The National Workforce Registry Alliance's 2019 Workforce Dataset: Early Childhood and School-Age Workforce Characteristics

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Acknowledgements

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Executive Summary

The 2019 National Workforce Registry Alliance Dataset consists of data from 14 registries: Arizona, Connecticut, Miami-Dade (Florida), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, West Virginia, and Wisconsin. These registries followed the Partnership Eligibility Review (PER) guidelines for data submission. The dataset represents active registry participants as of January 1, 2017, through March 1, 2019, and includes individual records from 398,986 professionals (337,551 of whom were currently employed) working across 63,306 programs/facilities. Of the 14 registries, participation is mandatory for most of the workforce for Illinois, Nevada, Ohio, Oklahoma, West Virginia, and Wisconsin.

Featured Analysis: Infant-Toddler Participant Characteristics

- Participants that worked with infant-toddlers only composed nearly one-third of registry members (30%). Almost all infant-toddler professionals worked in centers (95%).
- Infant-toddler professionals are busy. They worked more hours per week (average = 35.8) than those serving preschoolers (33.9) and school-agers (28.3) but less than those working with multiple age groups (36.5). They also worked more months per year than those serving other age groups (average = 11.5).
- Infant-toddler center lead teachers tended to be younger and have less experience than those serving preschoolers.
- Only about a quarter (26%) of infant-toddler center lead teachers had a bachelor's degree, which is less than half the figure for center lead teachers working with preschoolers (54%) and less than those working with school-agers (39%) and multiple age groups (33%).
- Infant-toddler center lead teachers earned less than those who work with preschoolers across all education categories. The hourly wage difference between the two groups was most pronounced for center lead teachers with bachelor's degrees.
- Infant-toddler center lead teachers were less likely to hold an early childhood education-specific degree compared to their peers serving preschoolers (14% vs. 30%).
- Infant-toddler participants reported more annual training hours (median = 12) than those working with preschoolers and school-agers (median = 9).

Featured Analysis: Changes in Employment Status, Education, and Role between the 2017 and 2019 Datasets

- Nine registries participated in both the 2017 and 2019 dataset draws and provided data that could be matched: Connecticut, Miami-Dade County (Florida), Illinois, Maine, Montana, New York, Oklahoma, Wisconsin, and West Virginia. The matched dataset contained 95,163 records.
- Of the nine registries with matched data, three were designated "mandatory": Illinois, Oklahoma, and West Virginia. The other six—Connecticut, Miami-Dade County (Florida), Maine,

Montana, New York, and Wisconsin—were designated as "non-mandatory" (although they may be mandatory for a portion of the workforce).

- Although participation in Wisconsin's registry is mandatory, because renewals are not required, and a large proportion of participants do not regularly update their information, it was considered non-mandatory for analytic purposes.
- It should be noted that Illinois' registry accounts for nearly three-quarters of the participants who were retained across both datasets for mandatory registries, which means that the subsequent results reported for mandatory registries heavily reflect the state of affairs within Illinois.
- The overall retention rate between 2017 and 2019 was 55%. For mandatory registries, it was 66%; for non-mandatory registries, the retention rate was 44%.
- Most participants (94%) were employed across both datasets. However, 4% were employed in 2017 but unemployed in 2019, 1% were unemployed in 2017 but employed in 2019, 1% were unemployed in both datasets, and 0.1% were presumed retired.
- Mandatory registries showed a higher percentage of participants with increased education attainment across all roles compared to non-mandatory registries.
- For mandatory registries, 13% of center administrators, 10% of center lead teachers, 6% of center assistant teachers, and 10% of family child care (FCC) owners reported a higher level of education in 2019 than 2017.
- For non-mandatory registries, 5% of center administrators, 6% of center lead teachers, 5% of center assistant teachers, and 3% of family child care (FCC) owners reported a higher level of education in 2019 than 2017.
- Center lead teachers showed different patterns of increased education attainment depending on registry type.
- Center lead teachers in mandatory registries were far more likely to move from a high school diploma to a bachelor's degree than those in non-mandatory registries (38% vs. 16%).
- On the other hand, center leads in non-mandatory registries were more likely to move from a high school diploma to an associate's degree than those in mandatory registries (34% vs. 23%).
- Although the percentages of center leads moving from associate's to bachelor's degrees were similar (17% for mandatory, 21% for non-mandatory), non-mandatory participants were more likely to report moving from a bachelor's to a master's degree than those in mandatory registries (16% vs. 6%).
- The majority of participants reported the same role between the two datasets. Family child care providers were most likely to remain in the same role (94%), followed by center lead teachers (88%), and center administrators (86%).
- Between the 2017 and 2019 datasets, across all registries, 4% of center lead teachers became center assistant teachers, whereas 5% became center administrators. For center assistant teachers, the most likely change was to center lead teacher (21%).
- Looking across mandatory and non-mandatory registries, center-based positions and FCC owners were likely to remain in their same positions. However, other program staff were more

likely in mandatory registries to move to center-based positions than other program staff in non-mandatory registries.

Program Characteristics

- Slightly more than half of the employing programs (56%) were family child care (FCC) homes, and 41% were centers. Nearly all programs were regulated.
- Among registries that collect QRIS information, only one-third (33%) of programs were rated. Licensed FCC were most likely to be rated (51%), followed by licensed centers (48%).

Participant Characteristics

Demographics

- Two-thirds of center-based administrators and lead teachers were White (66%), compared to 48% of family child care owners and 33% of FCC assistant teachers. FCC assistant teachers showed the most diversity, with 35% identifying as Black and 27% as Hispanic/Latinx.
- Median years in the field differed significantly based on age group served. Those serving preschoolers had the highest median (4.15 years), followed by those serving multiple age groups (3.84 years), those serving infant/toddlers (2.67 years), and those working with school-agers (2.50 years).

Education Level

- For center-based participants, educational attainment was linked to role, with center administrators more likely to have a bachelor's degree (57%) compared to lead (40%) and assistant teachers (17%).
- Only 20% of FCC owners had a bachelor's degree.
- "Some College" was the highest level of education for a surprisingly large number of professionals across roles: 11% of center-based administrators, 17% of center-based lead teachers, 23% of center-based assistant teachers, and 24% of FCC owners.
- Many professionals with "Some College" as their highest education level have accrued at least 30 college credits: 59% of center administrators, 56% of center lead teachers, 58% of center assistant teachers, and 48% of FCC owners.

Early Childhood-Specific Education and Credentials

- Overall, relatively few professionals, regardless of role, had educational qualifications that were related specifically to early childhood education/development (ECE). Although over half of center-based administrators (57%) had at least a bachelor's degree, only 17% had an ECE bachelor's degree or higher. The situation for lead teachers was similar; 40% had at least a bachelor's degree but only 9% reported an ECE bachelor's or higher.
- The attainment of ECE degrees for assistant teachers and FCC professionals was even lower. Among center-based assistant teachers, 17% had a bachelor's or higher, but only 1% obtained at

least an ECE bachelor's degree. For FCC providers, the statistics were similar: 20% had at least a bachelor's degree but only 2% had at least an ECE bachelor's degree or higher.

- About 3% of registry participants across roles have some type of Child Development Associate (CDA) credential. The preschool CDA was the most widely held (46%), followed by the infant-toddler (38%), and the FCC home (11%).

Professional Development: Training Hours

- FCC lead teachers had the highest median number of training hours in 2017 (18.00), followed by center administrators and FCC owners (12.00). Center lead teachers, FCC assistant teachers, and FCC other role reported 10.00 median hours, followed by other program administrators (8.63), center assistant teachers (8.00), and center other role (7.00).
- Staff who work infant-toddlers and multiple age groups across all roles reported more training hours (median = 12 hours) than those serving preschoolers and school-agers (median = 9 hours).
- Community-based training accounted for 93% of training hours, whereas 7% were from college coursework converted to clock hours.
- The Alliance Core Knowledge Area that accounted for the most training hours was Health, Safety, and Nutrition, followed by Teaching and Learning. The Core Knowledge Area that was least addressed was Administration and Management.

Wages

- For center-based staff the median hourly wages were $16.25 for center administrators, $12.50 for center lead teachers, and $11.00 for center assistant teachers.
- In general, participants with higher levels of education reported higher wages.
- Median hourly wage was related to age group served. Center teachers working with preschoolers exclusively tended to make more than those working with infant/toddlers and school-agers exclusively. Center teachers working with multiple age groups reported the lowest median hourly wage.

How do the Alliance 2019 educational attainment data compare to the National Survey of Early Care and Education (2013) data?

- The educational attainment findings from the 2017 Alliance dataset, as well as past datasets, compares favorably with the nationally representative findings from the National Survey of Early Care and Education (NSECE, 2013).
- In the NSECE study, 53% of center-based teachers had a formal degree compared to 59% in the 2017 Alliance dataset.
- In the NSECE study, 19% of infant-toddler center teachers and 45% of preschool center teachers had a bachelor's degree, compared to 26% and 54% in the 2019 Alliance dataset.

Recommendations for Registries

- Become a Partnership Eligibility Review (PER) registry so you can share your data to help inform policy at state and national levels.
- Get to know your registry data so you can inform state and local discussions about workforce initiatives and allocation of resources.
- Track participants' education, qualifications, and wages over time.
- Support efforts in your geography to require participation in registry systems for licensed settings and those receiving subsidy.
- Ensure that registries are part of the early childhood governance structures in your geography.

Recommendations for the National Workforce Registry Alliance

- Continue to support registries in their ability to gather high quality workforce data and use such data for policy purposes.
- Modify PER protocols as necessary to enhance the quality of data for aggregation and policy purposes.
- Strengthen collaborations with national partners so that registries continue to be an important part of national discussions about early childhood and school-age workforce development.

Introduction

This report presents descriptive analyses about the early childhood and school-age workforce based on the 2019 National Workforce Registry Alliance Dataset. It also presents analyses examining the relationship of age with education level, descriptive statistics on training hours classified by the Alliance Core Knowledge areas, and the relationship between licensed center director registry participation and staff participation. This report features two new analyses: a focus on school-age participants and longitudinal analyses examining changes in employment status, education, and role between the 2017 and 2019 datasets.

The 2019 National Workforce Registry Alliance Dataset consists of data from 14 registries: Arizona, Connecticut, Miami-Dade (Florida), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, West Virginia, and Wisconsin. These registries followed the Partnership Eligibility Review (PER)[1] guidelines for data submission. The dataset represents active registry participants as of January 1, 2017, through March 1, 2019, and includes individual records from 398,986 professionals (337,551 of whom were currently employed) working across 63,306 programs/facilities. Of the 14 registries, participation is mandatory for most of the workforce for Illinois, Nevada, Ohio, Oklahoma, West Virginia, and Wisconsin.

Unless otherwise noted, all tables and figures include data from the 14 registries listed above.

Featured Analyses for the 2019 Dataset

For the 2019 Workforce Dataset Report, two analyses are featured. The first examines the characteristics of registry participants who serve the infant-toddler population, with comparisons to participants who serve other age groups. The second examines longitudinal changes in participation rates over time, changes in employment status, increases in education level, and changes in role between the 2017 and 2019 datasets.

Infant-Toddler Participant Characteristics

Across all registry participants, nearly a third (30%) (84,956) reported having direct contact with the infant-toddler population. As shown in Figure 1, slightly more participants worked with preschoolers only (32%), followed closely by those working with multiple age groups (28%). Only 10% of all registry participants worked exclusively with school agers only.

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[1] Partnership Eligibility Review (PER) assesses a registry's level of "readiness" for participation in data-related projects at the national level. It not only looks at what data are collected and the consistency of format, but more importantly, how data are collected with a review of key policies and processes.

*Figure 1. Age Group Served (*n *=283,501)*
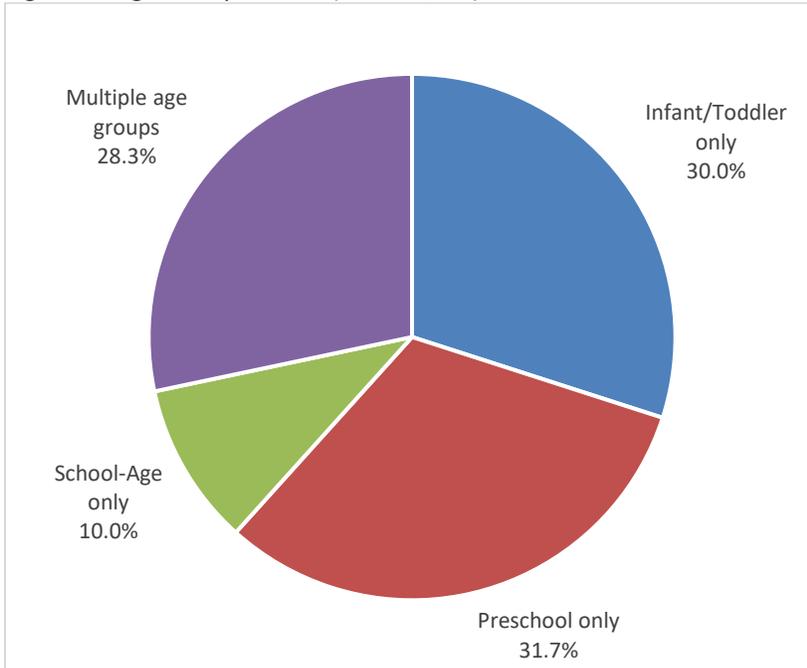
As shown in Figure 2, most infant-toddler only participants worked in centers (95%), with about 5% working in family child care (FCC). The most common roles were center lead teacher (51%), followed by center assistant teacher (35%), and center other role (7%).

Figure 2. Percentage of Infant-toddler Only Participants by Role (n = 84,412)
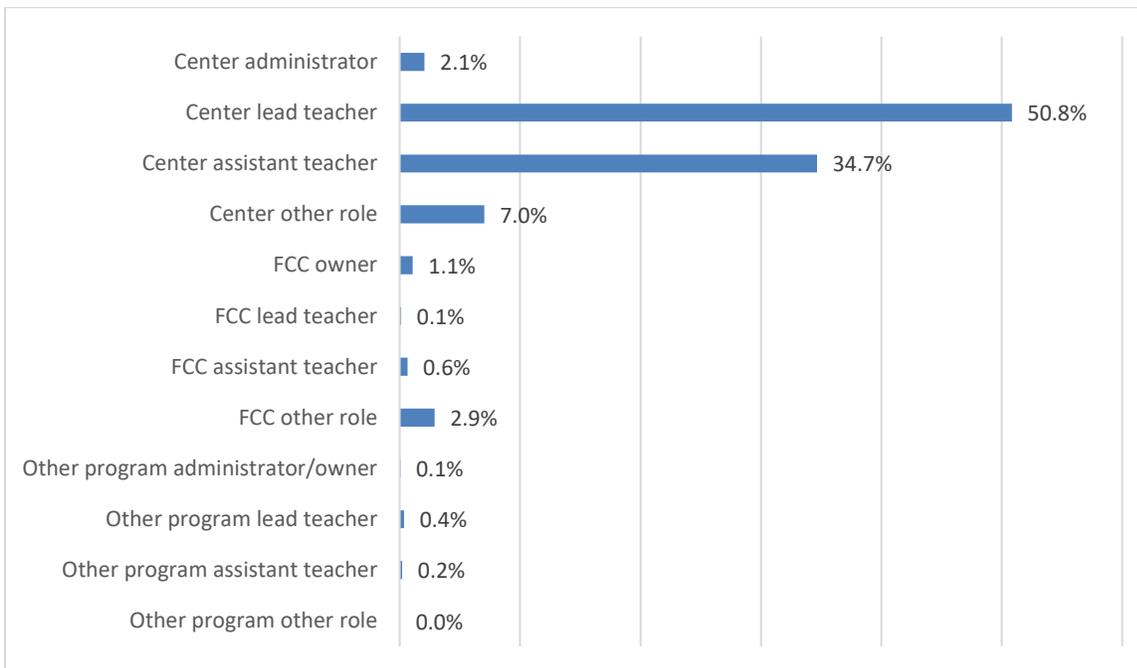
Figure 3 shows participants by age group served for major roles. Infant-toddler only participants worked in all major roles but were most likely to be found in the center roles. Center lead teachers were most likely to work with infant-toddlers (39%) compared to other age groups, although the percentage working with preschoolers was nearly has high (38%). For center assistant teachers, those working with preschoolers edged out those working with infant-toddlers (38% vs. 37%). FCC staff were most likely to work with multiple age groups.

Figure 3. Registry Participants by Major Role and Age Group Served
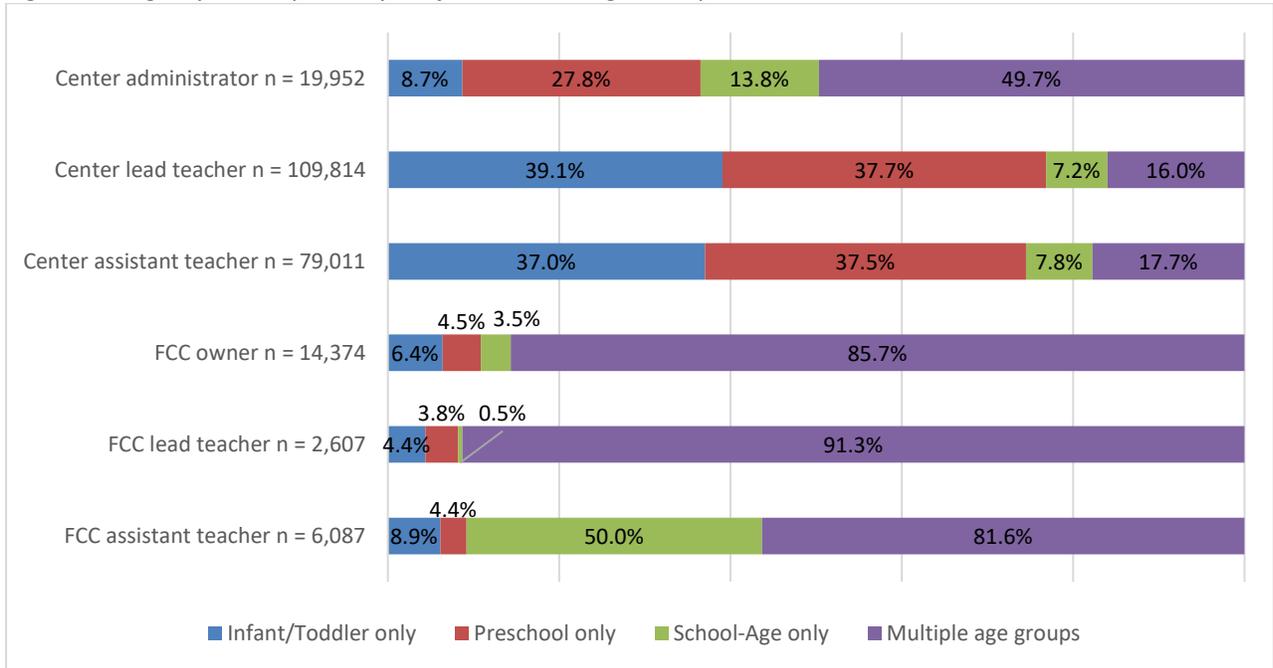
As shown in Figure 4, infant-toddler participants worked more hours per week on average (35.8) than those working with preschool and school-age groups but slightly less than those working with multiple-age groups.

Figure 4. Average Hours Worked Per Week by Age Group Served (All Roles)
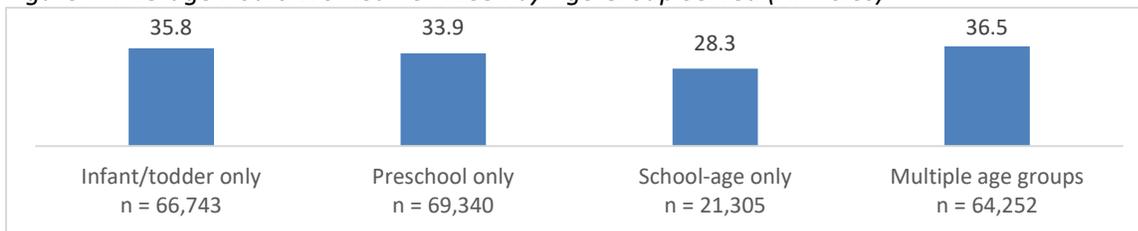
As shown in Figure 5, infant-toddler participants worked more months per year on average (11.5) than those working any other age groups.

Figure 5. Average Months Worked Per Year by Age Group Served (All Roles)
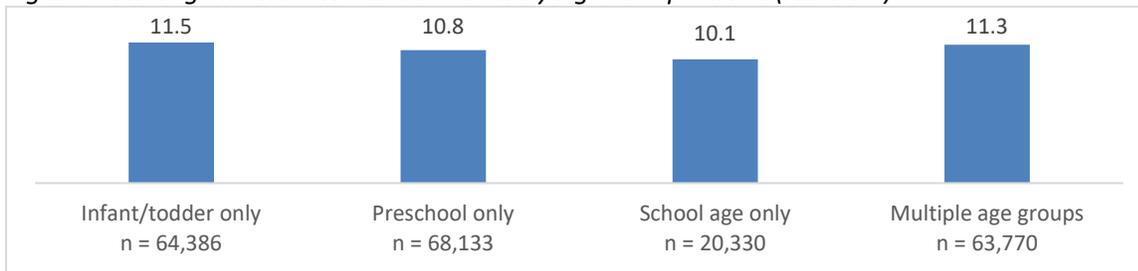
Figure 6 compares years of experience for center lead teachers by age group served. Infant-toddler center lead teachers had less experience (median years = 3.7) than preschool leads (median years = 5.3). School-age center leads had the least amount of experience (median years = 2.8). The median number of years in the field for multiple age group leads was 3.6, just a little lower than the figure for infant-toddler leads.

Figure 6. Center Lead Teachers: Years in Field by Age Group Served
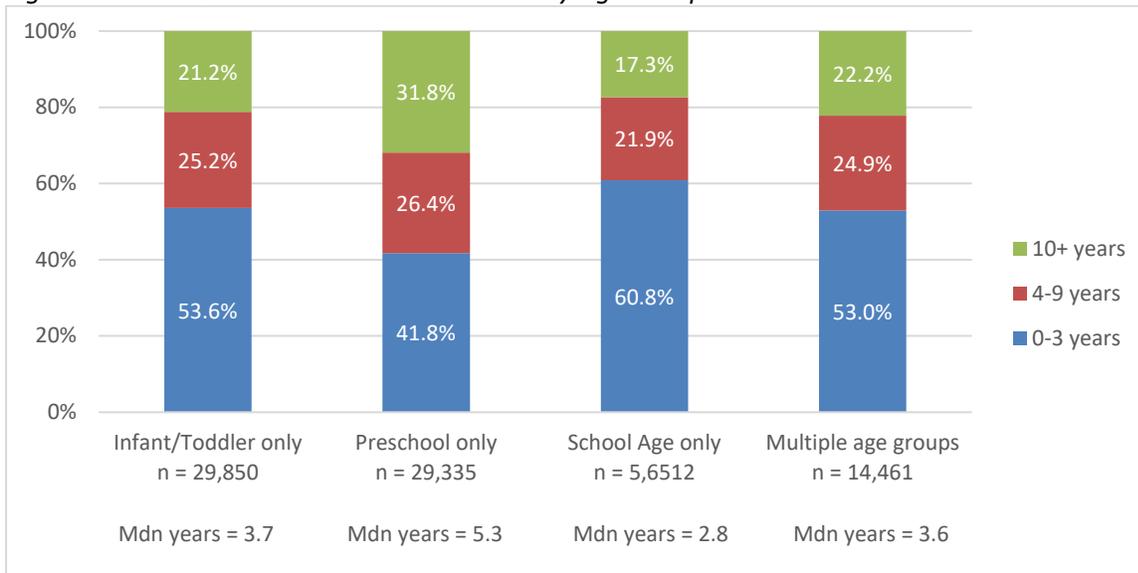
Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Ohio, Oklahoma, Maine, Minnesota, Montana, Nevada, New York, and Wisconsin registries.

Since age is related to years of experience, it is not surprising that infant-toddler center lead teachers also tended to be younger than those working with preschoolers (see Figure 7). Infant-toddler participants had a median age of 31, compared to 37 for preschool and 32 for multiple age group center lead teachers. School-age center lead teachers were the youngest, with a median age of 30, which is consistent with the fact that they have the least amount of experience.

Figure 7. Center Lead Teachers: Median Age by Age Group Served

| Infant-toddler only
n = 29,850 | Preschool only
n = 29,335 | School-age only
n = 5,651 | Multiple age groups
n = 14,461 |
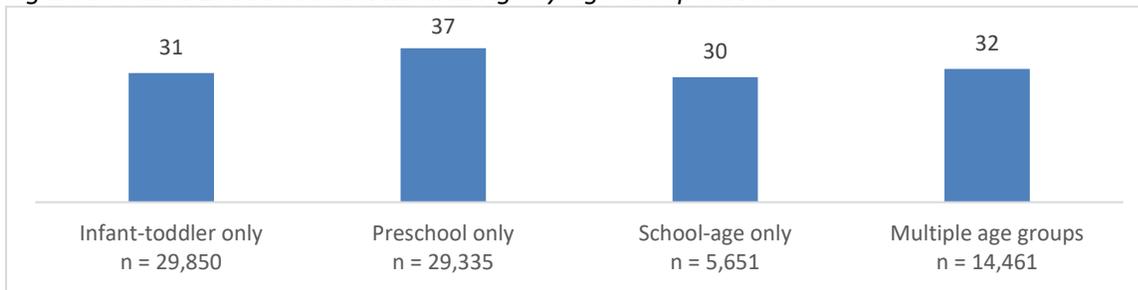
Figure 8 compares educational attainment by age group served for all roles. Infant-toddler participants were less likely to have a bachelor's degree (22%) than participants in any other age groups. Participants serving preschoolers were most likely to have a bachelor's degree (45%). A majority of infant-toddler participants held only a high school diploma or less (59%), the highest percentage across all age groups.

Figure 8. Educational Attainment by Age Group Served for All Roles
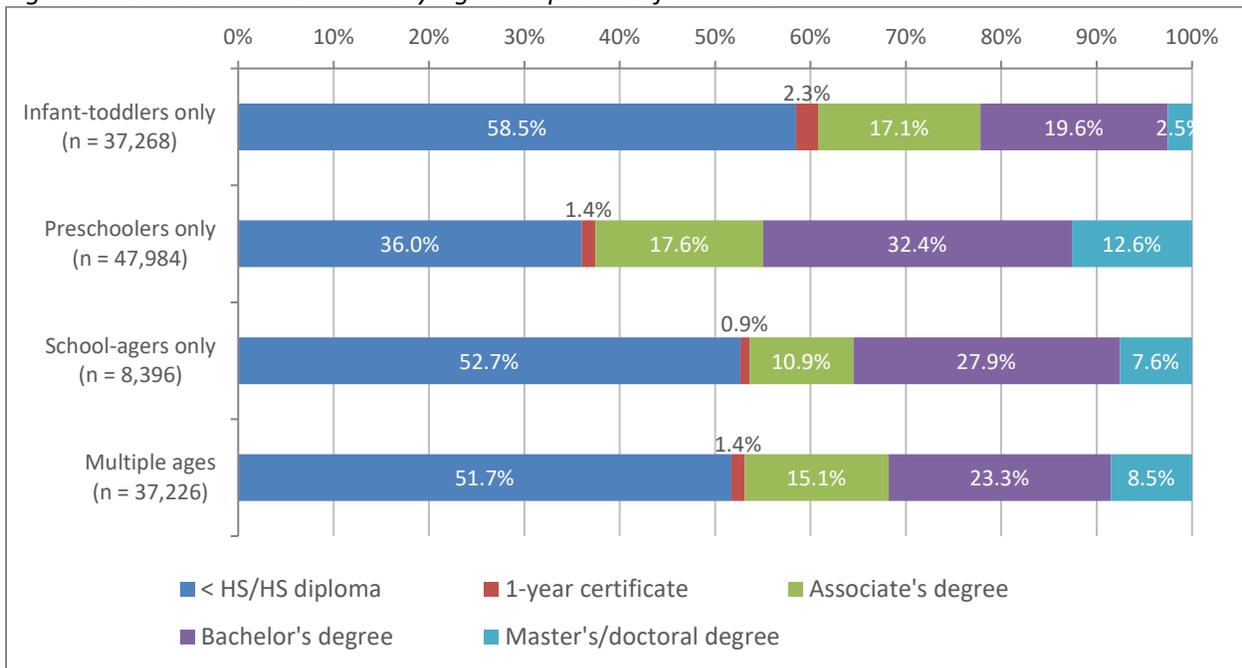
Figure 9 compares educational attainment by age group for center lead teachers. Only about a quarter (26%) of infant-toddler center lead teachers had a bachelor's degree, which is less than half the figure for center lead teachers working with preschoolers (54%) and less than those working with school-agers (39%) and multiple age groups (33%).

Figure 9. Center Lead Teachers: Highest Level of Education by Age Group Served
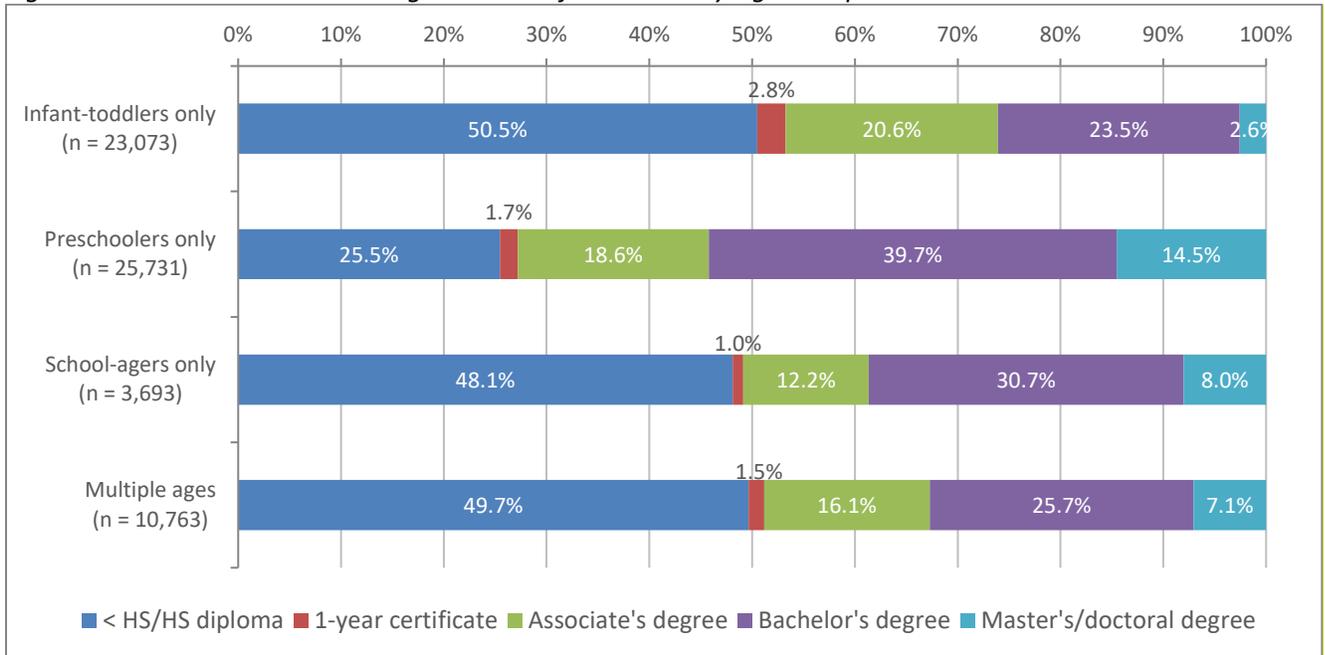
Figure 10 compares median hourly wages for infant-toddler participants with those who work with other age groups across center-based roles as well as across all roles. Clearly, those who work with infant-toddlers reported earning less (lead teachers earn $12.00 per hour) than those working with preschoolers (lead teachers earn $14.00), who earned the most. One of the reasons for this is that participants who work exclusively with preschoolers are more likely to have a bachelor's degree, which likely contributes a great deal to the wage differential.

Figure 10. Median Hourly Wage by Age Group Served and Major Role
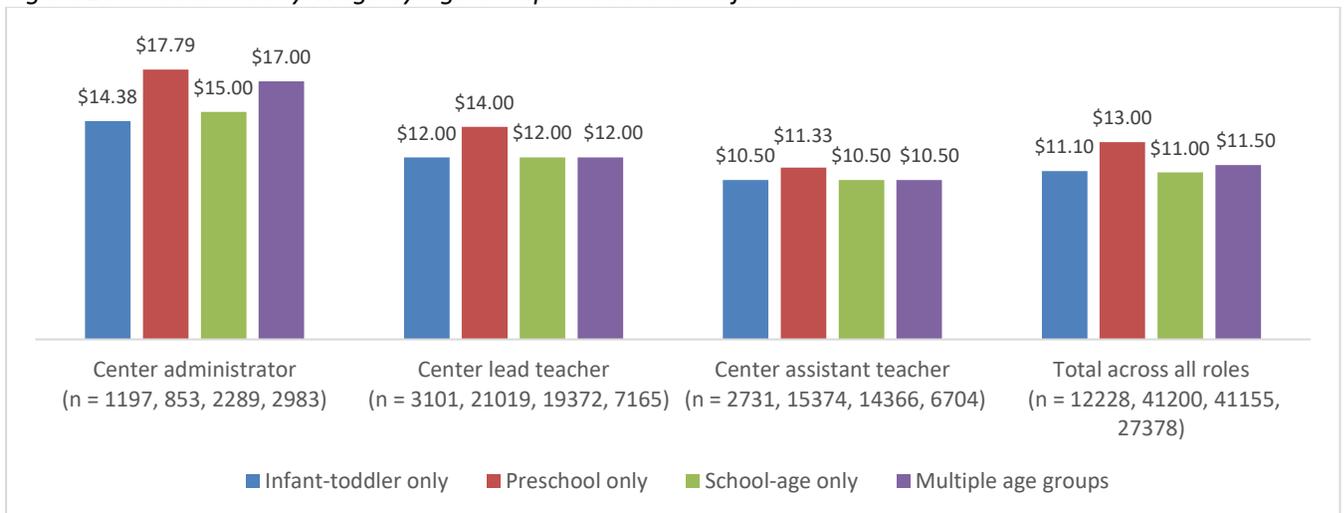
Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Wisconsin, and West Virginia registries.

Figure 11 compares median hourly wages for center lead teachers by education level and age group served. The median hourly wage for infant-toddler center leads with less than an associate's degree ($11.00) was more than center leads working with school-age ($10.48) and multiple age groups ($10.30) but less than the wages for those working with preschoolers ($12.00). Similarly, infant-toddler center leads with an associate's degree earned more than their school-age and multiple age group peers, but less than preschool center leads. However, when looking at center leads with a bachelor's degree or more, a different trend emerged: infant-toddler center lead teachers had the same median hourly wage as those working with school-age and multiple age groups ($14.00) and earned significantly less than preschool center leads ($16.23). The increase in median hourly wage between center leads with associate's and those with bachelor's degrees was least for infant-toddler leads ($1.00 increase) and most for preschool leads ($2.64). Based on these data, infant-toddler center leads receive the least wage benefit from earning a bachelor's degree.

Figure 11. Center Lead Teachers: Median Hourly Wage by Highest Level of Education and Age Group Served
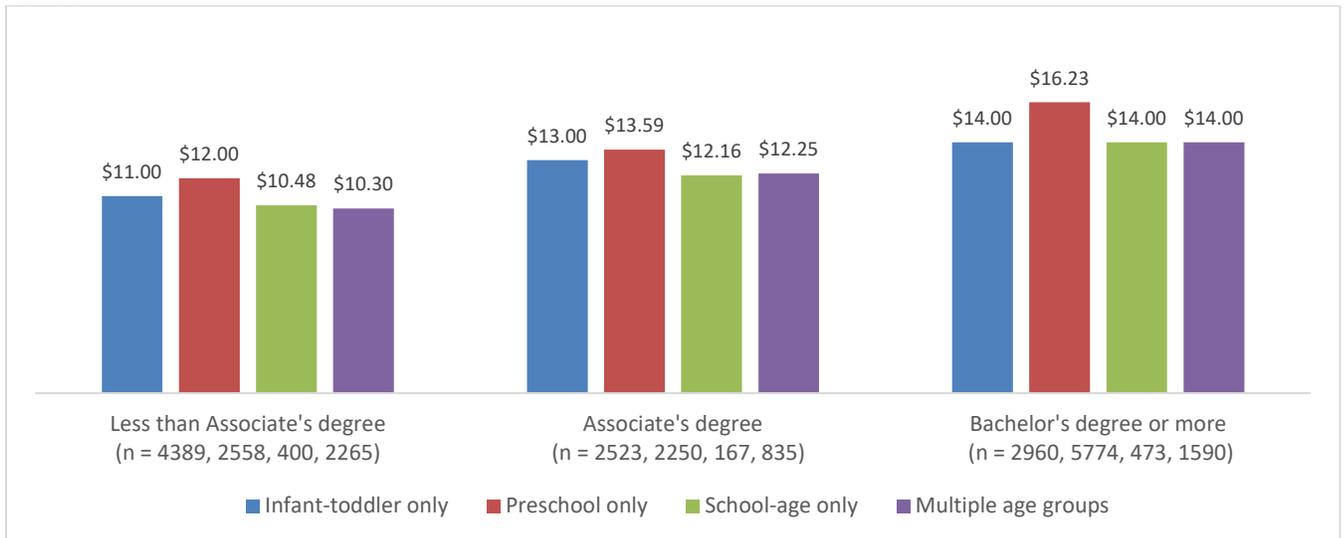
Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Wisconsin, and West Virginia registries.

Figure 12 shows number of ECE college credits for infant-toddler participants by major roles. The median number of ECE credits was zero (0) for all roles except for center administrators and center lead teachers. Center administrators were most likely to report having ECE college credits (71%) followed by center lead teachers reported (51%). Other program assistant teachers were least likely to report having ECE credits (16%), followed by other center assistant teachers (21%), other program lead teachers (28%), other program administrators (36%), and FCC owners (40%).

Figure 12. Number of ECE College Credits for Infant-Toddler Participants by Major Role
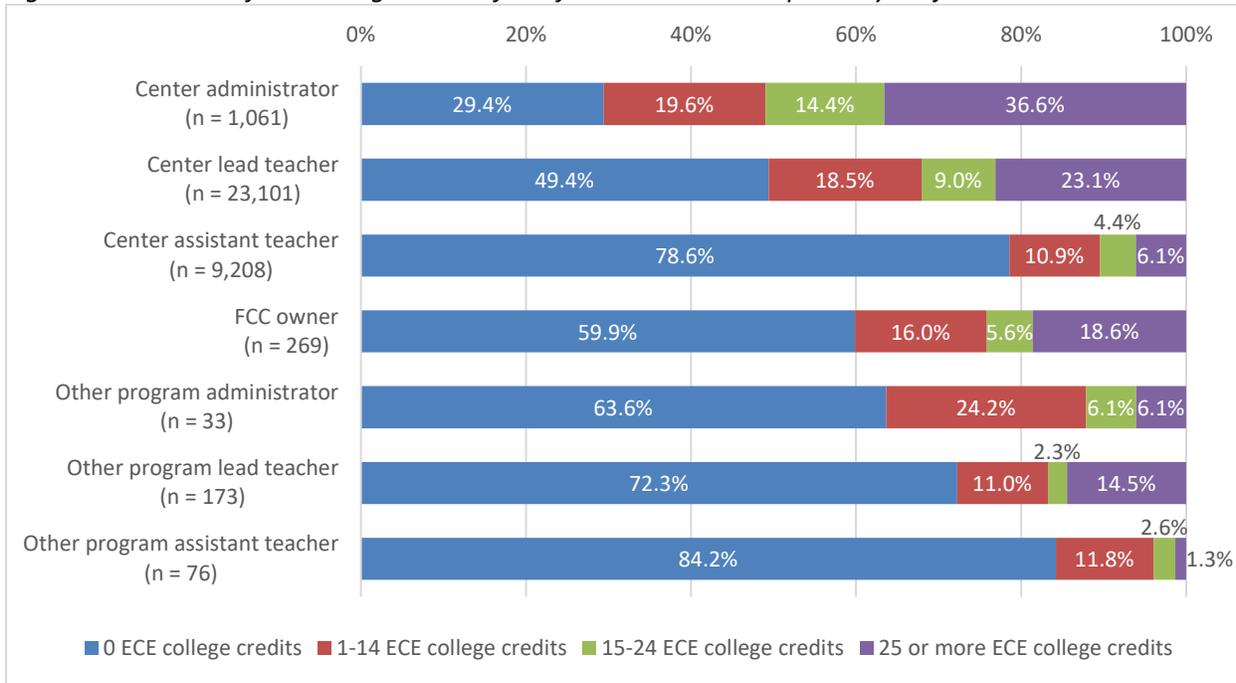
Note. Results are based on data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Oklahoma, Wisconsin, and West Virginia registries.

Figure 13 shows the number of ECE college credits reported by age group served across all roles. Participants working with preschoolers are most likely to report having ECE college credits (45%), followed by those working with multiple age groups (42%), those working with infant-toddlers, (41%), and finally those work with school-agers (37%).

Figure 13. Number of ECE College Credits by Age Group for All Roles
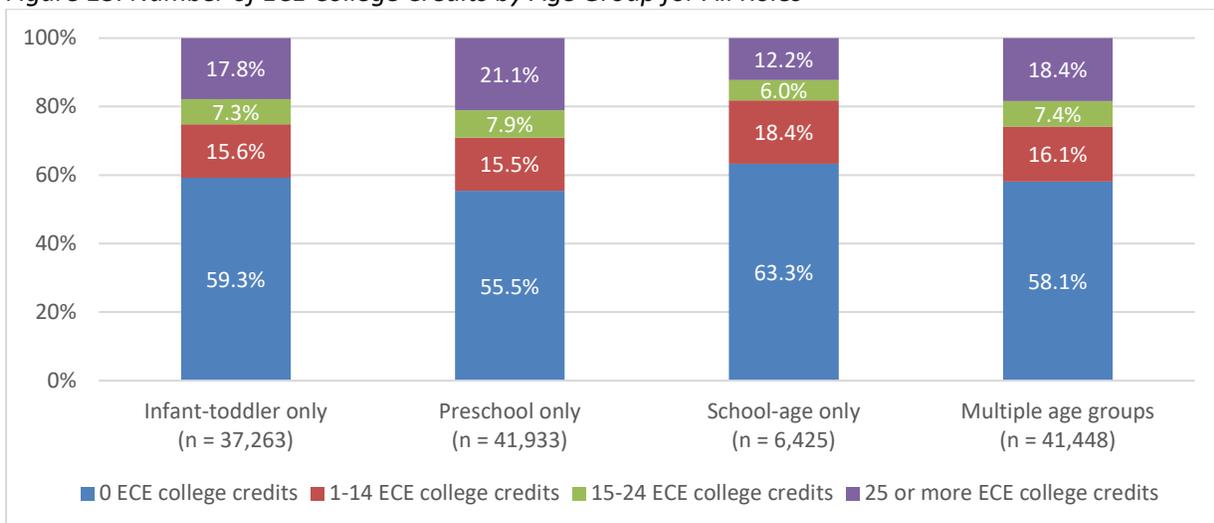
Note. Results are based on data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Oklahoma, Wisconsin, and West Virginia registries.

Figure 14 shows ECE-specific degrees for center lead teachers by age group served. Infant-toddler center lead teachers were much less likely to have an ECE-specific degree compared to their peers serving preschoolers (14% vs. 30%, when combining across all degrees). Infant-toddler center lead teachers were also less likely to have an ECE-specific bachelor's and master's degree compared to multiple age group lead teachers (18%). Unsurprisingly, school age lead teachers were the least likely to have an ECE-specific degree (7%).

Figure 14. Center Lead Teachers: ECE-Specific Degrees by Age Group Served
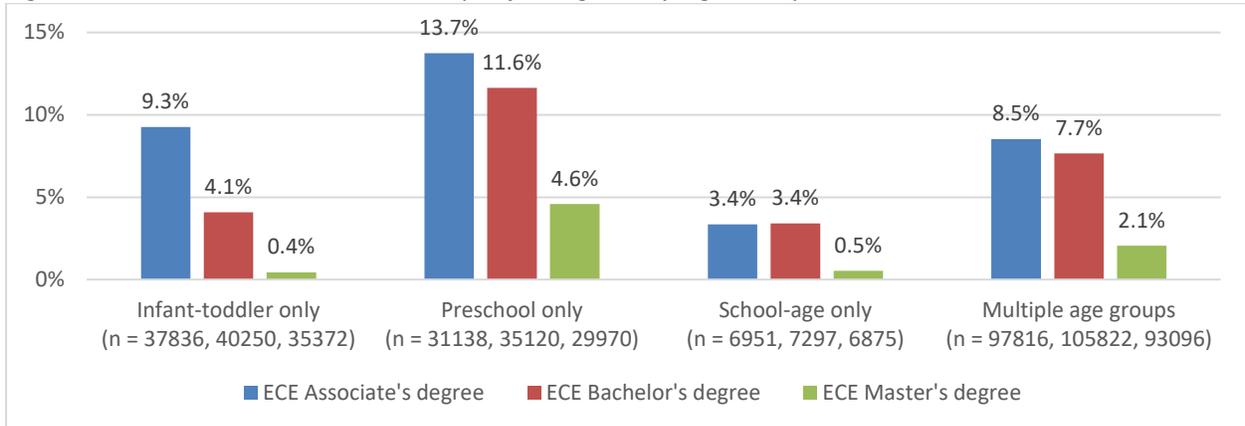
Note. Results are based on data from the Connecticut, Illinois, Maine, Minnesota, Montana, New York, Oklahoma, and Wisconsin registries.

As shown in Figure 15, infant-toddler and multiple age group participants across all roles reported more training hours (median = 12 hours) than those serving preschoolers and school-agers (median = 9 hours).

Figure 15. Training Hours by Clock Hour Category by Age Group Served (All Roles)
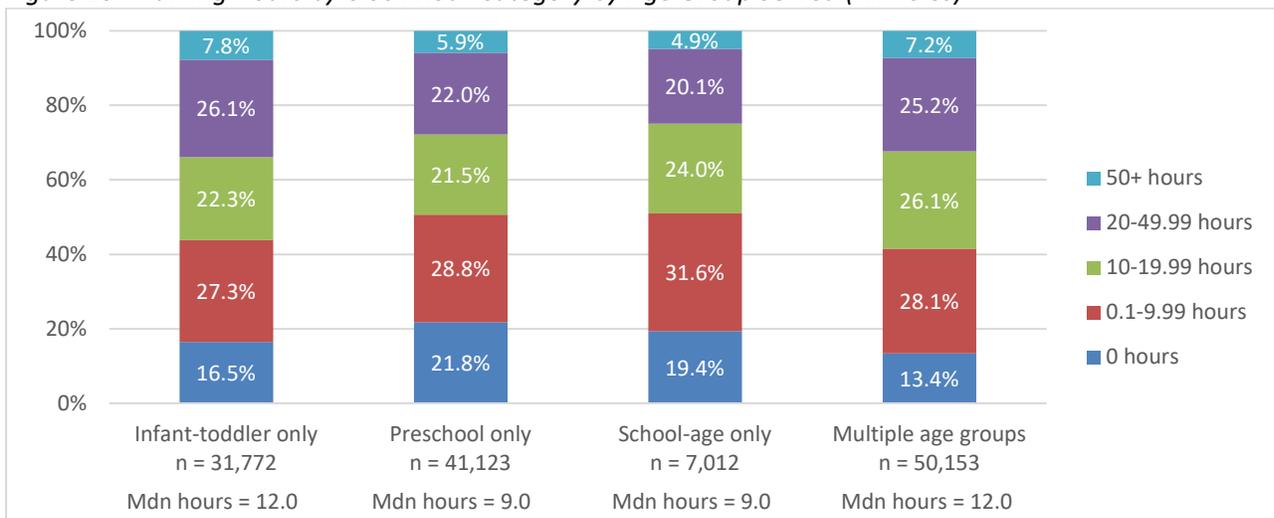
Note. Results are based on data from the Arizona, Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, Wisconsin registries.

The training hour picture is fairly similar when looking at center lead teachers only (Figure 16). Preschool and multiple age group center leads reported the most training hours (medians of 12 and 11, respectively), followed by preschool center leads, and lastly school-age center leads.

Figure 16. Center Lead Teachers: Training Hours by Clock Hour Category by Age Group Served
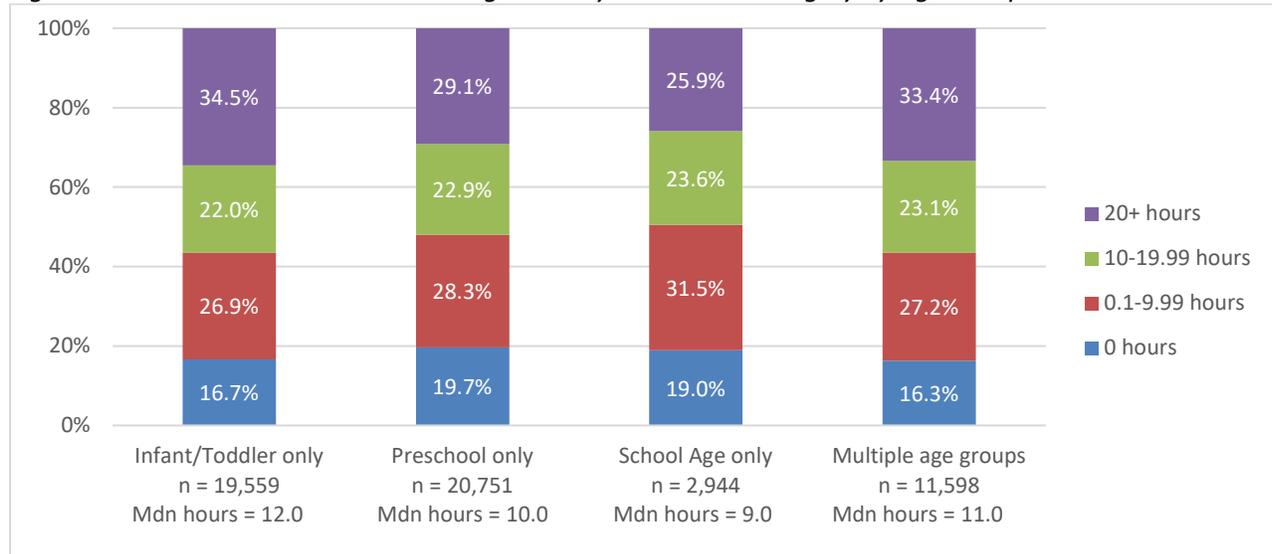
Note. Results are based on data from the Arizona, Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, Wisconsin registries.

Changes in Employment, Education, and Role between the 2017 and 2019 Datasets

Starting with the 2015 dataset, all participating PER registries assigned participants a unique identifier to be used for Alliance dataset purposes.[2] Using this registry-specific identifier, data from the registries that participated in both the 2017 and 2019 datasets were matched. Nine registries participated in both the 2017 and 2019 dataset draws and provided data that could be matched: Connecticut, Miami-Dade County (Florida), Illinois, Maine, Montana, New York, Oklahoma, Wisconsin, and West Virginia. The following analyses are based on the matched records from these registries. It should be noted that because participant identifiers are registry-specific, it is not currently possible to track registry participation across registries. Thus, these analyses are not able to capture individuals who participated in different registries in 2017 and 2019.

Of the nine registries with matched data, three are considered "mandatory": Illinois, Oklahoma, and West Virginia. The other six—Connecticut, Miami-Dade County (Florida), Maine, Montana, New York, and Wisconsin—are designated as "non-mandatory" (although they may be mandatory for a portion of the workforce). Although participation in Wisconsin's registry is mandatory, because renewals

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[2] Participants' real registry ID codes were not used in order to preserve their anonymity.

are not required, and a large proportion of participants do not regularly update their information, we have placed Wisconsin in the non-mandatory category for the subsequent analyses.

As shown in Table 1, a total of 95,077 individual participant records were matched, yielding a retention rate between 2017 and 2019 for all nine registries of 64%, with individual registries ranging from 52% to 80.0%. Mandatory registries had a 65.5% retention rate, compared to 61.5% for non-mandatory registries. It should be noted that Illinois' registry accounts for nearly three-quarters of the participants who were retained across both datasets, which means that the subsequent results reported for mandatory registries heavily reflect the state of affairs within Illinois.

Table 1. Participant Retention Rate from 2017 to 2019 Dataset by Registry

	CT	Miami-Dade (FL)	IL	ME	MT	NY	OK	WI	WV	Total
Number of 2017 participants that were also in 2019 dataset	6476	3271	42,325	2572	2080	7139	11,243	15,196	4775	95,077
Number in 2017 dataset	10,993	4098	62,254	3912	3096	13,648	18,064	23,960	8771	148,796
Retention rate from 2017 to 2019 dataset	58.9%	79.8%	68.0%	65.7%	67.2%	52.3%	62.2%	63.4%	54.4%	63.9%

Figure 17 shows the percentage of participants who were in both datasets by role in the 2019 dataset. Center lead teachers had the highest percentage (47%), followed by center assistant teachers (20%), center administrators (13%), and FCC owners (10%).

*Figure 17. Participants in Both 2017 and 2019 Datasets: Role of Participants in 2019 Dataset (*n = 89,470)
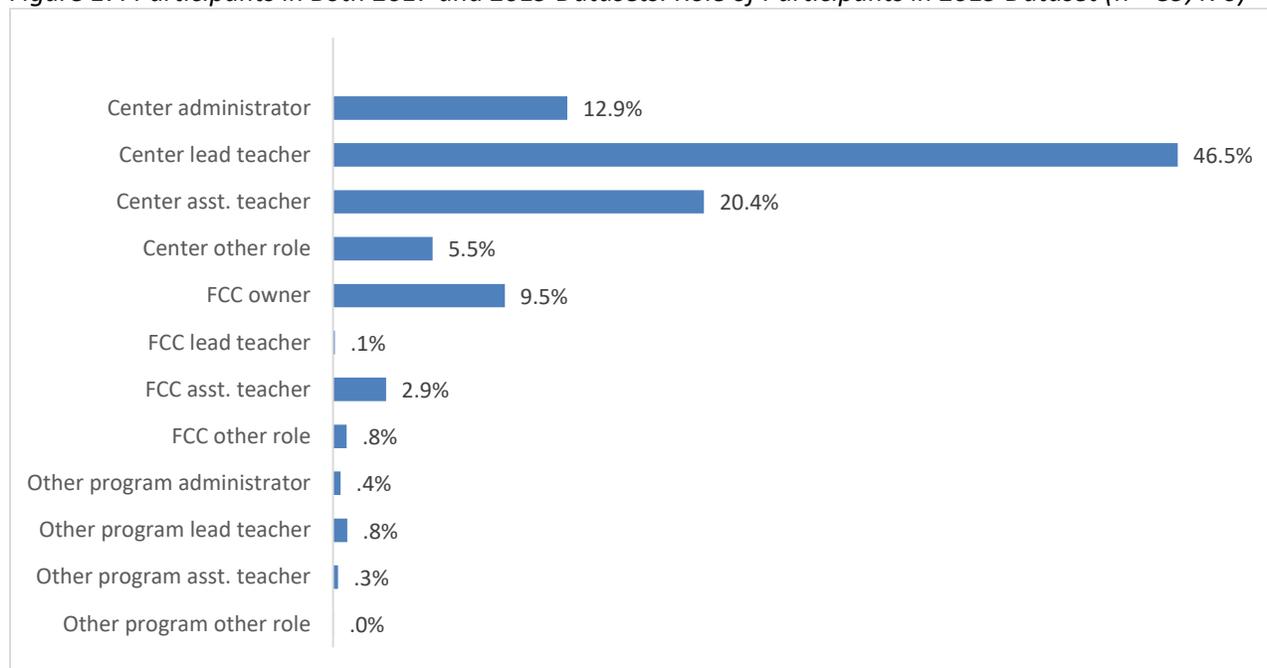
Figure 18 shows employment status over time. For all registries, 94% of participants were employed in both datasets, 3.5% were employed in 2017 but unemployed in 2019, 1.4% were

unemployed in 2017 but employed in 2019, 0.6% were unemployed in both datasets, and 0.1% were presumed retired in either 2017 or 2019. (For this analysis, participants who were 65 years or older and were unemployed in either dataset were coded as "retired.")

Figure 18. Participants in Both 2017 and 2019 Datasets: Employment Status by Registry Mandatory Status

	All registries n = 95,163	Mandatory registries n = 58,343	Non-mandatory registries n = 36,734
■ Employed in 2017 and 2019	94.4%	97.4%	89.5%
■ Employed in 2017, unemployed in 2019	3.5%	1.6%	6.5%
■ Unemployed in 2017, employed in 2019	1.4%	0.7%	2.4%
■ Unemployed in 2017 and 2019	0.6%	0.2%	1.3%
■ Employed in 2017 but presumed retired in 2019 (65+ and unemployed)	0.1%	0.1%	0.2%
■ Presumed retired in 2017 and 2019	0.0%	0.0%	0.1%
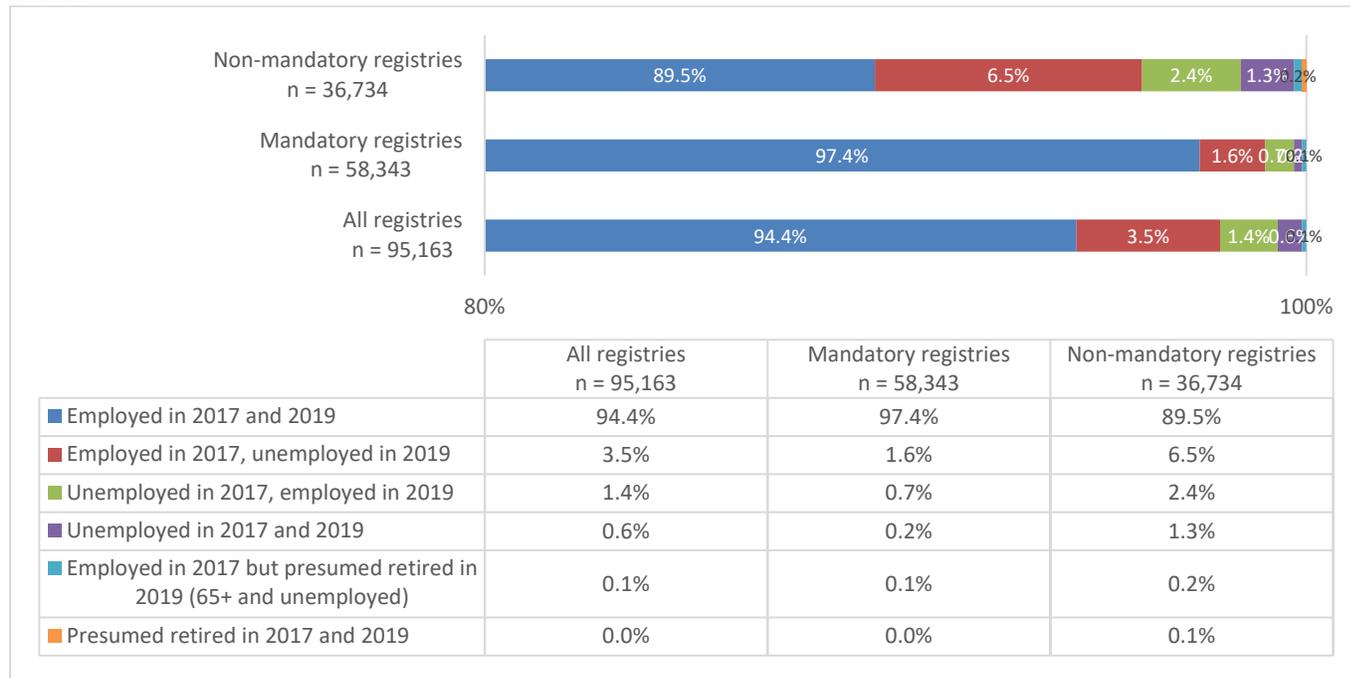
Figure 19 shows the percentage of participants who increased their education attainment between the 2017 and 2019 datasets by major role and registry mandatory status. It is not surprising that mandatory registries show a higher percentage of participants across all major roles reporting more education attainment than non-mandatory ones since mandatory registries are more likely to capture changes over time.

Looking across all registries, center administrators were most likely to report increased education attainment (10%), followed by center lead teachers (7%), FCC owners (7%), and center assistant teachers (5%). The pattern was slightly different among mandatory registries in that FCC owners were slightly more likely to report higher levels of education than center lead teachers (9.9% vs. 9.8%). For non-mandatory registries, center lead teachers were slightly more likely to report more education (5.5%) than center administrators (5.4%), followed by center assistant teachers (4.5%), and then FCC owners (3.1%).

Due to different requirements and policies among registries, it is likely that many participants have not updated their education. On the other hand, it is not known to what extent the changes in education level observed actually occurred during the two years between the dataset draws. Further analyses looking at the data for degrees conferred would shed light on the extent to which degrees were actually obtained during the two-year window.

Figure 19. Participants in Both 2017 and 2019 Datasets: Participants who Increased Their Highest Level of Education by Major Role in 2019 Dataset by Registry Mandatory Status
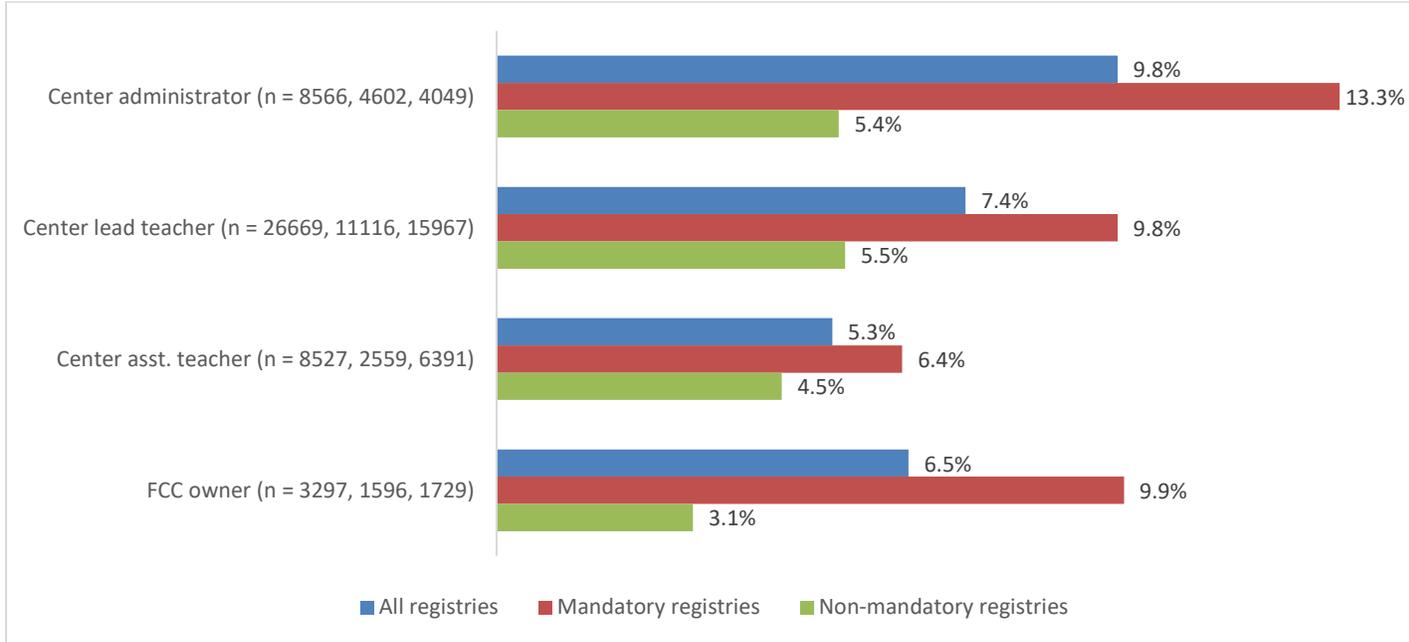
Figure 20 shows how highest level of education changed for participants who were center lead teachers in the 2019 dataset. Looking across all registries, over one-quarter (28%) of center lead teachers moved from having a high school diploma to having an associate's degree and a similar percentage (28%) moved from a high school diploma to a bachelor's degree. About one-fifth (19%) moved from an associate's degree to a bachelor's degree. Finally, 10% of center teachers reported moving from a bachelor's degree to master's degree as their highest level of education in 2019.

For mandatory registries, about one-quarter (23%) of center lead teachers moved from having a high school diploma to having an associate's degree, whereas nearly two-fifths (38%) moved from a high school diploma to a bachelor's degree. Over 1 in 6 center lead teachers (17%) moved from an associate's degree to a bachelor's degree. Finally, 6% of center teachers reported moving from a bachelor's degree to master's degree as their highest level of education in 2019.

For non-mandatory registries, over one-third one-quarter (34%) of center lead teachers moved from having a high school diploma to having an associate's degree, whereas only one-sixth (16%) moved from a high school diploma to a bachelor's degree. Over 1 in 5 center lead teachers (21%) moved from an associate's degree to a bachelor's degree. Finally, 16% of center teachers reported moving from a bachelor's degree to master's degree as their highest level of education in 2019.

Mandatory and non-mandatory registries showed different patterns of increased education attainment. Participants in mandatory registries were far more likely to move from a high school diploma to a bachelor's degree than those in non-mandatory registries (38% vs. 16%). On the other hand, participants in non-mandatory registries were more likely to move from a high school diploma to

an associate's degree than those in mandatory registries (34% vs. 23%). Although the percentages of participants moving from associate's to bachelor's degrees were similar (17% for mandatory, 21% for non-mandatory), non-mandatory participants were more likely to report moving from a bachelor's to a master's degree than those in mandatory registries (16% vs. 6%).

Figure 20. Participants in Both 2017 and 2019 Datasets: Center Lead Teachers' Change in Educational Attainment by Registry Mandatory Status (Mandatory registries n = 1,043, Non-mandatory registries n = 819, All registries n = 1,862)
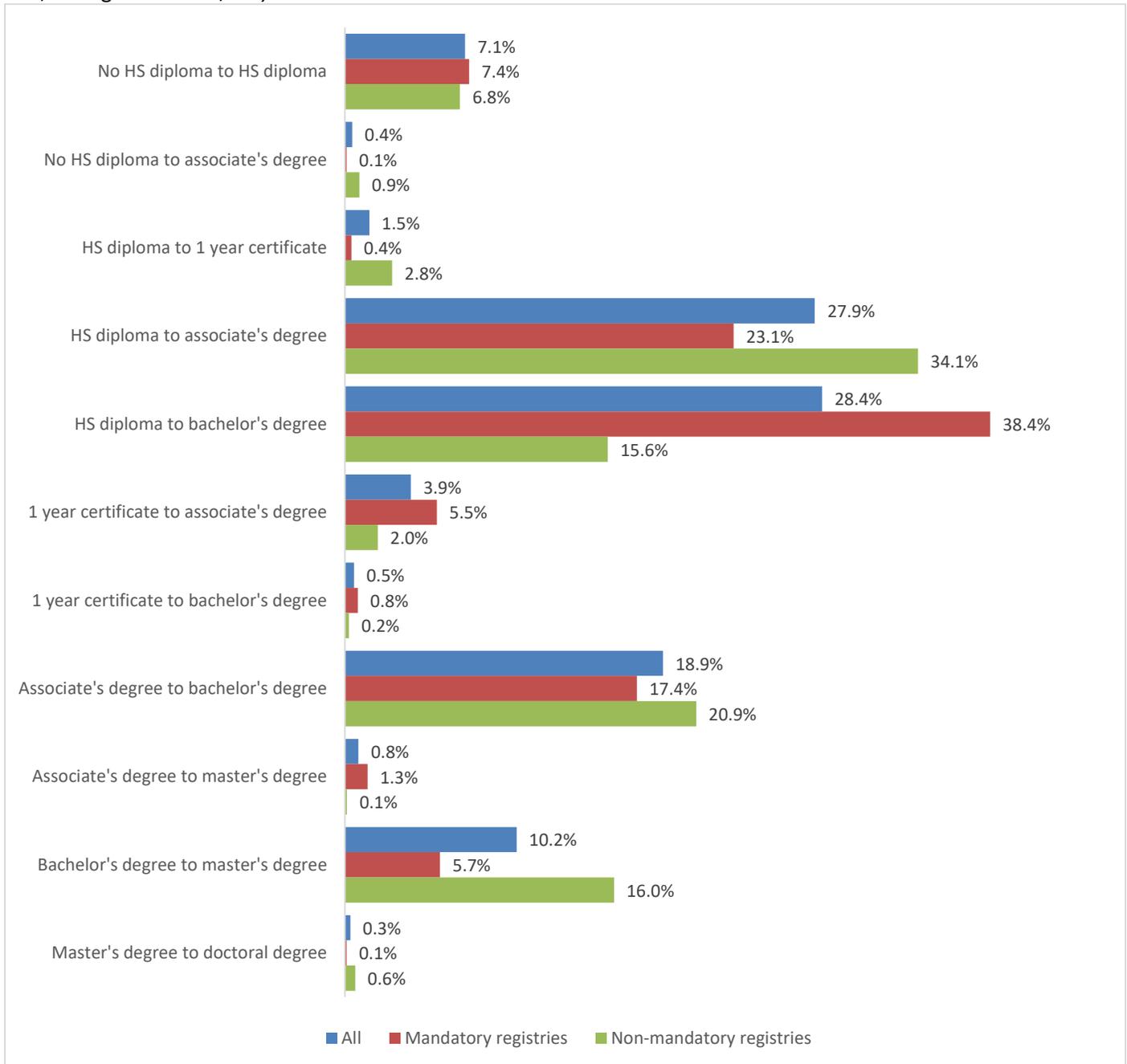
The following three tables—Tables 2-4—show the percentages of participants who maintained or changed roles between the two datasets. The figures for all registries, mandatory registries, and non-mandatory registries are displayed in different tables. As discussed above with the education change results, it should be noted that these figures likely represent underestimates of the changes in role that actually occurred.

Table 2 shows the percentage of participants for all registries who maintained or changed roles between the two datasets. For center administrators in the 2017 dataset, most (86%) were also center administrators in the 2019 dataset. However, 8% of center administrators in 2017 reported their role as center lead teacher in 2019. Participants who were center lead teachers in 2017 were most likely to remain center teachers in 2019 (88%), with 4% moving to center assistant teacher and 5% to center administrator in 2019. Over one of fifth (21%) of center assistant teachers became center lead teachers between the two datasets. Almost all family child care owners (94%) kept the same role between the two datasets.

Participants working in other programs (not centers or family child care) tended to remain within other programs, although some of the workforce moved to center-based positions. Other program lead teachers were most likely to keep that role (78%), but 14% became center lead teachers and 3% other program administrators. Other program administrators were also most likely to maintain the same role (63%), but 15% reported moving to center-based positions.

Table 2. *Participants in Both 2017 and 2019 Datasets: Changes in Role for All registries*

Role in 2019	Role in 2017					
	Center administrator (*n* = 10,058)	Center lead teacher (*n* = 39,409)	Center assistant teacher (*n* = 21,578)	FCC owner (*n* = 8,304)	Other program administrator (*n* = 457)	Other program lead teacher (*n* = 658)
Center administrator	86.3%	4.6%	1.2%	1.4%	8.3%	1.2%
Center lead teacher	8.4%	88.1%	21.4%	1.5%	5.0%	14.4%
Center asst. teacher	1.4%	3.8%	73.4%	0.6%	1.3%	1.7%
FCC owner	0.6%	0.5%	0.3%	93.6%	1.5%	0%
Other program administrator	0.2%	0.1%	0%	0.1%	63.0%	3.0%
Other program lead teacher	0.1%	0.2%	0.1%	0%	10.3%	78.1%
Other role not listed	3.0%	2.7%	3.6%	2.8%	10.6%	1.6%

Note. Cells with 5% or higher are highlighted.

Table 3 shows the percentage of participants in mandatory registries who maintained or changed roles between the two datasets. For center administrators in the 2017 dataset, most (85%)

were also center administrators in the 2019 dataset. However, 9% of center administrators in 2017 reported their role as center lead teacher in 2019. Participants who were center lead teachers in 2017 were most likely to remain center teachers in 2019 (85%), with 5% moving to center assistant teacher and 6% to center administrator in 2019. Almost a quarter (24%) of center assistant teachers became center lead teachers between the two datasets. Almost all family child care owners (94%) kept the same role between the two datasets.

For participants working in other programs (not centers or family child care), a large percentage reported moving to center-based positions. Other program administrators, in fact, were more likely to move to center-based positions (57%) than remain in other program roles (43%). Only 45% of other program lead teachers remained in the same role, with 44% reporting that they became center lead teachers in the 2019 dataset.

Table 3. *Participants in Both 2017 and 2019 Datasets: Changes in Role for Mandatory registries*

Role in 2019	Role in 2017					
	Center administrator (*n* = 6,402)	Center lead teacher (*n* = 23,150)	Center assistant teacher (*n* = 12,984)	FCC owner (*n* = 6,289)	Other program administrator (*n* = 63)	Other program lead teacher (*n* = 124)
Center administrator	84.9%	5.5%	1.5%	1.0%	39.7%	2.4%
Center lead teacher	9.0%	85.1%	24.4%	1.1%	15.9%	43.5%
Center asst. teacher	1.4%	4.8%	68.6%	0.5%	1.6%	0.8%
FCC owner	0.7%	0.5%	0.3%	93.7%	0%	0%
Other program administrator	0.1%	0%	0%	0%	41.3%	3.2%
Other program lead teacher	0.1%	0.1%	0.3%	0%	0%	45.2%
Other role not listed	3.8%	4.0%	4.9%	3.7%	1.5%	4.9%

Note. Cells with 5% or higher are highlighted.

Table 4 shows the percentage of participants in non-mandatory registries who maintained or changed roles between the two datasets. For center administrators in the 2017 dataset, most (89%) were also center administrators in the 2019 dataset. However, 7% of center administrators in 2017 reported their role as center lead teacher in 2019. Participants who were center lead teachers in 2017 were most likely to remain center teachers in 2019 (92%), with 2% moving to center assistant teacher and 3% to center administrator in 2019. More than one-sixth (17%) of center assistant teachers became center lead teachers between the two datasets. Almost all family child care owners (93%) kept the same role between the two datasets.

Participants working in other programs (not centers or family child care) tended to remain within other programs, although some of the workforce moved to center-based positions. Other program lead teachers were most likely to keep that role (86%), but 8% became center lead teachers. Other program administrators were also most likely to maintain the same role (67%), but 12% reported moving to other program lead teacher positions.

Table 4. *Participants in Both 2017 and 2019 Datasets: Changes in Role for Non-Mandatory registries*

Role in 2019	Role in 2017					
	Center administrator (*n* = 3,656)	Center lead teacher (*n* = 16,259)	Center assistant teacher (*n* = 8,594)	FCC owner (*n* = 2,015)	Other program administrator (*n* = 394)	Other program lead teacher (*n* = 534)
Center administrator	88.8%	3.3%	0.7%	2.4%	3.3%	0.9%
Center lead teacher	7.3%	92.3%	16.8%	2.6%	3.3%	7.7%
Center asst. teacher	1.5%	2.3%	80.6%	0.7%	1.3%	1.9%
FCC owner	0.6%	0.5%	0.3%	93.4%	1.8%	0%
Other program administrator	0.4%	0.1%	0%	0.5%	66.5%	3.0%
Other program lead teacher	0.2%	0.3%	0.3%	0%	11.9 %	85.8%
Other role not listed	1.2%	1.2%	1.3%	0.4%	11.9%	0.7%

Note. Cells with 5% or higher are highlighted.

Based on Tables 2-4, it can be concluded that center-based positions and FCC owners across mandatory and non-mandatory registries were likely to remain in their same positions. However, other program staff were more likely in mandatory registries to move to center-based positions than other program staff in non-mandatory registries. Again, it should be noted that Illinois's registry made up the bulk of participants in mandatory registries, so that the findings may be more indicative of Illinois's context rather than mandatory registries in general.

Overview of Programs/Facilities

Table 3 shows the type and number of facilities, including regulation (licensing) status, for the full dataset (*n* = 63,306). Less than half (41%) of programs were centers, and slightly more than half programs (56%) were family child care (FCC). Nearly all center-based programs were regulated. "Other programs types" refers to programs that are not considered centers or homes by state licensing entities; these include school-based pre-kindergarten programs, school-based afterschool programs, day camps, and group child care homes.

Table 3. Facilities by License Type and Regulation Type

License type	n	% of all programs	Regulation type			
			% licensed	% unregulated	% license-exempt but regulated	% missing data
Center-based program	25,975	41.0%	90.3%	0.9%	8.8%	0.0%
Family child care homes	35,211	55.6%	52.0%	5.8%	42.2%	0.0%
Other program types	1,414	2.2%	72.2%	17.8%	10.0%	0.0%
Missing data	706	1.1%	0.0%	11.0%	0.0%	89.0%

Licensed Capacity

Figure 21 provides license capacity data by license type. Slightly more than half of centers (52%) had a capacity of 60 or less. "Other programs" tended to have smaller capacities, but there were a few larger programs. Not surprisingly, family child care programs have smaller capacities.

Figure 21. Licensed Capacity Categories by License Type
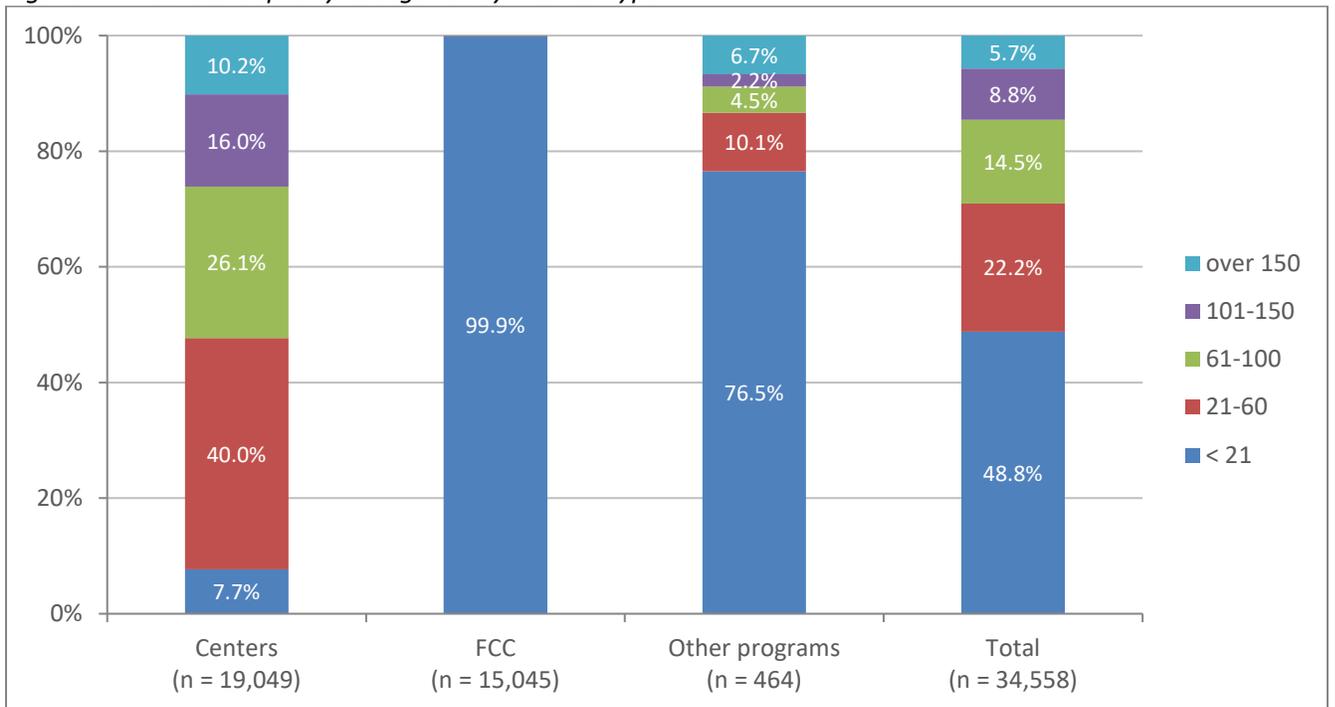
Quality Rating and Improvement Systems (QRIS)

Nine of the fourteen registries collect data about QRIS (Arizona, Illinois, Ohio, Oklahoma, Maine, Minnesota, Montana, Nevada, and Wisconsin). For these registries, information regarding QRIS rating status was not collected for 18.6% of the programs, and these programs are not represented in the

subsequent descriptive information. Figure 22 shows the percent of programs rated by a QRIS by site type. Overall, one-third (33%) of programs have a QRIS rating. Nearly half of licensed centers have been rated by a QRIS (48%), as well as slightly over half of licensed FCC programs (51%). However, almost no exempt but regulated FCC have been rated by a QRIS (0.3%). Only about one in eight (11.7%) exempt but regulated centers have QRIS ratings.

Figure 22. Percent of Programs with QRIS Ratings by Site Type
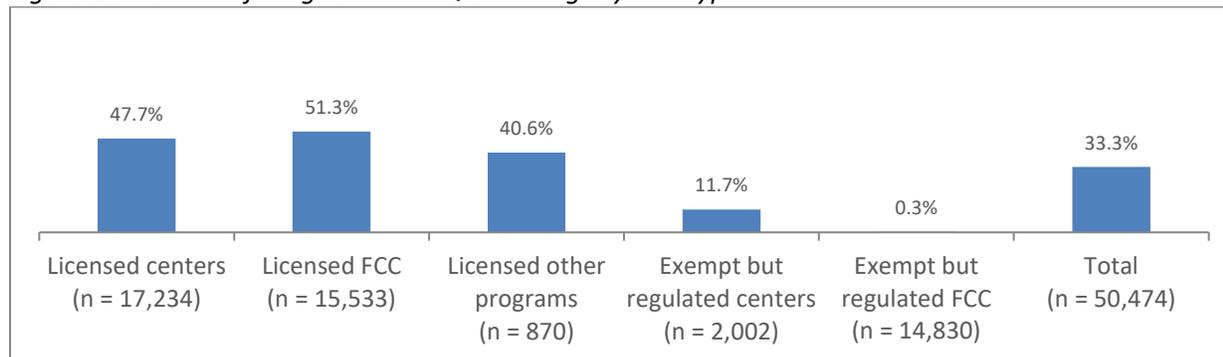
Note. Contributing registries include Arizona, Illinois, Ohio, Oklahoma, Maine, Minnesota, Montana, Nevada, and Wisconsin.

Overview of Participants

Based on their title and program type, registry participants were assigned a role. Table 4 shows characteristics of employed registry participants by role. Most of the data from these registries reflected participants who work in group settings with young children and youth.

Participants by Registry

In considering the findings from this dataset, it is important to keep in mind the differences in the number of participants from each registry. These differences are related to a number of factors, including the population of the relevant area, regulations and/or incentives regarding registry participation that are often linked to state-specific regulations for early childhood programs and workers, and registry resources. Figure 23 presents the number of currently employed participants by registry, as well as the number of currently employed participants who are direct service professionals (administrators and those who work with children). Most employed registry participants are direct service professionals; across all registries, the percent was 84.0%.

Figure 23. Number of Total Employed Participants and Number of Employed Direct Service Professionals

	AZ	CT	FL	IL	ME	MN	MO	MT	NV	NY	OH	OK	WI	WV
■ All employed registry participants	20,272	18,205	4,783	91,105	3,655	16,847	8,269	3,749	8,577	23,580	87,675	20,348	22,648	7,838
■ Employed direct service registry participants	15,546	17,750	3,674	82,760	3,655	16,678	6,874	3,698	5,880	20,896	57,327	19,501	22,347	6,922
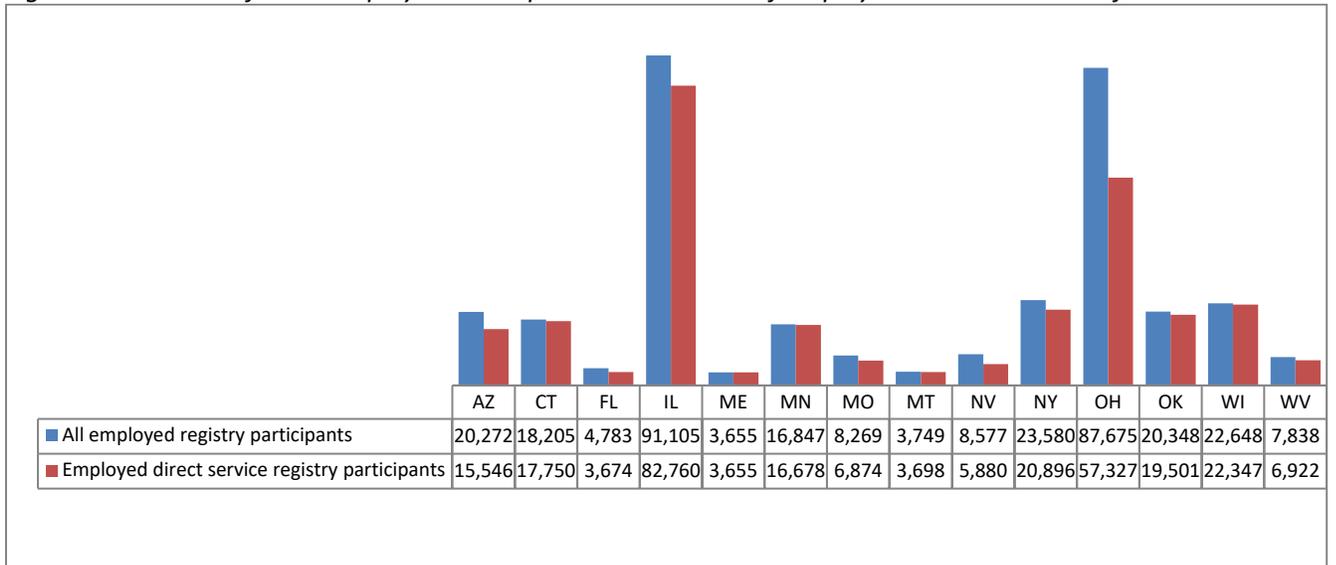
Note. The Ohio registry has significant numbers of participants whose direct service cannot be determined, which explains the larger drop-off from all employed participants to employed direct service participants.

Table 4. Characteristics of Employed Registry Participants by Major Role

	Center-based administrator	Center-based lead teacher	Center-based assistant teacher	Center-based other role***	Family child care owner	Family child care lead teacher	Family child care assistant teacher	Family child care other role	Other program administrator	Other program lead teacher	Other program assistant teacher	Other program other role***
Total *n* across registries	29,963	120,255	91,710	39,306	19,105	2,808	6,596	15,843	1,459	2,878	2,609	709
% female	94.6%	97.4%	96.5%	91.6%	96.5%	97.8%	81.1%	84.2%	92.4%	94.1%	94.5%	93.1%
Race/ ethnicity*	66% White 17% Black 10% Hispanic	62% White 16% Black 14% Hispanic	54% White 20% Hispanic 17% Black	58% White 20% Black 15% Hispanic	42% White 35% Black 19% Hispanic	82% White 7% Black 4% Hispanic	35% Black 32% White 27% Hispanic	60% Black 24% White 12% Hispanic	69% White 15% Black 10% Hispanic	66% White 14% Hispanic 12% Black	52% White 28% Hispanic 9% Black	52% White 22% Hispanic 10% Black
Median age	43.0 (*n* = 29,686)	34.0 (*n* = 119,111)	29.0 (*n* = 90,102)	32.0 (*n* = 39,046)	49.0 (*n* = 18,801)	42.0 (*n* = 2,803)	36.0 (*n* = 6,301)	48.0 (*n* = 15,766)	43.0 (*n* = 1,438)	36.0 (*n* = 2,836)	32.0 (*n* = 2,505)	31.0 (*n* = 708)
Median years in field	10.2 (*n* = 20,513)	4.1 (*n* = 87,764)	2.3 (*n* = 63,792)	2.2 (*n* = 27,406)	9.0 (*n* = 10,600)	8.7 (*n* = 2,764)	3.3 (*n* = 1,293)	2.7 (*n* = 876)	6.5 (*n* = 1,179)	3.6 (*n* = 2,624)	2.4 (*n* = 2,460)	3.2 (*n* = 631)
Median hourly wage	$16.25 (*n* = 10,456)	$12.50 (*n* = 52,907)	$11.00 (*n* = 42,461)	$11.00 (*n* = 12,861)	**	**	$10.00 (*n* = 3,131)	$16.00 (*n* = 3,632)	$15.00 (*n* = 748)	$13.00 (*n* = 1,701)	$11.00 (*n* = 2,033)	$9.00 (*n* = 502)
Highest level of education*	38% Bachelor's 24% HS diploma	39% HS diploma 31% Bachelor's	68% HS diploma 15% Bachelor's	56% HS diploma 20% Bachelor's	54% HS diploma 22% Associate's	55% HS diploma 21% Bachelor's	65% HS diploma 14% Associate's	40% HS diploma 20% Bachelor's	44% HS diploma 23% Bachelor's	34% HS diploma 30% Master's	57% HS diploma 18% Bachelor's	33% Bachelor's 29% Master's
Median training hours in 2017	12.00 (*n* = 22,186)	10.00 (*n* = 85,894)	8.00 (*n* = 51,682)	7.00 (*n* = 20,262)	12.00 (*n* = 13,370)	18.00 (*n* = 2,627)	10.00 (*n* = 3,028)	10.00 (*n* = 1,657)	8.63 (*n* = 1,222)	3.00 (*n* = 2,295)	1.50 (*n* = 1,757)	2.00 (*n* = 525)

*Only top categories provided.
** Median hourly wages for family child care providers and FCC lead teachers are not included in this report.
***"Other roles" include such titles as bookkeeper, receptionist, custodian, and bus driver.
Note. N's differ across variables due to missing data (not all registries gather data on all variables).

Gender, Race/Ethnicity, and Age

The majority of participants across all roles were female and White. However, the proportion of nonminority participants varied among roles. Two-thirds of center-based administrators (66%) and more than three-fifths (62%) of lead teachers were White, compared to 42% of family child care (FCC) owners and 32% of FCC assistant teachers. FCC assistant teachers showed diverse amount of portion of identifying as Black with 29% and 24% as Hispanic. The majority of participants in "other program" roles were White.
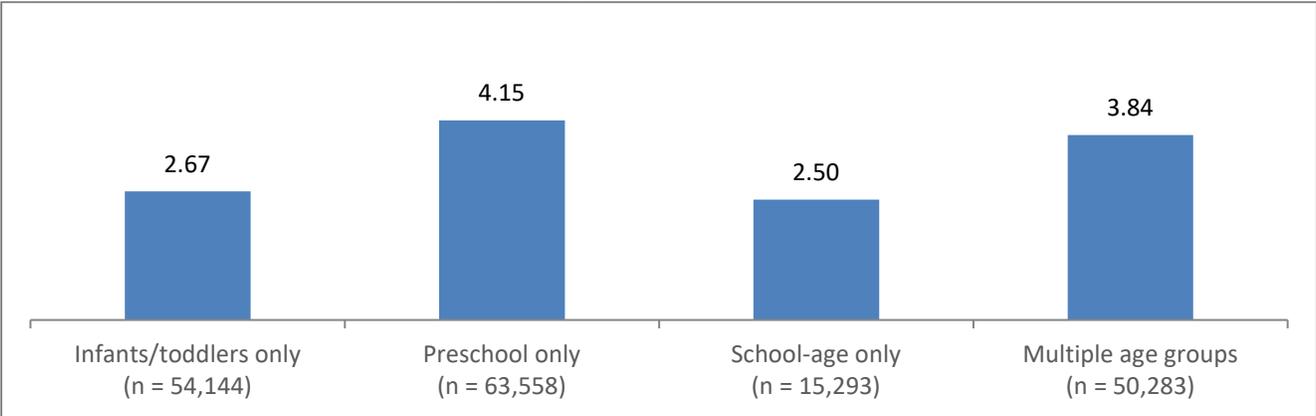
With respect to median age, center-based administrators tended to be older than center-based lead and assistant teachers. The median age for participants in other program roles followed the trend of center-based and family child care programs: administrators were older than lead and assistant teachers. The median ages for FCC participants were higher than their counterparts in centers and other programs.

Median Years in the Field

Ten of the 14 registries collect participants' time in the field (Arizona, Connecticut, Maine, Minnesota, Montana, Nevada, New York, Ohio, Oklahoma, and Wisconsin). As a time-related variable, this attribute was highly correlated with age. Accordingly, those roles characterized by older median ages also reflected higher median years of experience. Center administrators reported being in the field more than twice as long (10.2 years) as center lead teachers (4.1 years), and more than four times as long as center-based assistant teachers (2.3 years). Similarly, FCC owners had more than twice the median years of experience (9.0 years) as FCC assistant teachers (3.3 years).

Median years in the field differed significantly based on age group served (see Figure 24). Each median was statistically significantly different from the other at $p < .001$. Participants serving preschoolers only had the highest median (4.15), followed by those serving multiple age groups (3.84). For these registries, the most experienced professionals are serving preschoolers and multiple age groups, which has implications for professional development and quality improvement endeavors.

Figure 24. Median Years in the Field by Age Group Served

2.67	4.15	2.50	3.84
Infants/toddlers only (n = 54,144)	Preschool only (n = 63,558)	School-age only (n = 15,293)	Multiple age groups (n = 50,283)

Median Hourly Wage

Within center-based staff, administrators earned more than lead teachers ($16.25 vs. $12.50), who in turn earned more than assistant teachers ($11.00). FCC lead teachers made about the same as FCC assistant teachers. For other program participants, administrators also out earned lead teachers ($15.00 vs. $13.00 an hour). Wage differences by education and role will be discussed more completely in a later section. All registries except for Maine and Oklahoma collected wage data for this dataset.

Highest Level of Education

For center-based participants, educational attainment was linked to role, with administrators most likely to have a bachelor's degree (57%) compared to lead (40%) and assistant teachers (17%). A high school diploma was the most likely highest level of education for all family child care roles. For participants in other programs, a high school diploma was the most likely highest level of education, except for other program other role participants, who were most likely to have a bachelor's degree.

Median Number of 2017 Training Hours

All registries except for Connecticut and West Virginia reported participant professional development (training clock hours) for 2017. These registries provided all of the training documentation that they received on an individual; however, it should be noted that individuals might receive additional training that is not documented by the registry. Only participants who had an employment start date of January 1, 2017, or earlier were included in these analyses.

As shown in Table 4, FCC lead teachers had the highest median number of training hours (18.00), followed by center administrators and FCC owners (12.00). Center lead teachers, FCC assistant teachers, and FCC other role reported 10.00 median hours, followed by other program administrators (8.63), center assistant teachers (8.00), and center other role (7.00). Other program lead teachers, other program assistant teachers, and other program other role participants reported very few training hours.

Where Professionals Work

Another important demographic factor to consider, within and across registries, is the extent to which programs are located in both urban and rural areas. The 2013 Rural-Urban Continuum Codes (also known as Beale Codes) were used to classify where programs are located. Table 5 gives a breakdown of Beale Codes and their relation to the metro and non-metro categories. As shown in Figure 25, 87% of participants in this dataset worked in programs in metropolitan areas, with the largest proportion, not surprisingly, coming from the counties that compose the most populous metropolitan areas.

Beale Code	Description
Metro counties	
1	Counties in metro areas of 1 million population or more
2	Counties in metro areas of 250,000 to 1 million population
3	Counties in metro areas of fewer than 250,000 population
Non-metro counties	
4	Urban population of 20,000 or more, adjacent to a metro area
5	Urban population of 20,000 or more, not adjacent to a metro area
6	Urban population of 2,500 to 19,999, adjacent to a metro area
7	Urban population of 2,500 to 19,999, not adjacent to a metro area

8	Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area

Figure 25. Registry Participant Program by Beale Code
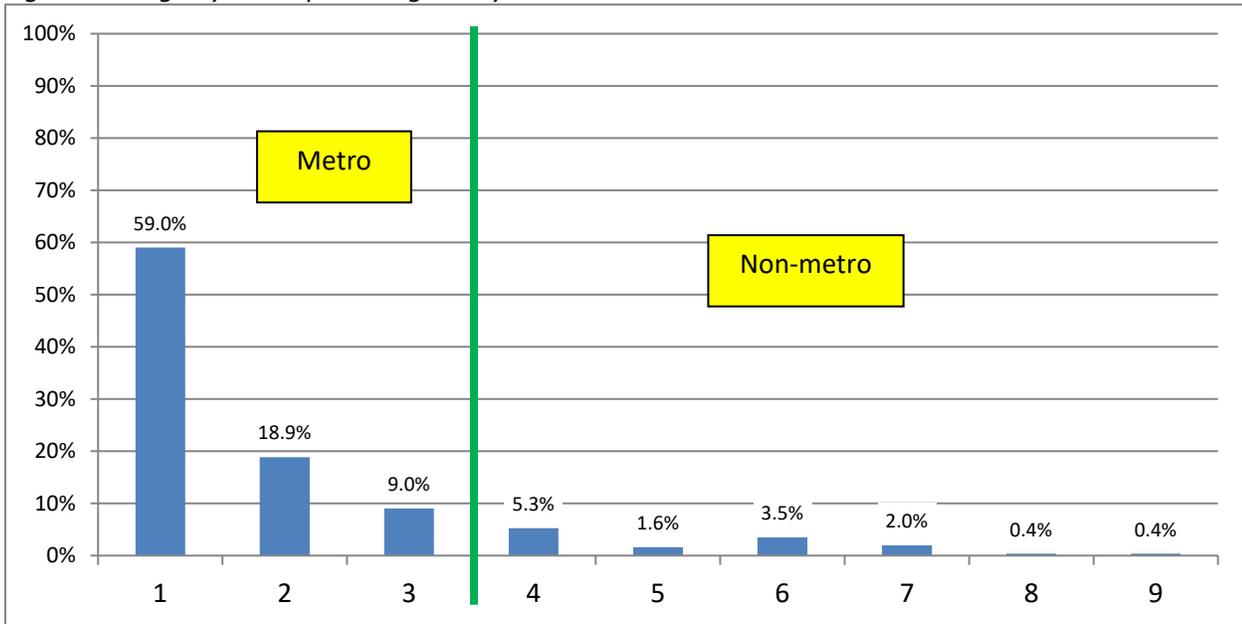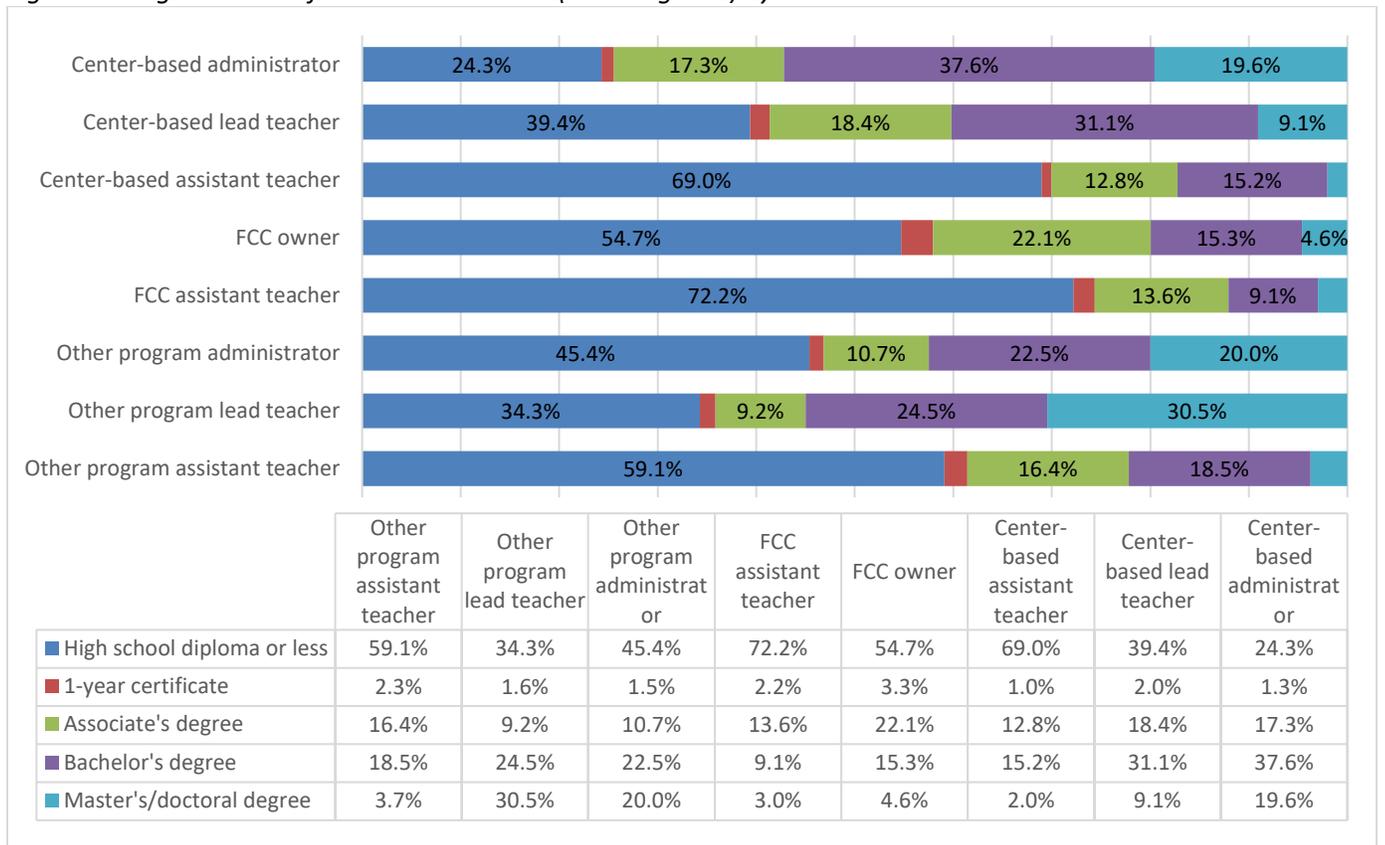

Participant Primary Language

Registries reported on the primary language spoken by employed participants. Of the 326,250 participants who provided data for this field, 90.3% of them indicated English as their primary language. The second most reported primary language was Spanish (3.2%). The third most reported primary language was Swahili (2.4%). The proportions for other languages were as follows: other language not listed, 0.2%; Polish, 0.2%; Chinese, 0.1%; Russian, 0.1%, Urdu, 0.1%, Arabic, 0.2%; French, 0.1%; Hindi, 0.1%; and Tagalog, 0.1%.

Highest Level of Education by Role

Figure 26 shows the highest level of formal education attained by registry participants by role. All registries contributed data for education level of participants. For all registries, the full education of participants is requested and all data they receive are entered, but it should be noted that some education records may not be complete—i.e., they only reflect the education level as reported by the participant, with the possibility that the highest level and early childhood-specific qualifications have not been reported.

As expected, center-based administrators tended to have more education than center-based lead teachers; over half (57%) of administrators had at least a bachelor's degree, whereas only 40% of lead teachers had the same level of education. For center-based assistant teachers, more than two-thirds (69%) had a high school diploma or less, and only 17% had a bachelor's degree or more. For FCC owners, 55% reported having a high school diploma or less, and only 20% reporting having bachelor's degree.
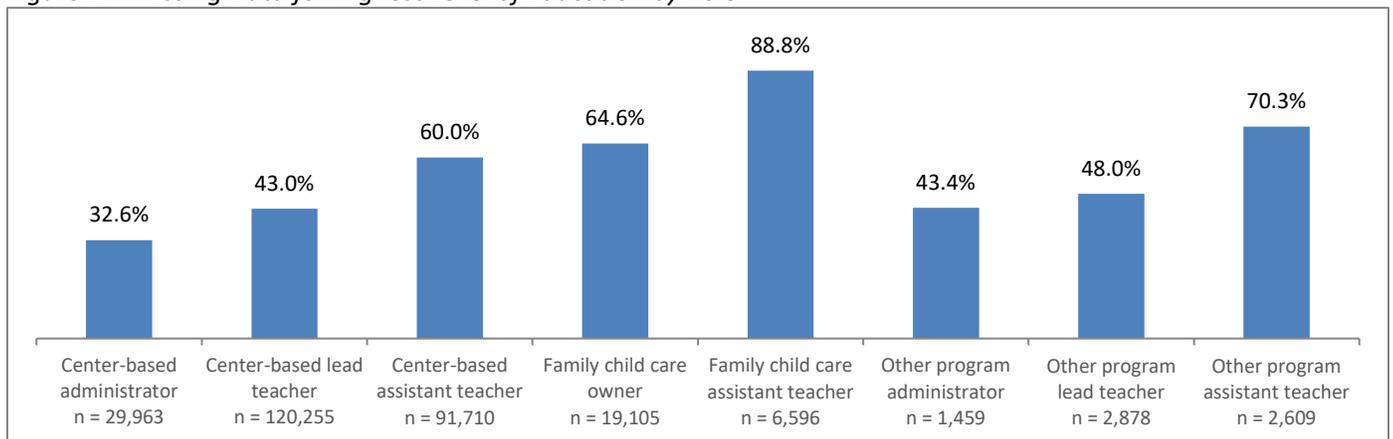
Figure 26. Highest Level of Education Attained (All Categories) by Role

	Other program assistant teacher	Other program lead teacher	Other program administrator	FCC assistant teacher	FCC owner	Center-based assistant teacher	Center-based lead teacher	Center-based administrator
High school diploma or less	59.1%	34.3%	45.4%	72.2%	54.7%	69.0%	39.4%	24.3%
1-year certificate	2.3%	1.6%	1.5%	2.2%	3.3%	1.0%	2.0%	1.3%
Associate's degree	16.4%	9.2%	10.7%	13.6%	22.1%	12.8%	18.4%	17.3%
Bachelor's degree	18.5%	24.5%	22.5%	9.1%	15.3%	15.2%	31.1%	37.6%
Master's/doctoral degree	3.7%	30.5%	20.0%	3.0%	4.6%	2.0%	9.1%	19.6%

Note: "High school diploma or less" includes participants who have "Some College." In addition, one-year certificates have differing requirements depending on awarding institution.

However, it should be noted educational attainment was missing for over half (54%) of the professionals in these registries. An even greater concern is the likelihood that the missing education data were not random, which would limit the generalizability of the results of these analyses. As shown in Figure 27, center-based administrators, center lead teachers, other program administrators, and other program lead teachers had relatively less missing data compared to center-based assistant teachers and FCC participants.

Figure 27. Missing Data for Highest Level of Education by Role

| Role	Missing %
Center-based administrator (n = 29,963)	32.6%
Center-based lead teacher (n = 120,255)	43.0%
Center-based assistant teacher (n = 91,710)	60.0%
Family child care owner (n = 19,105)	64.6%
Family child care assistant teacher (n = 6,596)	88.8%
Other program administrator (n = 1,459)	43.4%
Other program lead teacher (n = 2,878)	48.0%
Other program assistant teacher (n = 2,609)	70.3%

"Some College" as an Education Category

Another educational trend that the Alliance has been monitoring over the years is the frequency of professionals whose highest education level is "Some College"—that is, those who have earned college credits but have not earned a post-secondary degree. The results reported here are based on data from fewer registries since not all track "Some College" and the number of college credits professionals have completed. In registries that do not track "Some College," those with college credits fall into the high school diploma or less category with respect to highest level of education.

Figure 28 displays the percentage of professionals, by role, who indicated their highest level of education was "Some College." Other program administrators were most likely to report "Some College" as their highest level of education (17%), followed by FCC lead teachers (16%), FCC owners (14%), other program lead teachers (12%), and center lead teachers (12%). These findings demonstrate that a significant proportion of participants in all roles have some college credits even though they have not finished a degree.
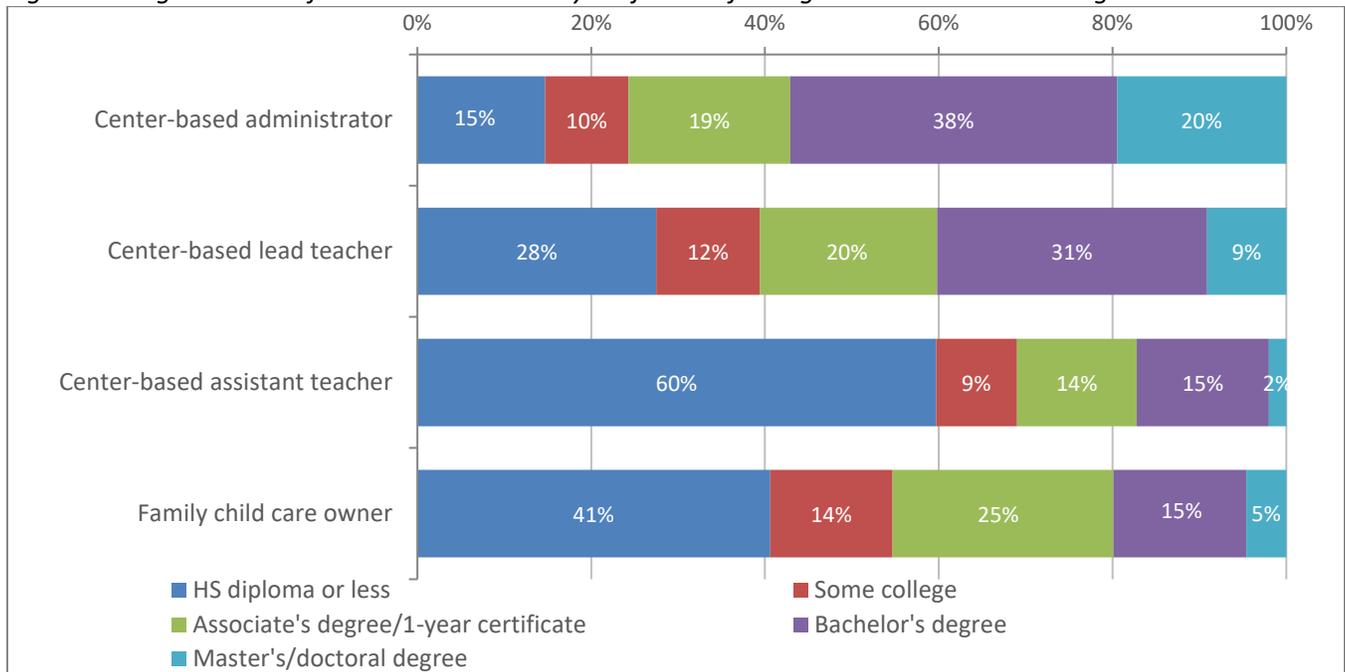
Figure 28. Professionals with "Some College" as Highest Education Level by Role
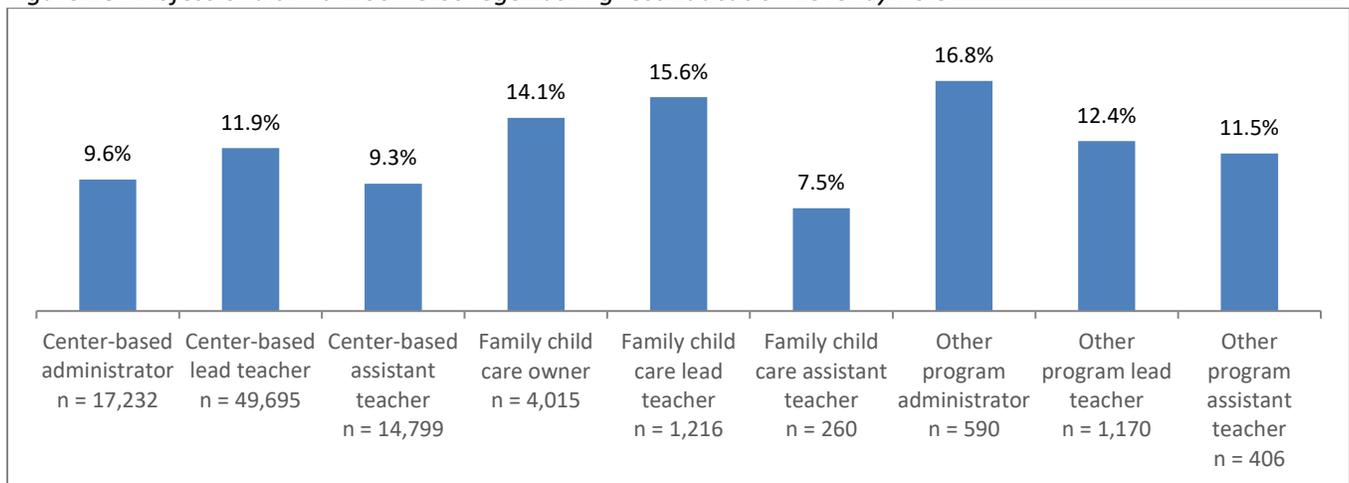
Note. Results are based on data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Oklahoma, Wisconsin, and West Virginia registries.

Figure 29 shows education level by major role for those registries that track "Some College." Although "Some College" is not the most likely education category for the roles shown, it does account for a significant percentage.
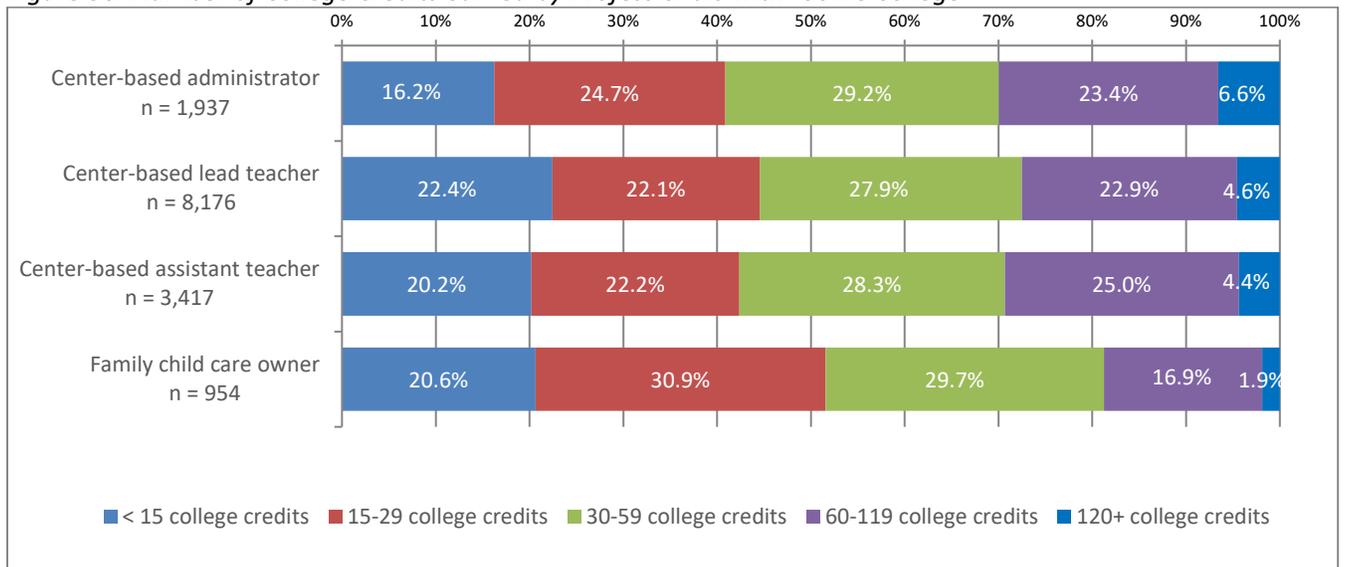
Figure 29. Highest Level of Education Attained by Major Role for Registries that Gather College Credits

Center-based administrator: HS diploma or less 15%, Some college 10%, Associate's degree/1-year certificate 19%, Bachelor's degree 38%, Master's/doctoral degree 20%

Center-based lead teacher: HS diploma or less 28%, Some college 12%, Associate's degree/1-year certificate 20%, Bachelor's degree 31%, Master's/doctoral degree 9%

Center-based assistant teacher: HS diploma or less 60%, Some college 9%, Associate's degree/1-year certificate 14%, Bachelor's degree 15%, Master's/doctoral degree 2%

Family child care owner: HS diploma or less 41%, Some college 14%, Associate's degree/1-year certificate 25%, Bachelor's degree 15%, Master's/doctoral degree 5%

Note. Results are based on data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Oklahoma, Wisconsin, and West Virginia registries.

In addition, as shown in Figure 30, the majority of center-based staff with "Some College" as their highest educational attainment had at least 30 college credits, with center administrators at 59%, center leads at 56%, and center assistants at 58%. For FCC owners/administrators, the percentage was 48% with 30 credits or more. Many of these professionals are in the process of earning a formal degree. Because so many professionals across roles have significant numbers of college credits, the ability of registries to track college credits and not just highest educational attainment is an important role that registries can play in accurately portraying the education status of the workforce.

Figure 30. Number of College Credits earned by Professionals with "Some College"

Center-based administrator n = 1,937: < 15 college credits 16.2%, 15-29 college credits 24.7%, 30-59 college credits 29.2%, 60-119 college credits 23.4%, 120+ college credits 6.6%

Center-based lead teacher n = 8,176: < 15 college credits 22.4%, 15-29 college credits 22.1%, 30-59 college credits 27.9%, 60-119 college credits 22.9%, 120+ college credits 4.6%

Center-based assistant teacher n = 3,417: < 15 college credits 20.2%, 15-29 college credits 22.2%, 30-59 college credits 28.3%, 60-119 college credits 25.0%, 120+ college credits 4.4%

Family child care owner n = 954: < 15 college credits 20.6%, 15-29 college credits 30.9%, 30-59 college credits 29.7%, 60-119 college credits 16.9%, 120+ college credits 1.9%
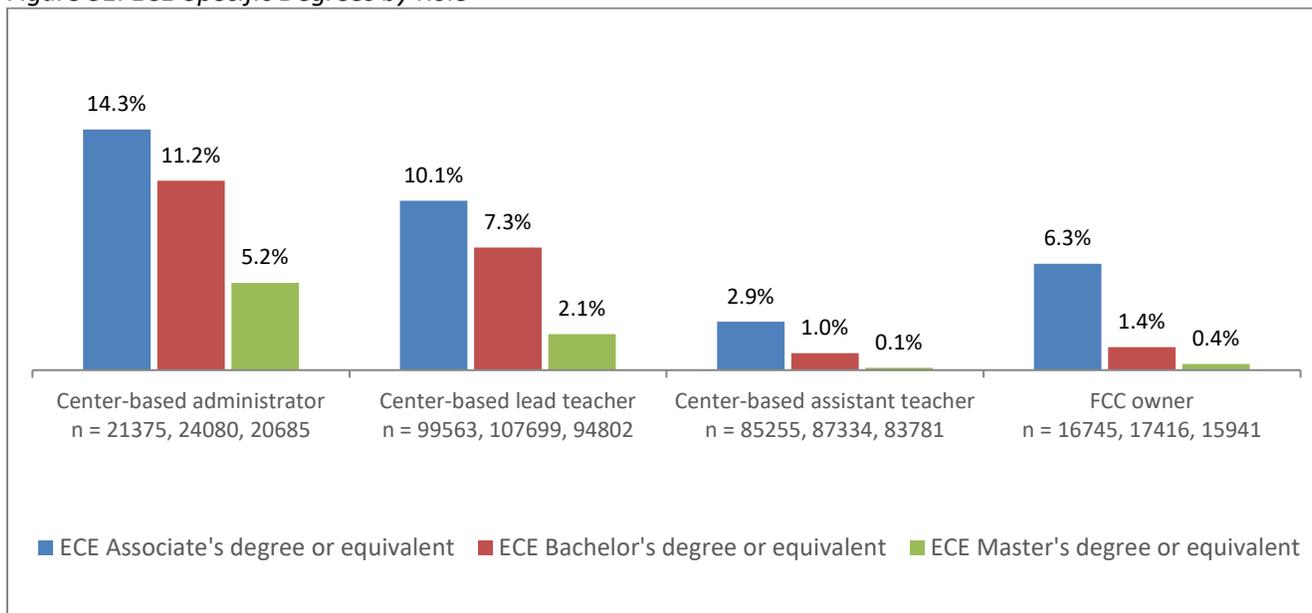
Note. Results are based on data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Oklahoma, Wisconsin, and West Virginia registries.

Education Specific to Early Childhood Education

The National Workforce Registry Alliance encourages registries to gather educational data regarding degrees specific to early childhood education (ECE). Because many registries only code these degrees when submitted by participants, they do not have definitive information on whether the participant has an ECE-specific degree; such cases were treated as missing for these analyses.[3] Due to these issues, the true prevalence of ECE-specific degrees in these registries is not known.

Early childhood professionals differed in the amount of ECE-specific degrees they obtained, as shown in Figure 31. It should be noted that about three-quarters of participants were missing data about whether their degrees were ECE-specific. Based on the data available, relatively few professionals, regardless of role, reported having educational qualifications that were related specifically to early childhood education/development. Although over half (57%) of center-based administrators had at least a bachelor's degree, only 17% had an ECE bachelor's degree or higher. The situation for lead teachers was similar; 40% had at least a bachelor's degree but only 9% reported an ECE bachelor's or higher. The attainment of ECE degrees for assistant teachers and FCC professionals was even lower. Among center-based assistant teachers, 17% had a bachelor's or higher, but only 1% obtained at least an ECE bachelor's degree. For FCC providers, the statistics were similar: 20% had at least a bachelor's degree but only 2% had at least an ECE bachelor's degree or higher.

Figure 31. ECE-Specific Degrees by Role

Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Maine, Minnesota, Montana, Nevada, New York, Ohio, Oklahoma, Wisconsin, and West Virginia registries.

As pointed out by Institute of Medicine and the National Research Council (2012), specific early childhood professional development, including higher education, that focuses on implementing defined evidence-based curricula, developing supportive teacher-child relationships, and providing appropriate child

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[3] It should be noted that many cases were coded as "no" for the specific degrees based on highest level of education. For example, if a participant had missing data for ECE-specific bachelor's degree but her highest level of education was an associate's degree, she was coded as "no" for having an ECE-specific bachelor's degree.

development knowledge, is the key to raising program quality and ensuring positive child outcomes. The report *Transforming the Workforce for Children Birth Through Age 8* (Institute of Medicine and National Research Council, 2015) goes even further by recommending that there be a multiyear transition toward all lead educators having a bachelor's degree with specialized knowledge and competencies in ECE. Registries can play a key role by helping inform state and local conversations around this recommendation, especially with data regarding the educational qualifications and ECE-specific coursework of the current workforce of lead teachers.

Child Development Associate Credential

The Child Development Associate (CDA) credential is the most widely recognized certification in early childhood education. It is based on a set of core competency standards designed to provide guidance to professionals in their work in the early care field. The original credential is valid for three years, after which it may be renewed every five years.

As shown in Figure 32, very few registry participants—only 3%—indicated that they held a current CDA. FCC owners and center lead teachers were most likely to have a current CDA.
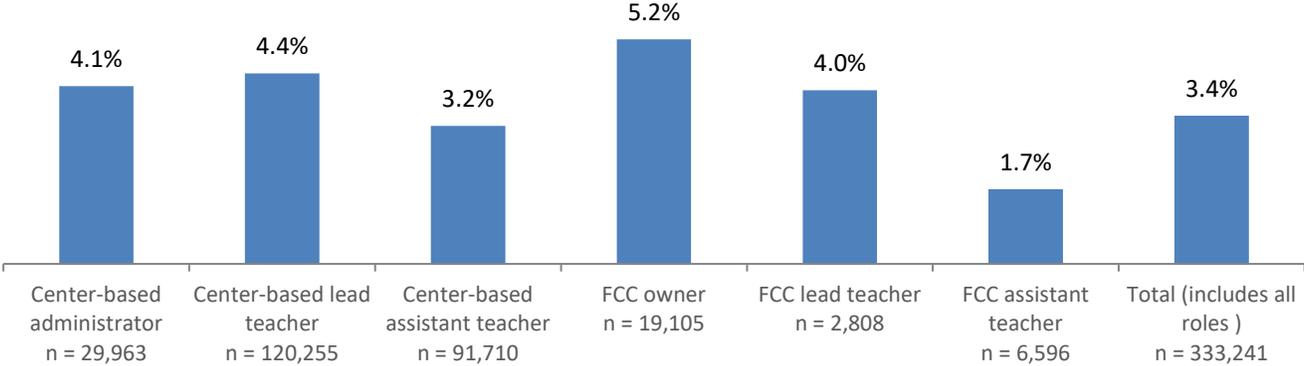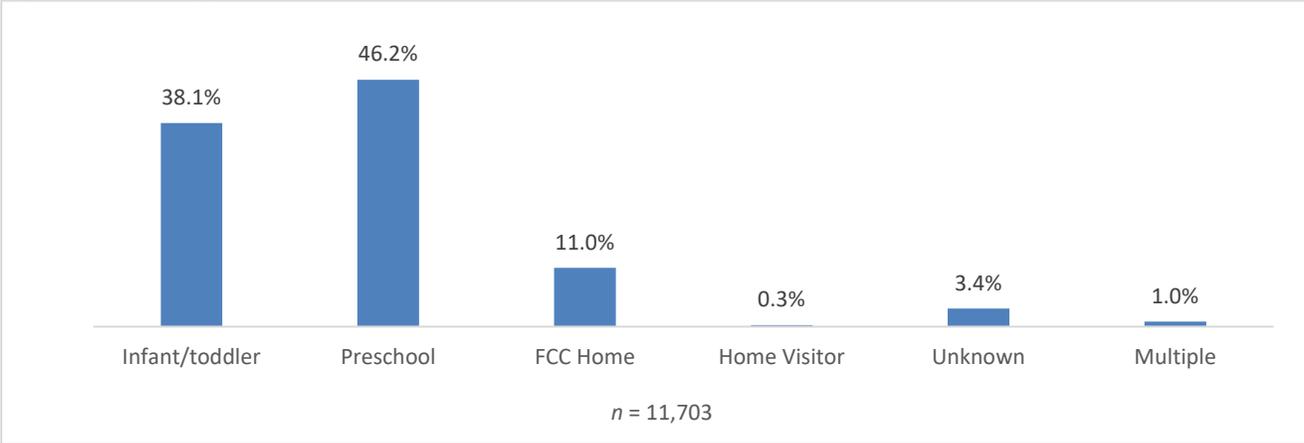
Figure 32. Current CDA Credential by Role

Figure 33 shows the type of CDA held by registry participants across all roles. The preschool CDA was the most widely held (46%), followed by the infant-toddler (38%), and the FCC home (11%).
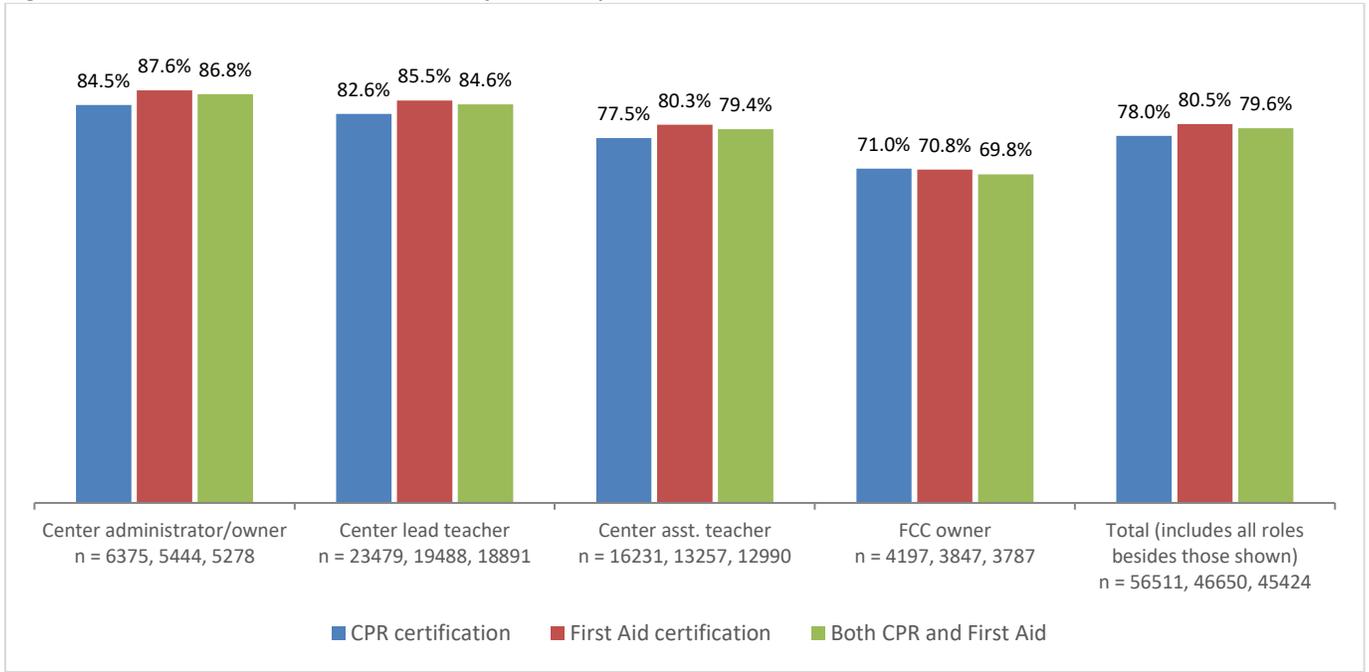
Figure 33. CDA Type across All Roles

CPR and First Aid Certifications

As shown in Figure 34, four in five professionals (80%) across all roles reported having both a current First Aid and CPR certification. Center-based staff were more likely to have these certifications compared to FCC owners.

*Figure 34. Current CPR and First Aid Certification by Role*

Note. Results are based on data from the Connecticut, Miami-Dade (FL), Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, West Virginia, and Wisconsin registries.

Center-Based Staff: Median Hourly Wage and Its Relationship to Demographic Characteristics

The low compensation of professionals in the early childhood field has long been noted as one of the factors that has interfered with the recruitment and retention of talented professionals.

Figure 35. Median Hourly Wage for Center-based Professionals
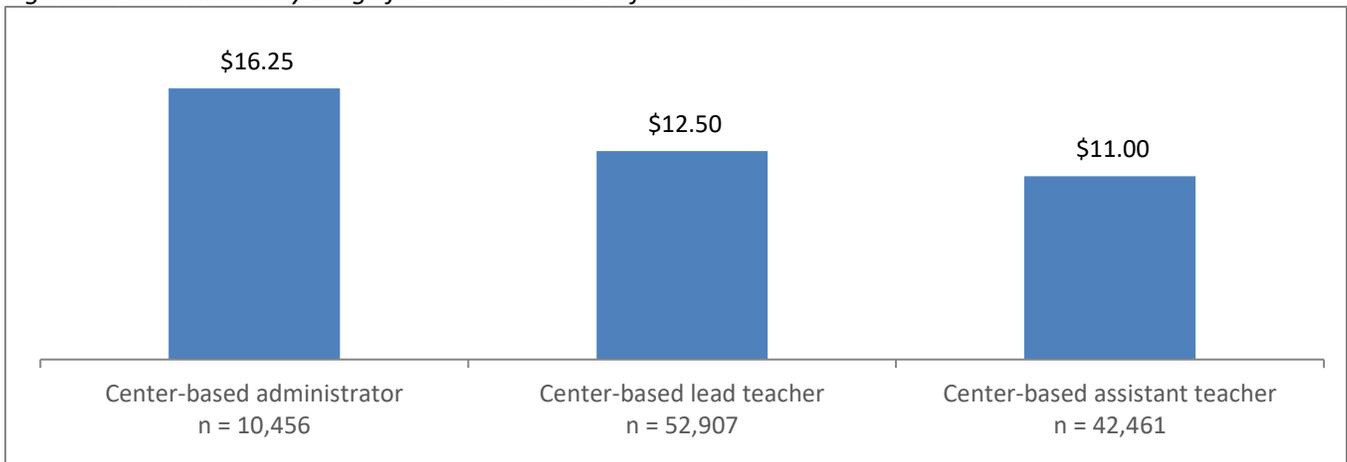
Note. Results are based on data from all registries, except for Oklahoma and Maine.

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Figure 35 shows median hourly wages by role for center-based participants. As expected, center-based administrators had the highest median hourly wage at $16.25, with lead teachers earning $12.50 an hour and assistant teachers $11.00 an hour.

Based on the most recent data from the Bureau of Labor Statistics (BLS; May 2018), *education administrators of preschools and child care centers* had a median hourly wage of $23.05, which is higher than the $16.25 found for center-based administrators in this dataset. For the BLS category *preschool teacher (not special education)*, the median wage was $14.32, which is also higher than the $12.50 found in this dataset for center lead teachers, which is the role that most closely corresponds to the BLS category. Finally, the BLS category *child care worker*, the median wage was $10.72, which is close to the median wage of center assistant teachers ($11.00), the role that is most similar in this dataset.

In comparison to kindergarten teachers, early childhood professionals who held at least a bachelor's degree earn significantly less. The median wage for kindergarten teachers was $28.10 (calculated by taking median annual salary $58,370 and dividing by 2,080 using May 2018 BLS figures). In this dataset, center-based lead teachers with a bachelor's degree earned $14.73 an hour (see below), about half the national median wage for kindergarten teachers.

It should be noted that 56% of participants across all roles had missing wage data. For center-based staff, 53% were missing wage data.

Center-Based Staff: Median Hourly Wage and Education

In general, having more education was associated with higher earnings, especially for center-based administrators and lead teachers (see Figure 36). For assistant teachers, the effect of additional education on wages was most noticeable for those with more than a high school diploma. These data suggest that center assistant teachers with a bachelor's degree or more do not see many gains in their wage status.

*Figure 36. Median Hourly Wage for Center-Based Professionals by Education Attainment*
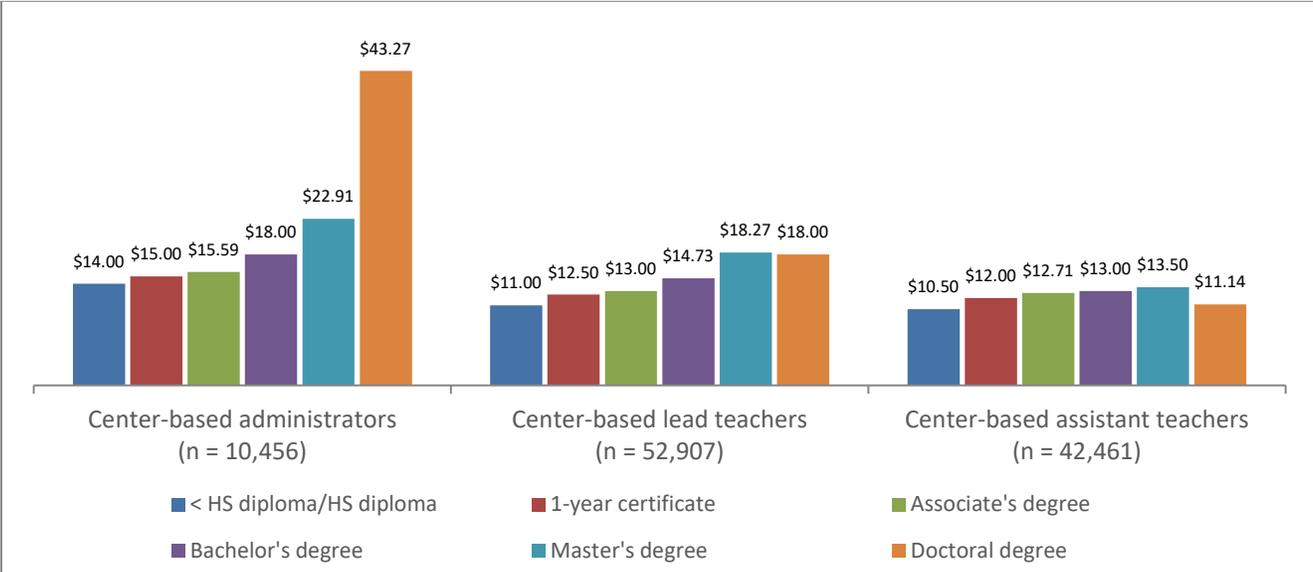
Note. Results are based on data from all of registries, except for Oklahoma and Maine.

Center-Based Staff: Median Hourly Wage, Education Level, and Age Group Taught

Figure 37 shows median hourly wages by age group taught for center lead and assistant teachers. For lead teachers, age group taught was related to hourly wages. Those who work with preschoolers earned $2 more an hour than their peers who work with infants/toddlers and $3 more than those who work with multiple age groups. The same pattern is evident with assistant teachers but was less pronounced. For center staff who work with multiple age groups, there was no difference in median hourly wage between lead and assistant teachers.
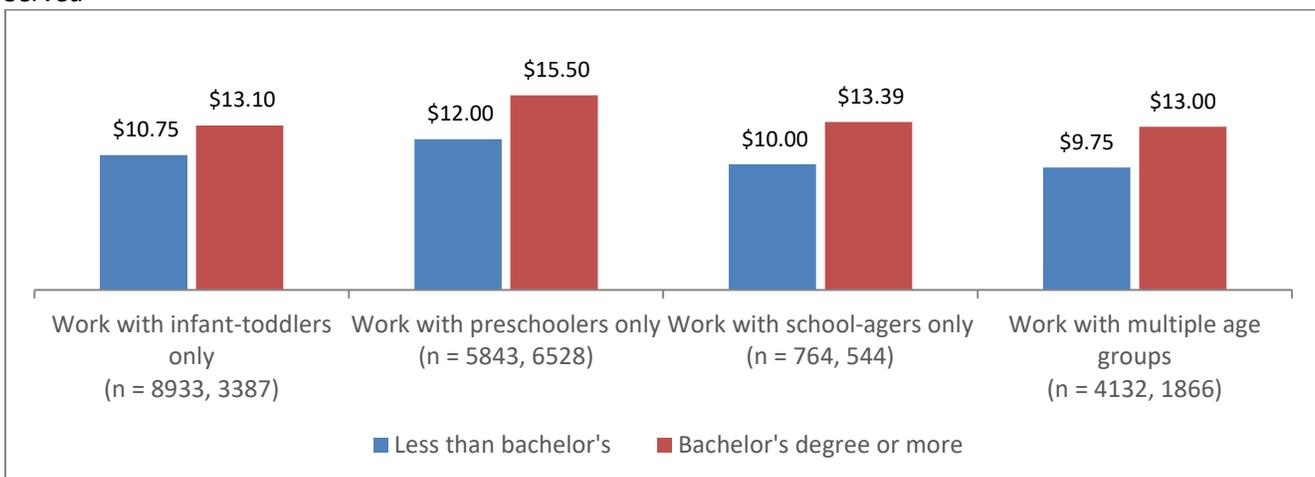
Figure 37. Center-Based Teachers: Median Hourly Wage by Age Group Served
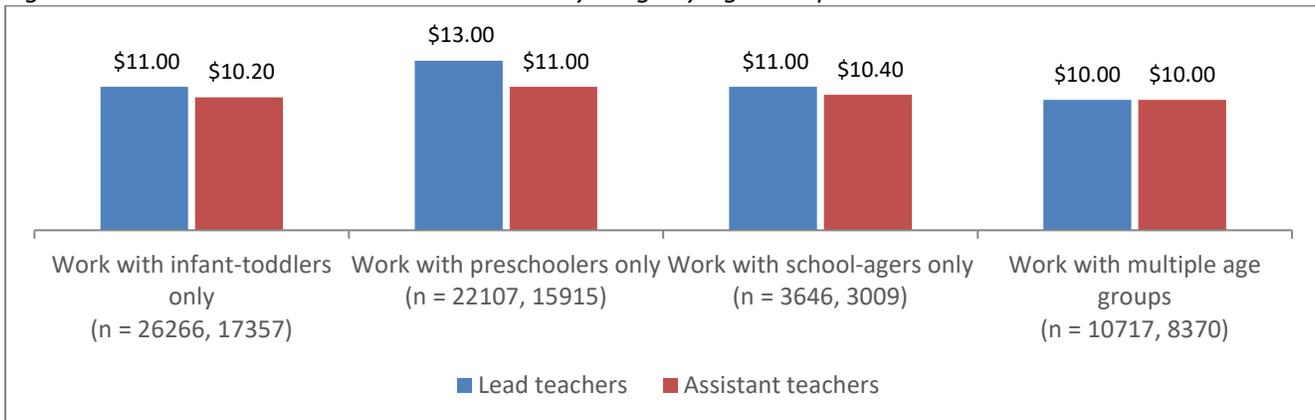
Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, Nevada, New York, Ohio, West Virginia, and Wisconsin registries.

Figures 38 and 39 show median hourly wages by age group served and bachelor degree attainment for center lead and assistant teachers. Center lead teachers with bachelor's degrees on average earned more than center leads without bachelor's degrees across age groups. The amount ranged from $2.35 for those working with infant-toddlers to $3.50 for those working with preschoolers. Center assistant teachers with bachelor's degrees also earned more than those without the degree, but the differences were smaller than those found for lead teachers from $1.00 for working with infant-toddlers to $2.65 for who working with school-agers.

Figure 38. Center-Based Lead Teachers: Median Hourly Wage by Bachelor Degree Attainment and Age Group Served

Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, Nevada, New York, Ohio, West Virginia, and Wisconsin registries.

Figure 39. Center-Based Assistant Teachers: Median Hourly Wage by Bachelor Degree Attainment and Age Group Served
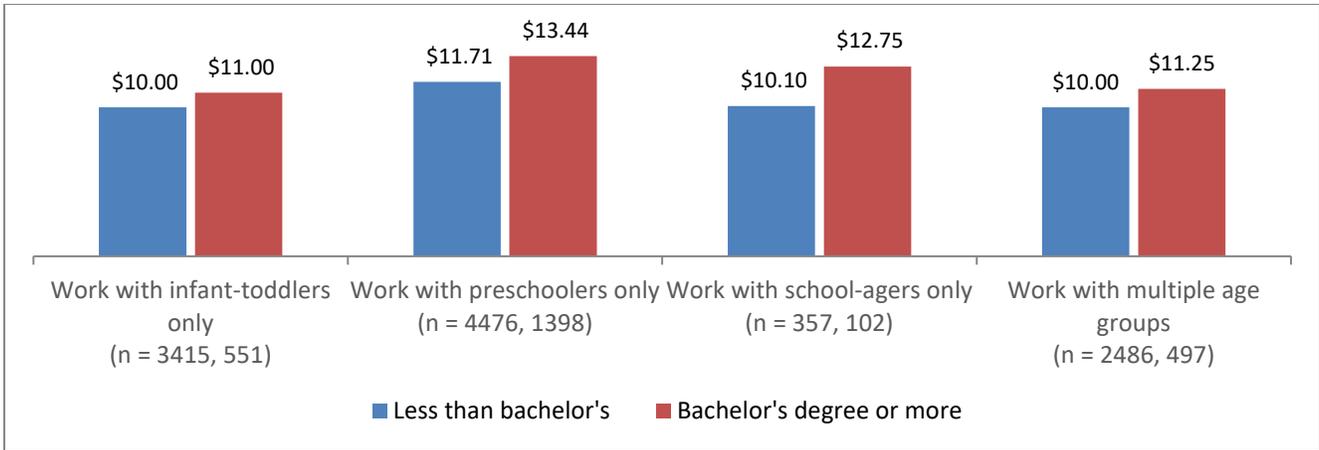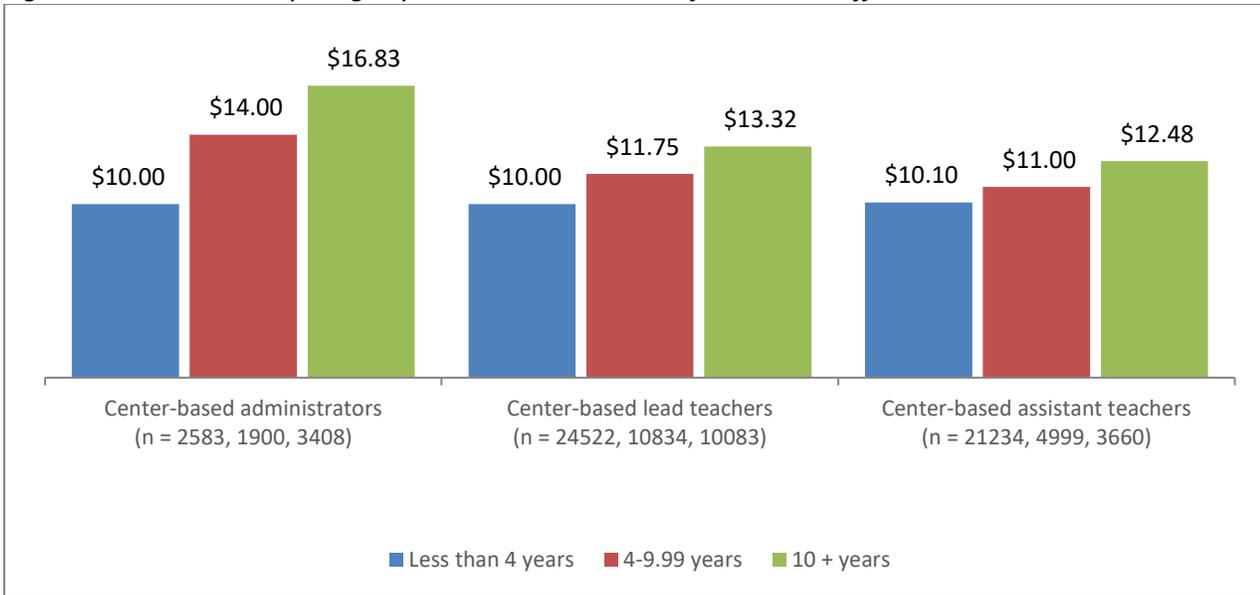

Note. Results are based on data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, Nevada, New York, Ohio, West Virginia, and Wisconsin registries.

Center-Based Staff: Median Hourly Wage and Years in the Field

Figure 40 shows that experience in the field tended to be related to median hourly wage for center staff. Across all roles, the median hourly wage increased with greater field-related experience. Although wages were generally low, this trend highlights the fact that remaining in the field, with the potential of earning additional credentials, can result in higher wages.

Figure 40. Median Hourly Wage by Role and Years in Field for Center Staff

Note. Results are based on data from the Arizona, Connecticut, Minnesota, Montana, Nevada, New York, Ohio, and Wisconsin registries.

Professional Development: Training Hours

Figure 45 shows reported 2017 training hours by category for those participants who were employed for all of 2017. FCC lead teachers were most likely to have more than 10 hours (85%), followed by FCC owners (61%), center administrators (58%), center lead teachers (54%), and other program administrators (53%). Other

program assistant teachers were the least likely to have more than 10 hours (27%), followed by other program lead teachers (34%), and center assistant teachers (51%).

Figure 45. Total Training Hour Categories by Major Roles
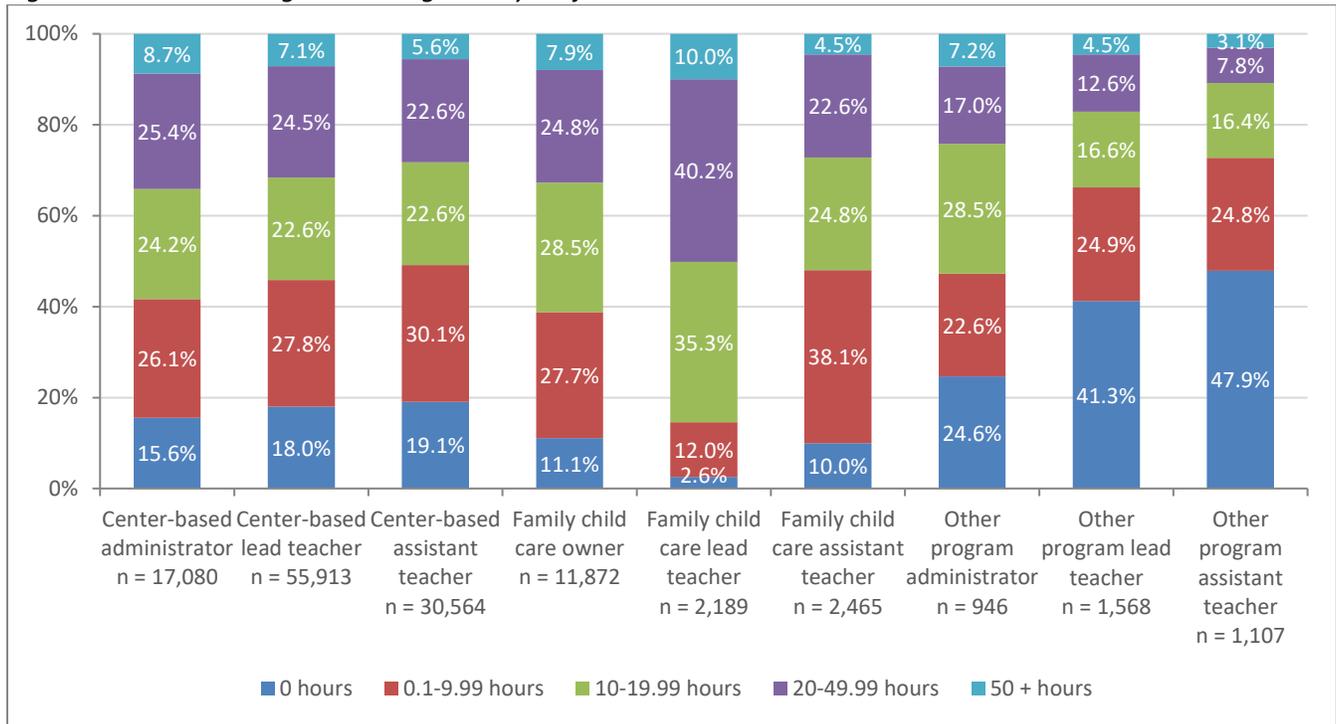

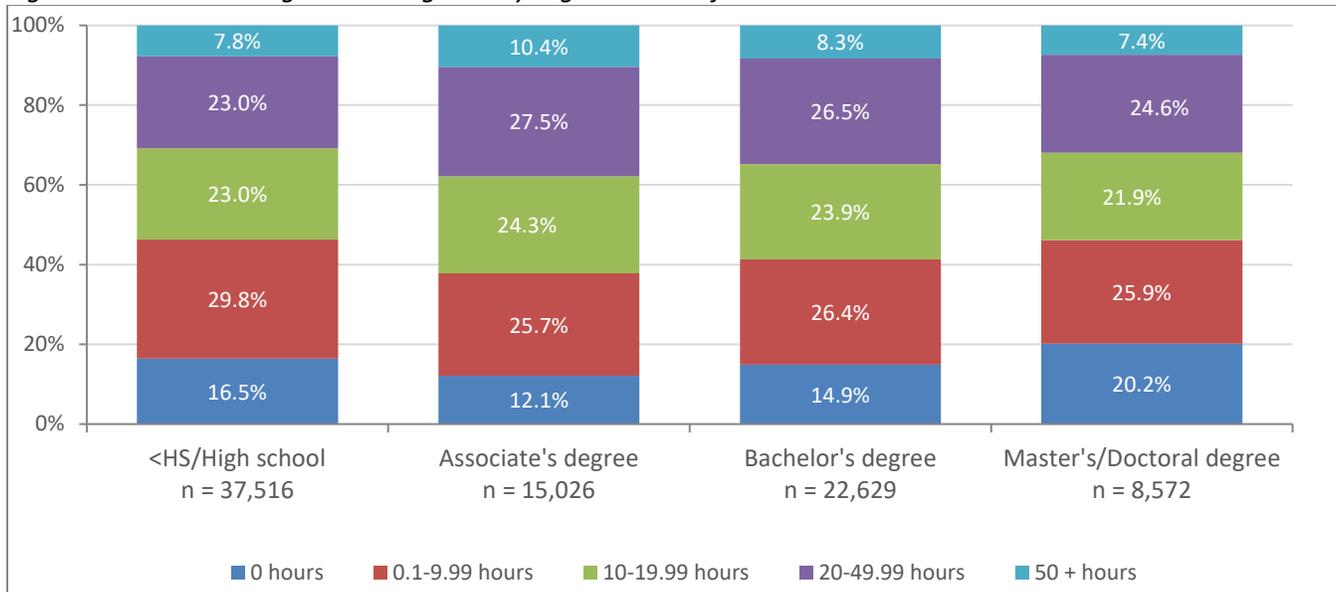*Figure 46. Total Training Hour Categories by Highest Level of Education*

Figure 46 shows total clock hour category by educational attainment. Participants an associate's degree were most likely to report at least 20 training hours (38%), followed by those with bachelor's degrees (35%) and those with post-bachelor's degrees (32%) among those who were with formal degrees. Of those participants in the lowest educational category (high school diploma or less), 31% completed at least 20 clock hours.

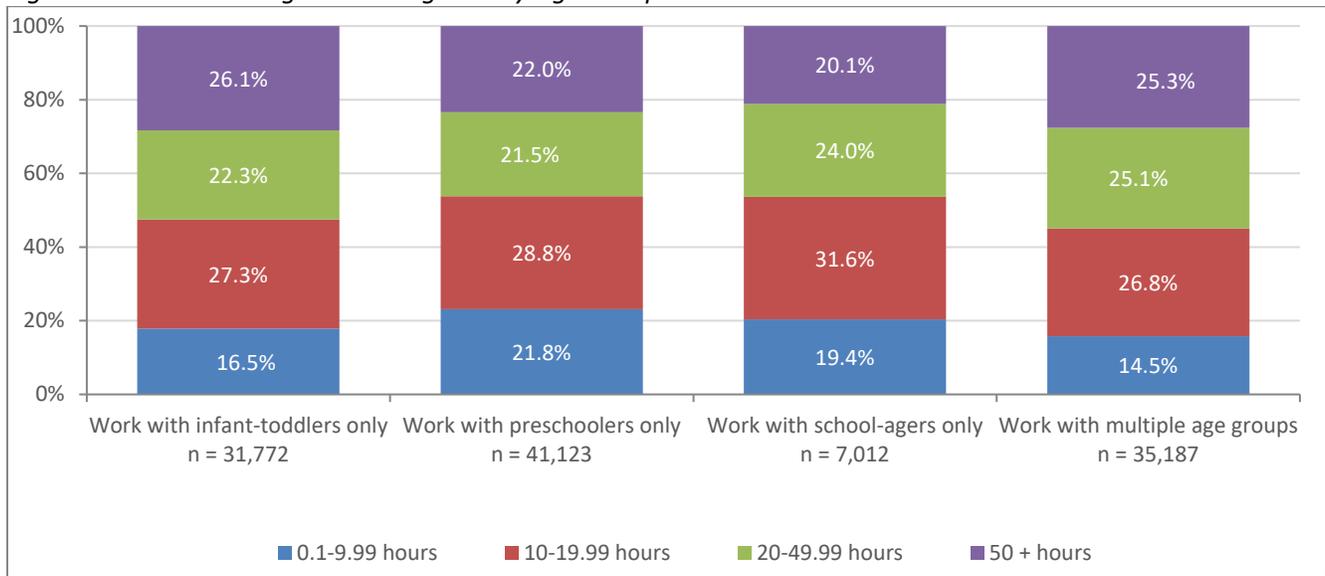*Figure 47. Total Training Hour Categories by Age Group Served*

Figure 47 shows training hour categories by age group served. Staff who work with multiple age groups were most likely to report at least 20 training hours (50%), followed by those working with infant-toddlers (48%), those working with school-agers (44%), and lastly those working with preschoolers (43%).

Source of Training Hours: Community–Based Training and College Credit Courses

This dataset is the first time that many registries—Arizona, Miami-Dade (FL), Illinois, Ohio, Oklahoma, Minnesota, Missouri, Montana, New York, and Wisconsin—coded participant training hours by source: whether they came from community-based opportunities or from completing college courses for credit. As shown in Table 7, for all participants with more than 0 training hours, the mean and median number of training hours from community-based training was larger than the mean and median for college coursework. For these participants, 98.4% received training from community-based opportunities and 8.6% from converted college credits, and 7.0% from both sources.

*Table 7. Descriptive Statistics for 2015 Training Hours by Source for All Participants with Some Training (*n = 50,620)

	Community-based training hours	Converted college credits in hours	Total training hours
Mean	19.6	10.3	30.3
Median	14.0	0	16.0
Minimum	0	0	0.3
Maximum	408.0	729.0	929.9

Note. Results are based on data from the Arizona, Miami-Dade (FL), Illinois, Ohio, Oklahoma, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin registries.

For all participants with valid training hour data, 92.6% of training hours came from community-based training and 7.4% from college coursework converted to clock hour data. Table 8 shows the percentage of training hours by source for all roles. Other program lead teachers had the highest percentage of training hours coming from college courses (9%), followed by center lead teachers (8.8%), center directors (7.8%), and FCC owners (7.0%).

Table 8. 2017 Training Hours by Source for All Roles

Role	Average percent of training hours from community-based trainings	Average percent of training hours from college coursework	N
Center administrator/owner	91.9%	8.1%	6,751
Center lead teacher	91.5%	8.5%	22057
Center assistant teacher	94.8%	5.2%	10,306
Center other role	94.0%	6.0%	3,039
FCC owner	90.6%	9.4%	3,060
FCC lead teacher	98.3%	1.7%	2,027
FCC assistant teacher	93.9%	6.1%	450
FCC other role	98.2%	1.8%	257
Other program administrator/owner	96.6%	3.4%	672
Other program lead teacher	96.4%	3.6%	914
Other program assistant teacher	97.3%	2.7%	552
Other program other role	98.9%	1.1%	82
Total	*92.9%*	*7.1%*	*50,167*

Note. Results are based on data from the Arizona, Miami-Dade (FL), Illinois, Ohio, Oklahoma, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin registries.

As shown in Figure 48, participants with less than a bachelor's degree had higher percentages of their training hours coming from college coursework than those with a bachelor's degree.

Figure 48. Percentage of Training Hours from College Courses by Educational Attainment
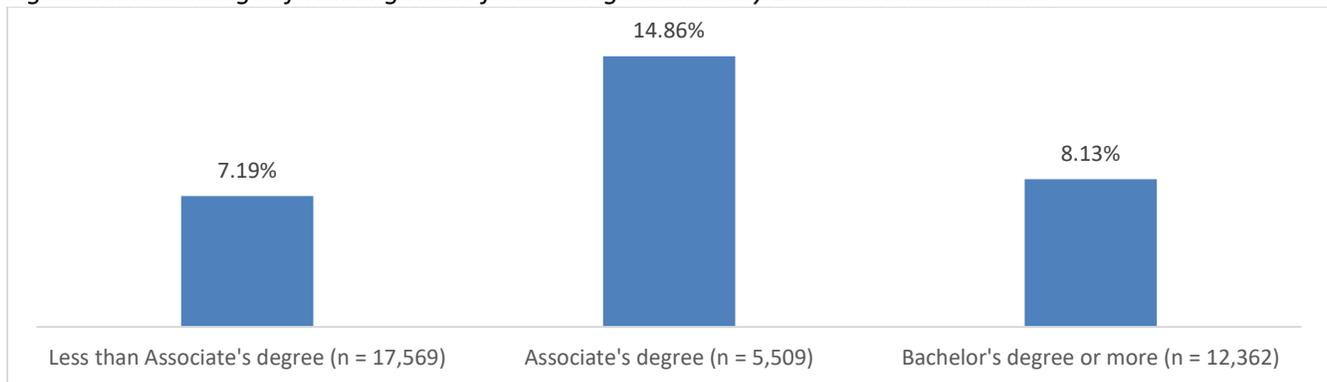
Note. Results are based on data from the Arizona, Miami-Dade (FL), Illinois, Ohio, Oklahoma, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin registries.

Training Hours by Alliance Core Knowledge Areas

Early in its inception, the Alliance created the Alliance Core Knowledge Areas. The seven areas (see Table 9) were designed to cover the range of professional development content covered by training opportunities in the field. By establishing common categories, the Core Knowledge Areas provide the ability to aggregate and compare training hour emphases across registries. Eleven registries—Arizona, Illinois, Ohio, Oklahoma, Maine, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin—have aligned their training hour data with the Core Knowledge Areas and provided data for this report. However, many participants did not have fully coded data for all their reported training hours. For the analyses reported below, only those participants whose

sum of training hours across Core Knowledge Areas was equal to or greater than their reported total number of 2015 clock hours were included. In addition, as in the previous section, training data were included in the analyses only if the participant was employed by at least January 1, 2017 and had valid training data for 2017.

Table 9. National Workforce Registry Alliance Core Knowledge Areas

Child Growth and Development
Health, Safety, and Nutrition
Teaching and Learning
Observing, Documenting, and Assessing
Family and Community Relationships
Administration and Management
Early Childhood Education Profession and Policy

Descriptive statistics by Core Knowledge Area for all roles are shown in Table 10. Because trainings often cover more than one Core Knowledge Area, the total number of hours reported here by Core Knowledge Area will sum greater than the total number of training hours completed in 2015 as reported in Table 2 and other figures.

Table 10. Descriptive Statistics for 2017 Training Clock Hours by Alliance Core Knowledge Areas for All Roles

	Child Growth and Development	Health, Safety, and Nutrition	Teaching and Learning	Observing, Documenting, and Assessing	Family and Community Relationships	Administration and Management	Early Childhood Education Profession and Policy
Mean	2.18	4.18	4.57	0.93	1.06	1.03	2.29
Median	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	230.0	146.9	432.0	135.0	337.5	216.0	225.0

Note. Results are based on data from Arizona, Illinois, Ohio, Oklahoma, Maine, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin registries. n = 61,995 for all areas. Illinois and Ohio do not code training hours for the administration and management category.

Figure 49 shows the mean percentage of training hours by Core Knowledge Area for participants with more than zero training hours in 2017; note that percentages add to more than 100% since professional development may cover more than one area. Across all roles, Health, Safety, and Nutrition accounted for the highest percentage (40%), followed by Teaching and Learning (22%). Teaching and Learning accounted for the most training in the last Alliance dataset. The training requirement in the federal Child Care Block Grant, which stipulates that all programs receiving funds ensure that staff get professional development in the area of health and safety, explains the increase in Health, Safety, and Nutrition training hours reported to registries. The Core Knowledge Area of Observing, Documenting, and Assessing accounted for the least amount of training hours across all roles (7%).

Figure 49. *Mean Percentage of Training Hours by Core Knowledge Area for Participants with Some Training by Major Role*
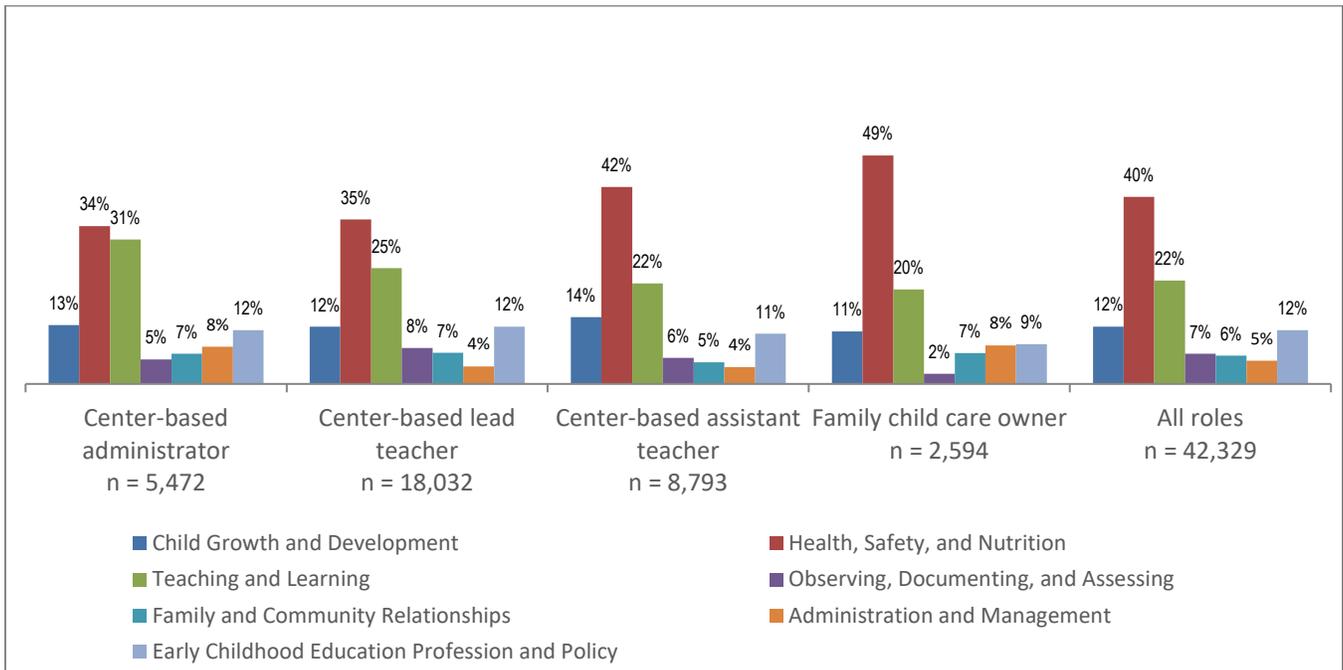
Note. Results are based on data from Arizona, Illinois, Ohio, Oklahoma, Maine, Minnesota, Missouri, Montana, Nevada, New York, and Wisconsin registries.

How do the Alliance 2019 educational attainment data compare to the National Survey of Early Care and Education data?

Due to the nature of the Alliance data, one cannot infer that it is a representative sample of the early childhood and school-age workforce in the United States. However, we can compare findings from this year's dataset, as well as the 2017, 2015, and 2012 datasets, to the most recent national survey of the early childhood workforce, the National Survey of Early Care and Education (NSECE; 2013). Because the NSECE survey randomly sampled early education workers across the United States, its findings can be considered representative of the U.S. workforce. The major weakness of the NSECE survey is its emphasis on self-report. The Registry Alliance datasets, on the other hand, consist of mostly verified data on all registry participants that meet certain criteria, but the data are not representative of the United States in general and may not capture all education and qualifications attained.

Despite differences in data collection methods, the educational attainment for center-based teachers is very similar across datasets, as shown in Table 11. Slightly more than half (53%) of center-based teachers had a formal degree in the NSECE study, whereas 59% had a formal degree in the 2019 Alliance dataset. The distribution of two-year degrees, as well as advanced degrees, was similar across the NSECE and 2019 Alliance datasets. However, in the 2019 Alliance dataset, there was a higher proportion of center teachers with a four-year degree (31%) compared to the NSECE study (26%).

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Table 11. Comparison of Center-Based Teacher Degree Attainment among NSECE and Alliance Datasets

Degree type	NSECE Study (*n* = 4,800)	2019 Alliance Dataset (*n* = 68,510)	2017 Alliance Dataset (*n* = 62,359)	2015 Alliance Dataset (*n* = 40,980)	2012 Alliance Dataset (*n* = 24,721)
Any degree	53%	59%	47%	47%	42%
2-year degree	18%	18%	17%	17%	14%
4-year degree	26%	31%	24%	26%	25%
Graduate/ professional degree	9%	9%	7%	4%	3%

When looking at age group served, the findings continue to be similar but there are apparently some improvements. As shown in Figure 50, 19% of the NSECE sample that worked with infants/toddlers had a bachelor's degree, compared to the 26% found in 2019 Alliance dataset. For center-based teachers working with preschoolers, 45% had a bachelor's degree in the NSECE study compared to 54% in the 2019 Alliance dataset (see Figure 51). Overall, with respect to highest level of education among center-based teachers, the 2019 Alliance dataset compares quite well with the nationally representative NSECE study.

Figure 50. Comparison of Educational Attainment of Center Teachers Serving Infant-toddlers
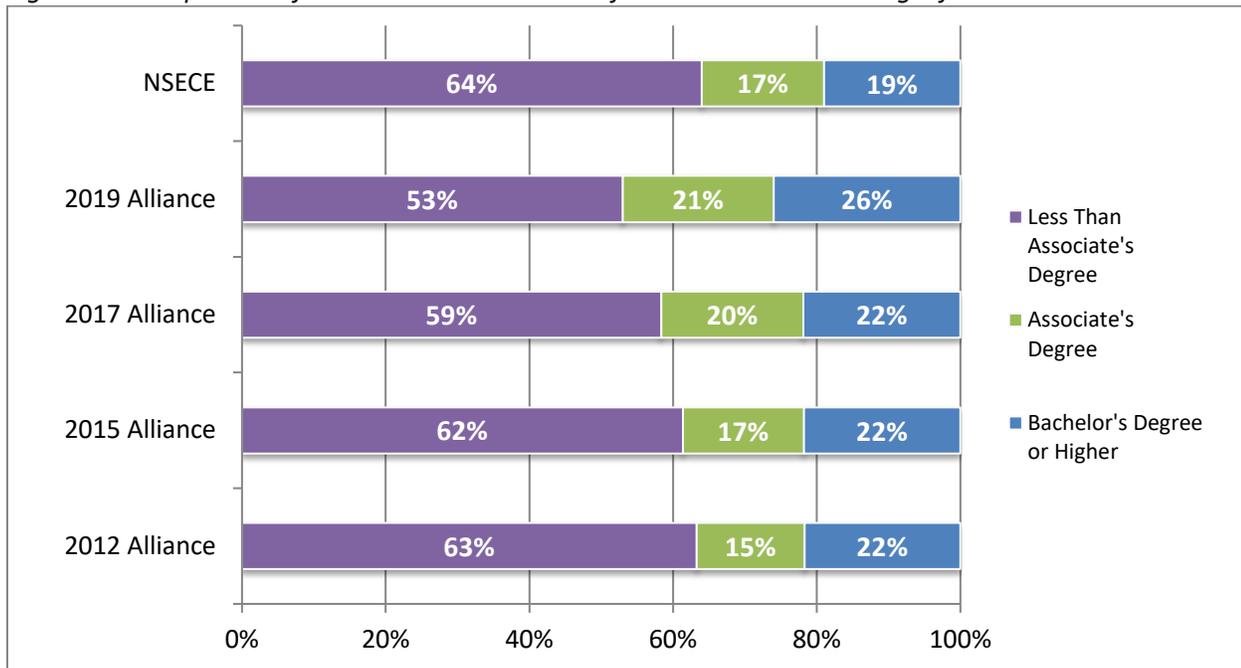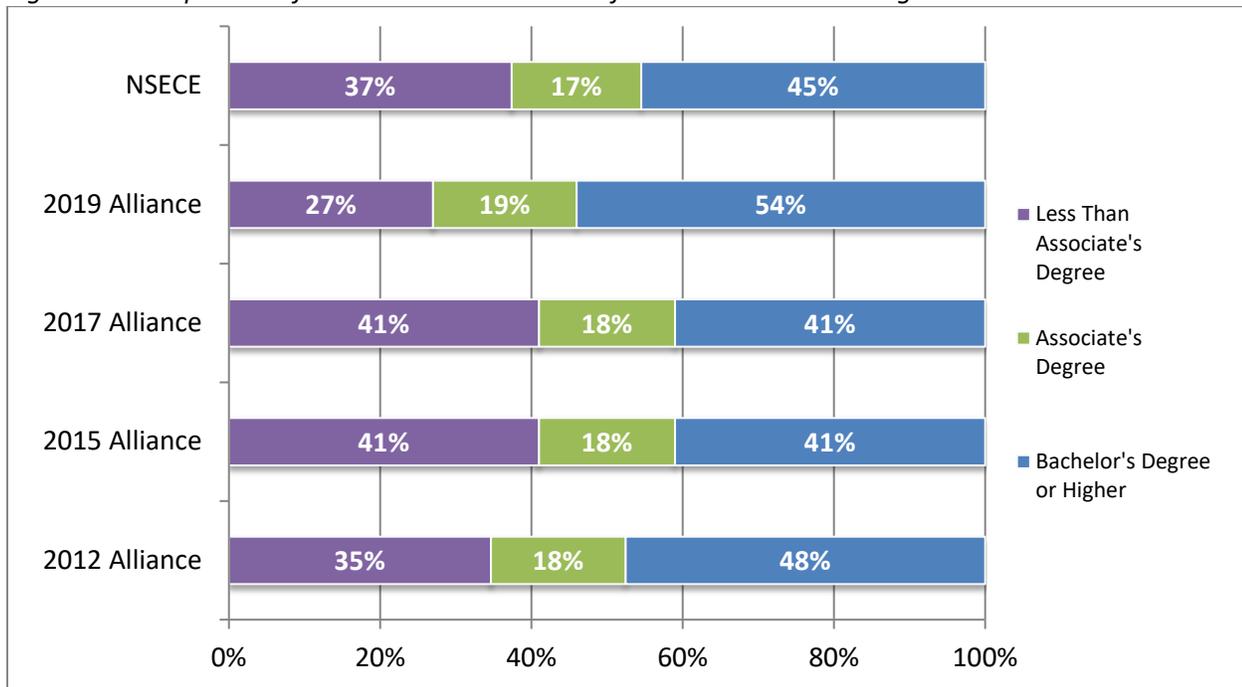
Figure 51. Comparison of Educational Attainment of Center Teachers Serving Preschoolers


Director Analyses

Registry Reach

One way to examine the extent to which registries capture all the early childhood and school-age workforce (registry *reach* or *penetration*) is to study center-based programs and some facets of director participation. Two different methods were used to examine registry reach. The first method focuses on the extent to which registries have captured all licensed center-based directors in their geography. For this calculation, the unduplicated count of licensed center administrators from the registries was divided by the number of licensed centers in the geographies (based on state licensing agencies).[4] In Figure 52, this rate is labeled the *Percent of licensed center directors in registry (registry reach across geography)*. Across all registries, the percent was 55%, higher than the 44% and 43% figures from the 2017 and 2015 datasets, respectively.

The second method, also shown in Figure 52, is the *Percent of licensed center directors based on registry participation (within-registry reach)*. This is calculated by taking the unduplicated number of licensed center administrators in the registries[4] divided by the total number of licensed centers with at least one employee participating in the registries. Across all registries, this figure was 75%, also higher than the 2017 and 2015 figures of 69% and 68%

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[4] Only one administrator per program was counted in this analysis.

Figure 52. Registry Reach by Registry

*Figure 52. Registry Reach by Registry*
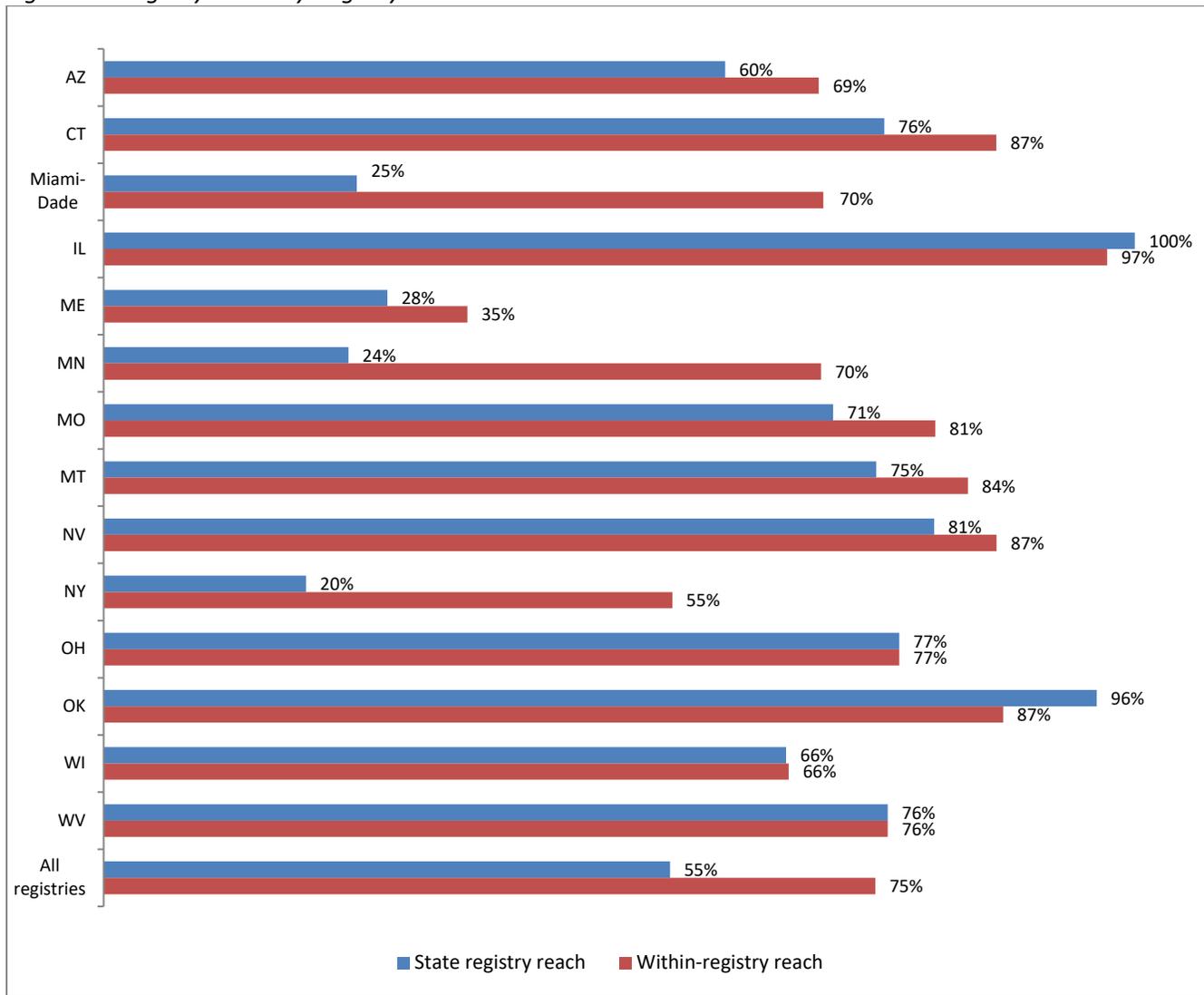
Director as Gatekeepers to Registry Participation: Licensed Centers

Center administrators can be viewed as the "gatekeepers" to center-based programs. They are the primary liaisons between the centers they run and the outside agencies and individuals that regulate, support, and contribute to the programs. Besides their own staff, directors interact with licensing representatives, QRIS assessors, and accreditation team members. Quality initiatives that seek to improve the early care and education landscape, including workforce registries, need director buy-in to be successful. Based on the idea of directors as gatekeepers, it was hypothesized that programs with at least one director in the registry would have higher staff registry participation than programs without a director in the registry.

In order to test this hypothesis, the median number of teaching staff participating in the registry for programs with and without director participation were compared based on licensed capacity (see Figure 53). Only registries that do not mandate some form of participation were used in these analyses, which are based on data from the Connecticut, Miami-Dade, Maine, Minnesota, and Missouri registries. The hypothesis that director registry participation is linked to higher staff participation was supported only for those programs with medium to large capacities (over 60), where programs that have at least one director in the registry were more likely to

have greater numbers of teaching staff participating in the registry compared to programs that do not have a participating director. For smaller programs, there were no substantive differences in staff registry participation based on administrator participation. These results suggest that, especially for medium/large programs, collaborating with directors may increase the rate of registry participation by teaching staff.

Figure 53. Licensed Centers: Median Number of Teaching Staff by Licensed Capacity and Administrator Participation
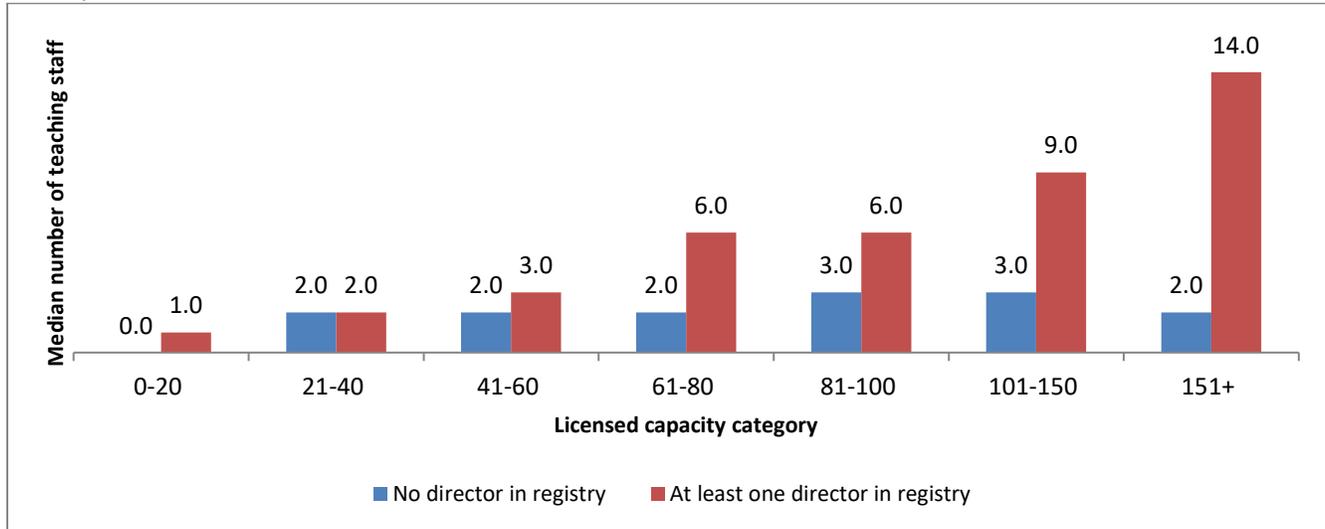
Recommendations for Registries

Based on the findings from this report, the following recommendations are suggested for early childhood and school-age workforce registries.

Become a PER registry so you can share your data to help inform policy at state and national levels.

Thanks to the Partnership Eligibility Review (PER) guidelines established by the Alliance, workforce registries now have solid, proven methods for aggregating data. Increasing registries' capacities to share data will continue to enhance their ability to act as important contributors to other data-driven policy initiatives.

Get to know your registry data so you can inform state and local discussions about workforce initiatives and allocation of resources.

In this dataset, professionals who work with preschoolers had more education and experience, as well as earned more, than those working with other age groups. Registries that have such knowledge about workforce trends in their state/region will ensure that they are invaluable collaborators in data-driven policy initiatives and discussions about resource allocation for workforce development.

Track participants' education, qualifications, and wages over time.

The ability to show verified longitudinal changes in professionals' education, training hours, ECE-specific credentials, and wages strengthens registries' relevance to stakeholders and funders.

Support efforts in your geography to require participation in registry systems for licensed settings and those receiving subsidy.

Registry data becomes most powerful when the case can be made that the entire population of early childhood and afterschool educators are represented. Registries should support efforts to move toward mandated participation.

Ensure that registries are part of the early childhood governance structures in your geography.

Because registries are an importance source of workforce data, especially for early childhood professionals, it is critical that they are represented in initiatives aimed at increasing the quality and quantity of data available to early childhood data systems.

Recommendations for the National Workforce Registry Alliance

Based on the findings from this report, the following recommendations are suggested for the Alliance.

Continue to support registries in their ability to gather high quality workforce data and use such data for policy purposes.

The Alliance has long been the national organization that provides an interactive forum for registries to exchange ideas and strategies. Through the Partnership Eligibility Review (PER) process, registries enhance their capabilities to participate in data-related projects to influence national policy and initiatives.

Modify PER protocols as necessary to enhance the quality of data for aggregation and policy purposes.

Key considerations for the Alliance for future datasets include the following recommendations for PER registries: (1) decreasing the amount of "missing data" for education and training hours; (2) adding information regarding the date when degrees and credentials are earned, thereby enhancing analyses related to workforce qualifications; (3) implementing "transaction flags" within registries so that changes in participant and program status can be captured over time; (4) modifying the process for pulling training hour data to maximize the number of valid records; and (5) modifying the data transfer protocol to enhance the ability of registries to determine definitively whether participants have ECE-related degrees, CPR, First Aid, and CDA credentials.

Strengthen collaborations with national partners so that registries continue to be an important part of national discussions about early childhood and school-age workforce development.

The Alliance already collaborates with a broad array of national groups, including the National Association for the Education of Young Children (NAEYC), the National Center on Afterschool and Summer Enrichment (NCASE), Child Care Aware of America, and Child Trends. Increasing its scope of partnerships will ensure that the Alliance remains a leader in the workforce field.

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