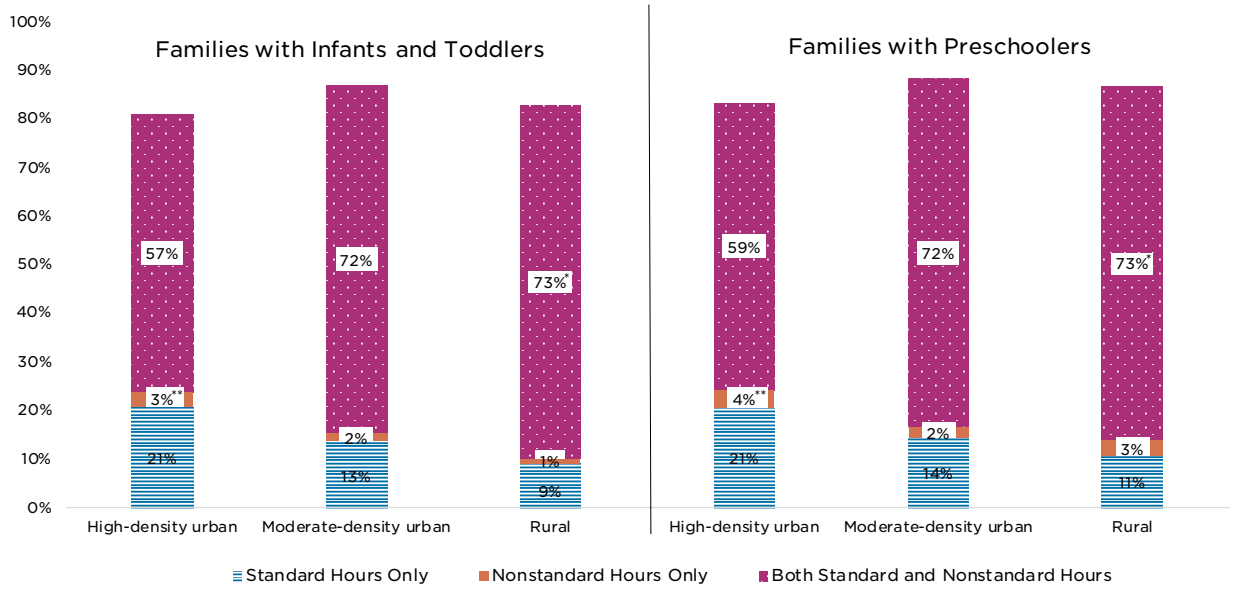
Next, we examined parental work schedule as an indicator of potential need for care. As shown in Figure 6, **the most common work schedule for parents of young children across all rurality levels was a combination of standard and nonstandard work hours, and very few children had parents who worked only nonstandard hours** (less than 4%). A greater proportion of children—both infants and toddlers and preschoolers—in high-density urban areas had parents who worked only standard hours compared to their peers in moderate-density urban areas and rural areas. Additionally, a smaller proportion of children in high-density urban settings had parents who worked both standard and nonstandard hours compared to children in moderate-density urban and rural areas.

Figure 5. Families who searched for nonparental care in the past two years, by child age and rurality



Source. Authors' analysis of the 2012 NSECE household survey public use data.

Figure 6. Parental work schedules by child age and rurality



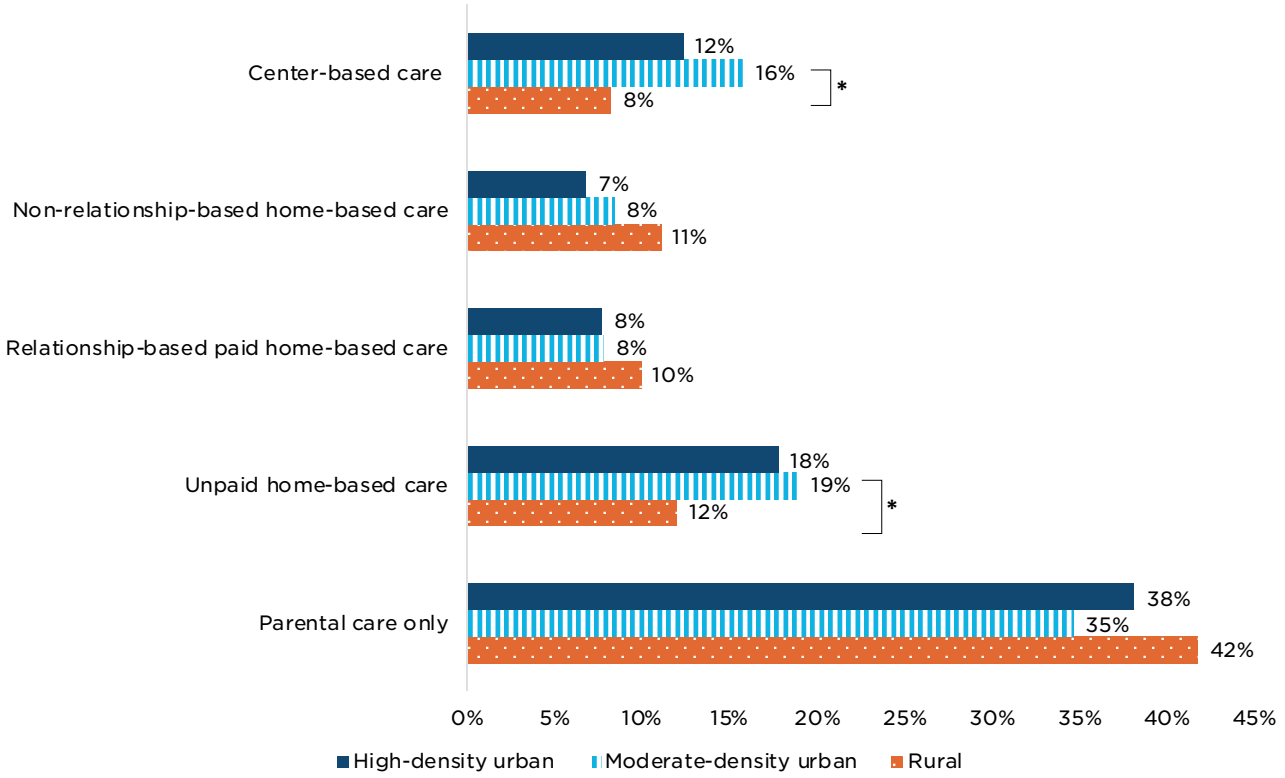
Source. Authors' analysis of the 2012 NSECE household survey public use data, analyzed at the child level.
*a higher proportion of rural families work both standard & nonstandard hours than high density urban
**a higher proportion of high density urban families work standard hours only compared to rural families
***same across infants & toddlers and preschoolers

We examined children's regular use[m] of five types of care, including four types of nonparental care, which were not mutually exclusive; and parental care only, which is an exclusive category.

A smaller percentage of infants and toddlers in rural communities regularly use unpaid home-based care than those in high-density urban communities.

As shown in Figure 7, **a smaller percentage of infants and toddlers in rural communities regularly used center-based care** than those in moderate-density urban communities (8% vs. 16%). Similar percentages of infants and toddlers in rural and high-density urban communities used center-based care. A smaller percentage of infants and toddlers in rural communities used unpaid home-based care than in high-density urban communities (12% vs. 18%). **Similar percentages of infants and toddlers from rural, moderate-density urban, and high-density urban communities regularly used both relationship-based and non-relationship-based listed home-based care.**

Figure 7. Infants' and toddlers' use of nonparental and parental care by rurality



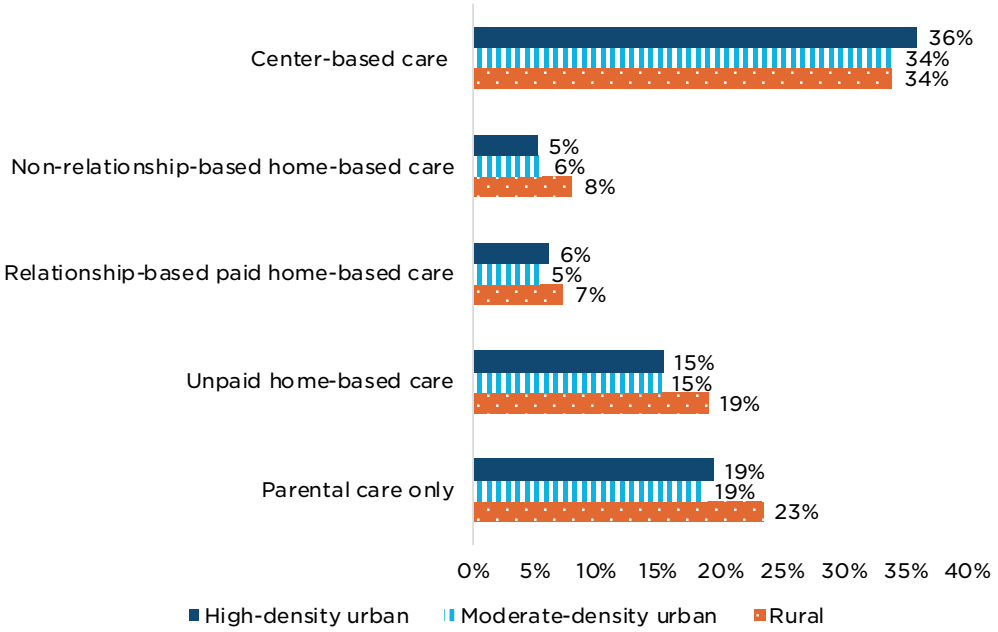
Source. Tables 4.1 & 4.2 from the following publication: National Survey of Early Care and Education Project Team. (2016). Early Care and Education Usage and Households' Out-of-pocket Costs: Tabulations from the National Survey of Early Care and Education (NSECE). OPRE Report #2016-09, Washington DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available from: https://www.acf.hhs.gov/opre/resource/early-care-education-usage-households-out-of-pocket-costs-tabulations-nsece

Note. Asterisks denote significant differences between two groups.

Across rurality, preschoolers did not significantly differ in their regular use of different types of nonparental care and parental care only. Regardless of rurality level, about one in three preschoolers regularly used center-based care (34–36%) and about one in five regularly used parental care only (19–23%). Less than 10 percent of preschoolers regularly used relationship-based or non-relationship-based home-based care, regardless of rurality level. Finally, 15 to 19 percent of preschoolers regularly used unpaid, home-based care (see Figure 8).

[m] Defined as care that families reported using on a regular basis for five or more hours a week for a particular child.

Figure 8. Preschoolers' use of nonparental and parental care by rurality

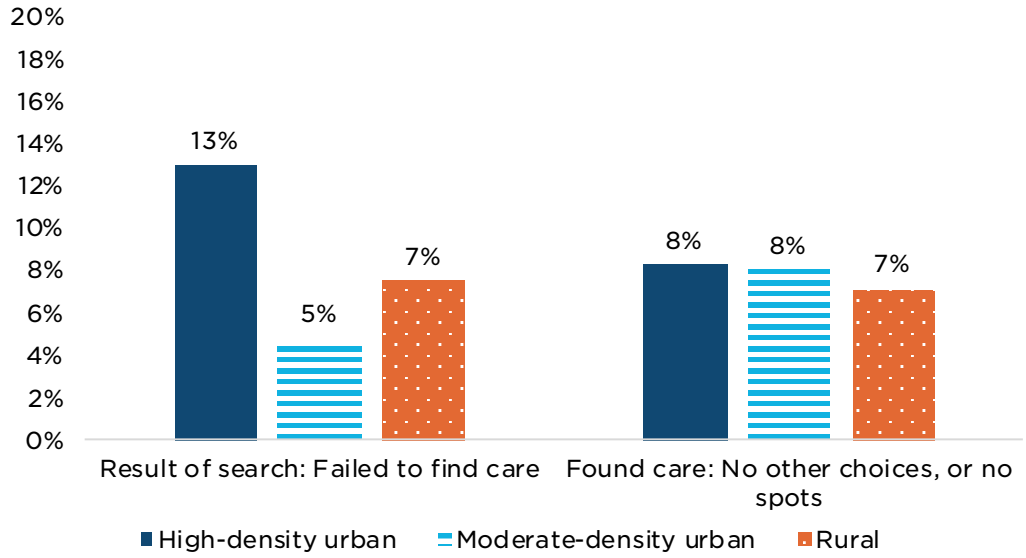


Source. Authors' analysis of the 2012 NSECE household survey public use data, analyzed at the child-level.

Difficulties finding care by rurality

Figure 9 shows that families across rural and urban communities did not significantly differ in their reports of failing to find care or having no/limited choice during care selection. Failure to find care was highest among households in high-density urban communities (13%). **Less than 8 percent of families in rural communities reported experiencing any measure of difficulty finding care.**

Figure 9. Families who reported difficulties finding care, by rurality



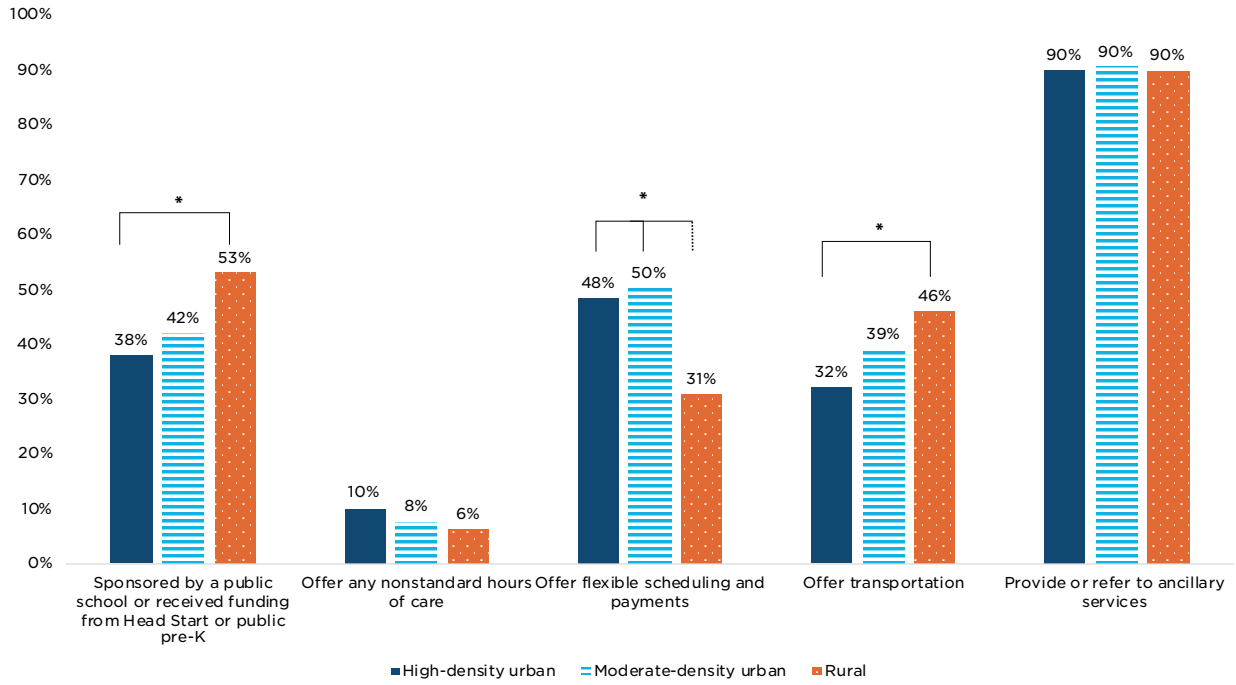
Source. Authors' analysis of the 2012 NSECE household survey public use data.

Characteristics of ECE centers and homes by rurality

As shown in Figure 10, compared with centers in urban areas, a higher percentage in rural areas were sponsored by a public school or received funding from Head Start or public pre-K. A higher percentage of centers in rural areas also offered transportation. In contrast, a higher percentage of centers in urban areas offered flexible scheduling and payments than those in rural areas. Centers did not significantly differ by rurality on other characteristics, such as offering nonstandard hours of care for families or paid time off for teachers and caregivers.

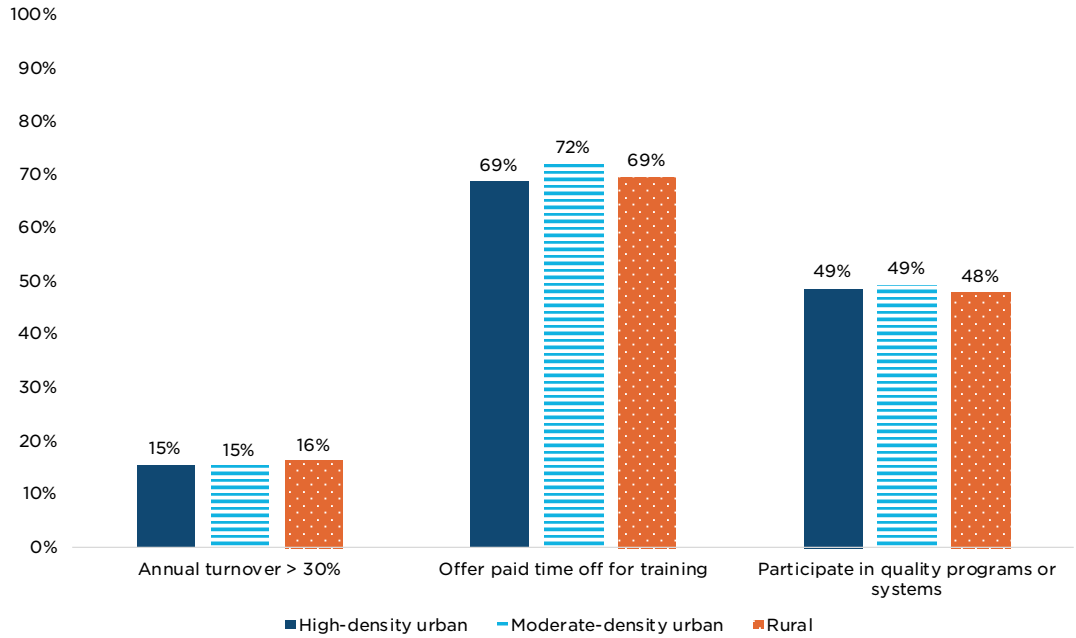
In terms of center-level predictors of quality, most providers reported offering or providing referrals to ancillary services (90%). Very high turnover (i.e., > 30%) was not common among center-based providers in any area (see Figure 11). Additionally, it was equally as common for centers across rurality levels to offer paid time off for professional development, with rates of 69–72 percent, and to participate in quality initiatives (e.g., accreditation, tiered reimbursement, and/or other quality rating systems), with rates of 48–49 percent.

Figure 10. Center-based provider characteristics by rurality



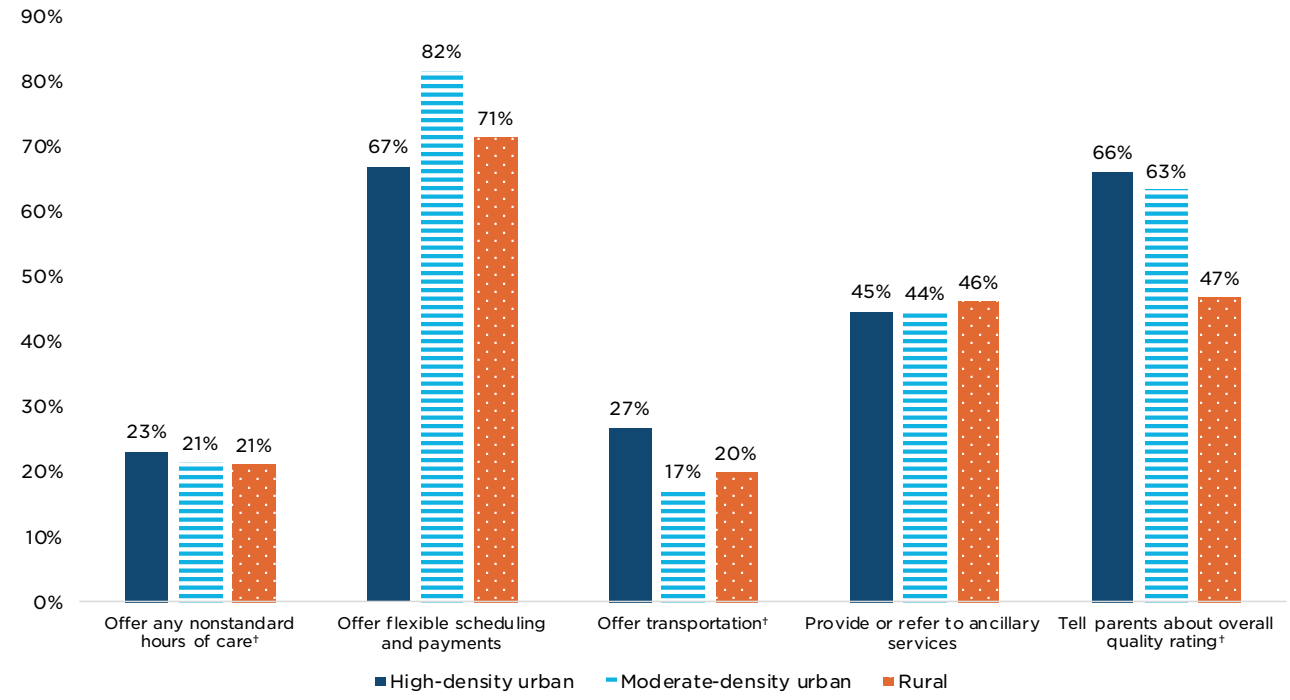
Source. Authors' analysis of the 2012 NSECE center-based survey public use data.
Note. Asterisks denote significant differences between the dotted-line and solid-line groups.

Figure 11. Center-based predictors of quality by rurality



Source. Authors' analysis of the 2012 NSECE center-based survey public use data.

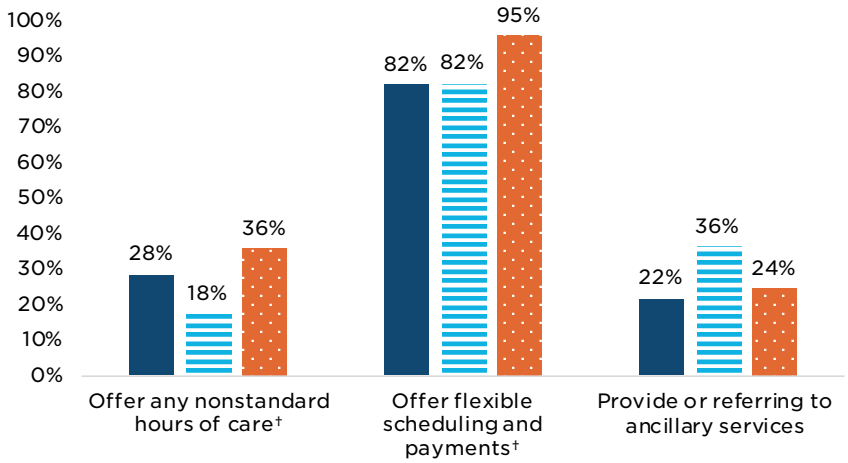
Figure 12. Listed home-based provider characteristics and predictors of quality by rurality



Source. Authors' analysis of the 2012 NSECE center-based survey public use data.
†Denotes questions not asked of relationship-based providers. Listed, relationship-based providers make up 9 percent of both high-density and moderate-density urban home-based providers and 10 percent of rural home-based providers.
^Denotes a predictor of quality variable source. Authors' analysis of the 2012 NSECE home-based provider survey public use data.
Note. Asterisks denote significant differences between the dotted-line and solid-line groups.

Compared with rural areas, a higher proportion of listed home-based providers in both high- and moderate-density urban areas told parents about their participation in a quality initiative (including accreditation and tiered reimbursement). Across rurality levels, listed home-based providers were similar on all other characteristics of care provision (providing evening, overnight, weekend, sick, and nonstandard hours), flexibility, and whether they offered transportation and provided or referred to ancillary services.

Figure 13. Unlisted paid home-based provider characteristics and predictors of quality by rurality



Source. Authors' analysis of the 2012 NSECE home-based provider survey public use data.
†Denotes questions not asked of relationship-based providers.
^Denotes a predictor of quality variable.

The sample of unlisted paid home-based providers permitted only limited comparisons between rural, moderate-density urban, and high-density urban providers.[n] However, as shown in Figure 13, characteristics of unlisted paid home-based providers did not significantly differ by rurality.

Characteristics of ECE center-based and home-based workforces by rurality

Center-based teachers and caregivers did not differ by rurality in professional, personal, or psychological characteristics. However, a higher percentage of center-based teachers and caregivers in high-density urban areas were Hispanic and spoke two or more languages, compared to their peers in rural areas.

When compared to rural areas, high-density urban areas have a higher proportion of teachers and caregivers who are Hispanic. There was also a higher proportion of households with young children who are Hispanic in high-density urban areas.[o] Specifically, subsequent analyses of the data showed that, in high-density urban areas, 23 percent of families had a Hispanic child from birth to age 5, compared to 8 percent in moderate-density urban areas and 6 percent in rural areas.

As shown in Table 3, the center-based workforces across rural and urban communities were similar on other professional, personal, and psychological characteristics.

[n] Over 75 percent of unlisted home-based providers are relationship-based and were not asked many of the questions, or their answers were suppressed, resulting in a smaller sample and larger standard errors. This, in turn, reduced our ability to detect significant differences between groups.
[o] From the authors' analysis of the 2012 NSECE.

Table 3. Center-based teachers' and caregivers' characteristics by rurality

Demographic and professional characteristics	High-density urban	Moderate-density urban	Rural
	Percentage (%)	**Percentage (%)**	**Percentage (%)**
Race/ethnicity			
White	70%	82%	87%
Hispanic	15%*	7%	4%*
Black	22%	16%	12%
Speaks two or more languages	29%*	18%	15%*
Education level			
Less than associate's degree	39%	48%	39%
Bachelor's or graduate degree	43%	37%	41%
ECE certification	54%	52%	58%
Professional development			
Attended workshop	89%	86%	88%
Receives coaching	32%	30%	33%
Member of prof. association	9%	8%	10%
Motivation			
My career	29%	24%	33%
A job while my children are young	3%	7%	4%
To help children and/or parents	20%	19%	14%
Money	1%	1%	1%
	Average (*M*)	**Average (*M*)**	**Average (*M*)**
Age	40 years old	41 years old	42 years old
Income	$50,661	$46,602	$45,594
Years of experience with children	9.2	9.3	9.3
Work-related stressors (scale: 1 – 3)	1.5	1.5	1.5
Psychological distress (scale: 0 - 24)	2.6	2.5	2.7

Note. * Denotes significant differences between values in the same row.

Compared to their rural counterparts, listed home-based teachers and caregivers in high-density urban areas had more years of experience working with children, were more often members of a professional organization, and more often reported that helping children learn was their reason for choosing to work in ECE. On the other hand, a higher percentage of rural listed home-based teachers and caregivers had an ECE certification than their peers in moderate-density urban areas.

Table 4. Listed home-based teachers' and caregivers' characteristics by rurality

Demographic and professional characteristics	High-density urban	Moderate-density urban	Rural
	Percentage (%)	**Percentage (%)**	**Percentage (%)**
Race/ethnicity			
White	56%	89%	71%
Hispanic	21%	7%	19%
Black	26%*	5%	9%*
Education level†			
Less than associate's degree†	80%	83%	82%
Bachelor's or graduate degree†	8%	7%	8%
ECE certification†	50%	29%*	51%*
Professional development			
Attended workshop	75%	80%	77%
Receives coaching	75%	80%	77%
Member of prof. association†	32%*	24%	12%*
Motivation for working with children			
My career	51%	52%	50%
A job while my children are young	19%	21%	30%
To help children and/or parents	21%	16%	15%
Money	8%	11%	5%
Responsibility when caring for children			
Promote their development	18%	24%	15%
Help them learn/do well in school	4%*	2%	0%*
Safety/basic needs	57%	53%	73%
Work another job for pay	12%	15%	18%
	Average (M)	***Average (M)***	***Average (M)***
Age	48 years old	46 years old	47 years old
Income	$50,351	$53,434	$46,444
Years of experience with children	5.0 years*	3.8 years	3.5 years*
Psychological distress (scale: 0 - 24)	4.5	4.8	5.3

Note. Not all variables were asked of all provider types. Any cell with fewer than 10 cases was suppressed.
* Denotes significant differences between values in the same row.
†Denotes questions not asked of relationship-based home-based providers.

As shown in Table 4, a higher percentage of listed home-based teachers and caregivers in high-density urban communities identified as Black compared with teachers and caregivers in rural communities (26% vs. 9%).

Similar percentages of listed home-based teachers and caregivers in rural and high-density urban communities held state ECE certifications; these percentages are higher than those of listed home-based teachers and caregivers in moderate-density urban communities. Listed home-based teachers and caregivers across rurality levels were similar in their levels of education (more than 80% had less than an associate's degree), use of professional development and coaching (more than 75%), and motivation for choosing ECE as their career (50%). However, a smaller percentage of rural listed home-based teachers and caregivers belong to a professional organization than those in high-density urban communities (12% vs. 32%). Across rurality levels, about half or more of all listed home-based teachers and caregivers reported that their responsibility in caring for children was attending to basic needs and safety (53% to 73%). Proportionally more teachers and caregivers in rural areas reported a responsibility for basic needs and safety than those from high-density urban communities (73% vs. 57%). Across rurality levels, less than 5 percent of listed home-based teachers and caregivers reported that their responsibility in caring for children was to help them learn and do well in school; fewer teachers and caregivers in rural areas reported this than among those from high-density urban communities (<1% vs. 4%).

Listed home-based teachers and caregivers in rural areas reported fewer years of experience, and a smaller percentage were members of a professional association compared with their counterparts in high density urban areas.

Across all communities, the majority of unlisted paid home-based teachers and caregivers had an education level lower than an associate's degree. Higher proportions of unlisted paid home-based teachers and caregivers in high-density urban areas were Hispanic compared to their rural counterparts, whereas rural unlisted paid home-based teachers and caregivers had, on average, more years of working with children than their high-density urban counterparts.

As shown in Table 5, a smaller percentage of rural unlisted paid home-based teachers and caregivers were Hispanic than those in high-density urban areas (4% vs. 30%). Fewer rural unlisted paid home-based teachers and caregivers have bachelor's degrees or higher than those in high-density urban communities.

Unlisted paid home-based teachers and caregivers in rural areas reported more years of experience than their counterparts in high-density urban areas.

More than 60 percent of all unlisted paid home-based teachers and caregivers reported that their main responsibility in caring for children was to attend to their safety and basic needs (61% to 75%). As with listed home-based workforce members, fewer rural unlisted paid home-based teachers and caregivers reported that their main responsibility in caring for children was to help them do well in school compared to those in high-density urban communities (< 1% vs. 4%).

Rural unlisted paid home-based teachers and caregivers reported nearly five more years of experience working with children than their counterparts in high-density urban communities.

Table 5. Unlisted paid home-based teachers' and caregivers' characteristics by rurality

Demographic and professional characteristics	High-density urban	Moderate-density urban	Rural
	Percentage (%)	Percentage (%)	Percentage (%)
Race/ethnicity			
White	61%	79%	86%
Hispanic	30%*	7%	4%*
Black	23%	21%	14%
Education level†			
Less than associate's degree†	84%	77%	95%

Demographic and professional characteristics	High-density urban	Moderate-density urban	Rural
Bachelor's or graduate degree†	5%	4%	1%
Professional development			
Attended workshop	21%	33%	15%
Receives coaching	10%	25%	11%
Main responsibility when caring for children			
Promote their development	13%	5%	5%
Help them learn/do well in school	4%*	1%	< 1%*
Safety/basic needs	61%	70%	75%
Work another job for pay	26%	39%	25%
	Average (M)	***Average (M)***	***Average (M)***
Age	43 years old	44 years old	43 years old
Income	$39,753	$38,703	$28,034
Years of experience with children	3.8 years*	7.1 years	8.5 years*
Psychological distress (scale: 0 - 24)	4.8	5.6	3.6

Note. Not all variables were asked of all provider types. Any cell with fewer than 10 cases was suppressed.
*Denotes significant differences between values in the same row.
†Denotes questions not asked of relationship-based home-based providers.

Discussion of Findings

This report provides a descriptive comparison of ECE providers across rural, moderate-density urban, and high-density urban areas. Specifically, we examined the availability and use of care, the need for ECE among families of young children, and the characteristics of ECE settings and the ECE workforce across areas with different levels of rurality. By using a nationally representative data source, our findings describe the state of ECE across rural and urban communities in the United States. We found few significant differences between rural, moderate-density urban, and high-density urban areas, but findings suggest that the supply of and demand for care does vary by rurality.

Landscape of ECE by rurality

Based on past research,[16] we might expect that center-based care would be less available to families in rural areas than in urban areas, and that home-based care would be more available in rural areas than in urban areas. Analyses of the availability of different types of care (center-based, listed home-based, unlisted paid home-based) across the three levels of rurality found that, in terms of absolute numbers, more providers of every provider type are available in high-density urban areas than in rural areas. Compared to rural areas, high-density urban areas have nearly three times the number of centers and listed home-based providers, and nearly seven times the number of unlisted paid home-based providers. This is not surprising given the differences in population size between rural and high-density urban areas. However, in terms of the ratio of providers to families with a child from birth to age 5, there are more providers of each type available per family in rural areas than in high-density urban areas. For example, there was one center-based provider for every 46 households with young children in rural areas, compared to one per 111 in high-density urban areas. We also found no difference in the proportion of available providers that provided care in a center versus in a listed home by rurality.

Our findings may differ from other analyses of availability of care (or child care deserts) in rural areas because of our methodological approach. In other work on child care availability, we compare between ECE providers and households (or young children in households) within the same geographic area, such as within the same zip code, census tract, or school district.[17] Our analyses examine the national population of ECE providers and national population of households by rurality, which may mask local variation in availability.

In sum, national-level findings indicate that while the number of ECE providers mirrors population density differences by rurality, there are not proportionally fewer center-based providers in rural areas than in urban areas. There is also not proportionally more center-based care than listed home-based care across any level of rurality. However, our findings suggest that, compared to high-density urban centers, there were proportionally fewer centers that served infants and toddlers in rural areas; this matches the proportion of families with infants and toddlers who reported using center-based care in each setting. However, it is unknown whether lower supply in rural areas drives lower demand, or vice versa.

Need for, use of, and difficulties finding care by rurality

Previous research indicates lower availability of center-based care in rural areas—along with a higher preference for home-based care and higher rates of nonstandard work hours among mothers—as compared with high-density urban areas. As such, we anticipated that a higher percentage of families in rural areas would use home-based care than center-based care, and that more providers in rural areas would offer care during nonstandard hours. In contrast to previous research, the current set of analyses of the NSECE 2012 suggest that families in rural areas were not more likely to regularly use home-based care over center-based care. We found that a larger proportion of children in moderate-density urban areas used center-based care compared to children in rural areas, but there were no differences in the proportions using any type of listed home-based care. We also found no significant differences among care use among preschoolers by rurality.

Using searches for care as an indicator of potential need for care, we found that a smaller percentage of families with infants and toddlers in rural areas searched for care in the past 24 months compared to their counterparts in moderate-density urban areas. Less than 50 percent of families with infants and toddlers in rural areas searched for care in the past 24 months (approximately half of that 50% were still using a nonparental child care arrangement). However, similar proportions of families with preschoolers from rural and urban areas had searched for care in the past 24 months. Collectively, there were few differences in search activities by rurality.

Using parental work schedules as an indicator of need, our findings partially align with previous research suggesting that a higher proportion of families in rural areas work nonstandard hours compared to families in high-density urban areas. We found that a smaller proportion of children (including infants and toddlers and preschoolers) in rural areas had parents who worked only standard hours compared to children in high-density urban areas. In addition, three quarters of both infants and toddlers and preschoolers in rural areas had parents who worked a combination of standard and nonstandard hours, compared to 57 percent of infants and 59 percent of preschoolers in high-density urban areas. Despite the prevalence of nonstandard work hours among parents of young children in both rural and urban areas, it was not common for centers in any area to offer nonstandard hours of care, with rates only as high as 10 percent in high-density urban areas. Although it was more common for listed and unlisted paid home-based providers to offer care during nonstandard hours, there were no differences in the proportion of listed or unlisted paid home-based providers who offered nonstandard hours of care by rurality. We anticipated that families in rural areas would report difficulties finding care, including reduced choice of care providers, because previous research had suggested reduced availability of care in rural areas. Despite differences in family work schedules and provider availability across rurality, our findings suggested that families in rural areas were no more likely than families in urban areas to report difficulties finding care.

In sum, we did not find evidence that, on a national scale, families in rural areas were more likely to use listed home-based care over center-based care. In addition, despite differences in families' work schedules by rurality, there were not differences in the proportions of providers who offered nonstandard hours of care by rurality. However, the data clearly indicate that many families across levels of rurality work at least some nonstandard hours in a typical week, suggesting that they may benefit from additional access to child care available at nonstandard hours.

Characteristics of settings and providers across rurality

Past research suggests fewer available supports for the ECE workforce in rural areas. Thus, we expected to find differences in indicators of quality, such as provision of professional development, between rural and urban providers. In addition to quality indicators, we also examined other characteristics of providers and the workforce, including hours of operation, provision of transportation, and workforce characteristics such as educational attainment by rurality.

Compared with urban areas, a higher percentage of centers in rural areas offered transportation and were either sponsored by a public school or received funding from Head Start or public pre-K. Over 50 percent of center-based care in rural areas was sponsored by a public school or, if not sponsored by a public school, received funding from Head Start or public pre-K. In high-density and moderate-density urban areas, 38 and 42 percent received similar funding, respectively. The differences between rural and urban centers in terms of flexible scheduling and payments, ages served, and the provision of transportation could all relate to the fact that more centers in rural areas were sponsored by a public school or received funding from Head Start or public pre-K.

Contrary to our hypotheses, we did not find any differences in identified predictors of center-based quality by rurality; providers did not differ in turnover rates, compensation for professional development, or participation in quality initiatives. The high percentage of centers in rural areas sponsored by schools or receiving Head Start or public pre-K funding may contribute to this comparability across rural and urban areas.

We found only one difference between characteristics of the ECE center-based workforce in rural areas compared to more densely populated urban areas: a higher proportion of center-based teachers and caregivers in high-density urban areas that were Hispanic compared to rural areas. This finding was expected due to differences in population density. There were no differences in educational attainment between center-based teachers and caregivers in rural versus urban areas, nor were there differences in participation in professional development opportunities or motivations for working with children. The high percentage of centers in rural areas that were school-sponsored or that received funding from Head Start or public pre-K may have contributed to the similarities in workforce professional characteristics.

Listed home-based providers in rural areas differed from those in high-density urban areas in only one way: Fewer than half of rural listed home-based providers told parents about their participation in quality initiatives, which could include accreditation or tiered reimbursement (16% less than listed home-based providers in high-density urban areas). This finding could signal that fewer rural listed home-based providers participate in quality initiatives, or simply that providers do not communicate about their participation in quality initiatives. Considering that 1 in 10 infants and toddlers and 1 in 15 preschool-aged children in rural areas use listed home-based care, it is important that listed home-based providers are connected to programs that can improve their quality.

Our findings also suggested the need to support the professional development of the rural listed home-based workforce. Compared to their urban counterparts, a smaller percentage of listed home-based teachers and caregivers in rural areas belong to a professional association. Additionally, nearly three quarters cite their primary responsibility in caring for children as caring for children's safety and basic needs (compared to only 57%of teachers and caregivers in high-density urban areas). Further, listed home-based workforce members in rural areas, on average, have 1.5 fewer years of experience

working with children than their urban peers. Given differences in professional orientation and experience, membership in a professional association, home-based child care association, or a quality initiative may be an important source of professional support for teachers and caregivers—particularly those in rural home-based settings.

Due to the fact that relationship-based providers and workforce members were asked fewer questions about the quality features of their care and about their professional qualifications, our understanding of unlisted paid home-based providers was limited. The majority of unlisted paid home-based providers were relationship-based only, meaning they served only children whom they previously knew. Among the non-relationship-based unlisted workforce, the rural workforce differed from the high-density urban workforce with lower levels of education; rural unlisted non-relationship-based workforce members were also less likely to report that their responsibility in caring for children was to prepare them for school. Although we are cautious to interpret findings for this group of ECE teachers and caregivers, our findings suggest that unlisted ECE teachers and caregivers could benefit from connections to the formal ECE system. Furthermore, due to limitations in the available data, our analyses did not include unlisted unpaid providers. While less is known about the professional characteristics of unpaid unlisted providers—typically family, friends, and neighbors—our analyses did detect differences in families' use of this care type by rurality. Proportionally fewer families with infants and toddlers in rural areas used unpaid home-based care compared to their counterparts in moderate-density or high-density urban areas.

In sum, we found no differences in selected predictors of quality among providers from rural versus moderate-density or high-density urban areas. Differences between rural and urban centers seemed connected to differences in funding sources, with rural areas having a higher proportion of centers that were school sponsored or that received Head Start or public pre-K funding, relative to high-density urban areas. The rural listed home-based workforce exhibited fewer characteristics related to professionalization compared to the high-density urban listed home-based workforce, which suggests that the ECE workforce in rural areas may benefit from additional professional supports such as involvement in quality initiatives and professional organizations.

Study Limitations and Future Directions

These findings provide the first national portrait of the availability, use, and characteristics of early care and education center- and home-based programs, as well as the ECE workforce in rural areas. They highlight differences among the need for, use of, and characteristics of ECE across rural and urban areas. Our findings signaled few national differences in the availability and use of care by rurality, or in the setting and workforce characteristics of ECE providers. Collectively, our findings suggest that center-based care in rural areas differs from that in moderate-density and high-density urban areas, such that proportionally more rural care is sponsored by public funding and offers transportation, while proportionately less care serves infants and toddlers. Sponsorship and funding may be the key contributor to all center-based differences by rurality, given that school-sponsored programs and many programs receiving Head Start and/or public pre-K funding are typically free, offer access to transportation services, and serve more preschool-aged children. However, additional research with different data sources, including state and regional data sources, is warranted for understanding the specific local landscape of centers in rural areas.

In addition, future research is needed to uncover the relationship between the supply and demand for infant and toddler care in rural communities; our findings suggested that, compared to moderate- and high-density urban areas, proportionally fewer families in rural areas used center-based care, and proportionally fewer centers offered care for infants and toddlers. Further, our analyses investigated only two indicators of potential need for care; several other family and household characteristics may indicate need for ECE. To date, there is no clear definition or framework for identifying a household's need for care, which remains a critical gap in child care access research.

Our findings also suggest that, nationally, the home-based workforce in rural areas could benefit from additional professional supports. The data did not provide a clear portrait of participation in quality rating and improvement systems or other quality initiatives. This is an area worthy of further investigation, including participation rates in and perceptions of these systems.

The findings presented here represent a national portrait, and do not address variation in ECE or families within or across rural areas; that is, not all rural areas face the same challenges or share the same strengths, even those within the same states or regions. While our findings can suggest national trends, it is important to continue to probe the unique circumstances and needs of families and ECE providers in rural areas using regional, state, and/or local data.

A limitation of the analyses presented in this report is their inability to link characteristics of nearby child care to families' need for care due to employment or family structure. Research studies that use state- or county-level data are well-positioned to address these types of supply and demand questions. We acknowledge that, while it is possible to use the NSECE to link household information to the characteristics of care in their area, this approach has sample size limitations when examining households in rural areas. For this reason, the analyses presented in this report maximize the utility of data on families and ECE in rural areas in the NSECE.

Finally, 'rural' and 'rurality' can be defined in a variety of ways. Findings should be interpreted in light of differences between how rural areas are classified in the NSECE versus other data sources. Specifically, the NSECE uses a lower threshold for determining rural areas, rendering the estimates of families in rural areas at around 12 percent (versus 18–20% for other sources or definitions).[18] Future studies should explicitly explain choices for their definitions and consider the needs of unique children and families in rural areas when defining this context.

Future Directions for Research

To more fully understand the experiences of families, ECE settings, and the ECE workforce in rural areas, it is important to conduct more local (i.e., regional or state-specific) research on rural ECE. Specifically, we highlight the following important future directions for research in this area:

- Consider within-state variability in the experience of families and ECE settings and programs within and across rural areas.
- Consider the policy landscape when comparing across rural areas, whether within or across states.
- Explore in more depth the variability in quality of ECE settings and supports for the ECE workforce, both within and across rural communities.
- Determine rural ECE programs' involvement in and perceptions of quality rating programs and systems.
- Continue to probe the unique needs of families in rural areas, including the care they prefer and the types of care they need (e.g., nonstandard hours), both within and across rural communities.
- Continue to map the interplay of supply and demand within urban areas, to determine what levels of availability constitute sufficient supply in areas with high population densities.
- Consider differences in how rurality is operationalized, and how this may reflect the experiences and needs of families and ECE providers in non-metropolitan areas.

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