The National Workforce Registry Alliance 2021 Workforce Dataset: Early Childhood and School-Age Workforce Trends with a Focus on Racial/Ethnic Equity

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January 2022

Acknowledgments

Suggested Citation:

Mayfield. W., & Cho, I. (2022). *The National Workforce Registry Alliance 2021 Workforce Dataset: Early Childhood and School-Age Workforce Trends, with a Focus on Racial/Ethnic Equity*. National Workforce Registry Alliance.

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Executive Summary

The 2021 National Workforce Registry Alliance (NWRA) dataset consists of data from 14 of 17 eligible registries: Arizona; Connecticut; Miami-Dade (Florida); Illinois; Maine; Minnesota; Missouri; Montana; Nevada; New Jersey; New York; Ohio; Pennsylvania, and Wisconsin, all of which followed the Partnership Eligibility Review (PER) guidelines for data submission. The dataset represents active registry participants as of January 1, 2019 through January 1, 2021, and includes individual records from 466,115 professionals (356,206 of whom were employed) who work in 64,237 programs/facilities. Of the 14 participating states, registry participation is was required for most of the workforce in Arizona, Illinois, Maine, Montana Nevada, Ohio, Pennsylvania, and Wisconsin.

It must be noted that this year's dataset spans the beginning of the COVID-19 pandemic, which resulted in unprecedented upheaval in the child care sector. However, because the data encompass professional registry participation from January 1, 2019 to January 1, 2021, the results reported here do not reflect the pandemic's effects on the child care workforce fully. Because this study is a two-year snapshot, it does not provide reliable point-in-time data on the child care workforce supply.

Like all other areas, the child care sector has suffered from historical and current inequities that have hampered outcomes for children—particularly children of color, those with disabilities, and those whose home language is not English—as well as the workforce that serves them. Given NWRA's commitment to advancing equity within the child care workforce, this report features two sets of analyses that examine racial/ethnic equity in the PER dataset. The first examines the extent to which the registries' workforce mirrors working age (18-64) and young child (birth to five) populations. The second presents analyses that examine race/ethnicity differences in workers' roles, education, wages, and training.

Program Characteristics
- Slightly more than half of the employing programs (56%) were family child care (FCC) homes, and 41% were centers. Other programs constituted 3% of the facilities, and nearly all programs were regulated
- Among registries that collect Quality Rating and Improvement Systems (QRIS) information, the relevant QRIS rates over half (56%) of the programs. Licensed centers were most likely to be rated (60%), followed by other licensed programs (52%), and licensed FCC (44%) programs

Participants' Characteristics
Demographics
- Approximately two-thirds of center-based administrators (64%) and lead teachers (61%) were White compared to 39% of FCC owners and 34% of FCC assistant teachers
- The median number of years in the field differed based upon the age group served. Those who serve preschoolers had the highest median (5.3 years), followed by those who serve multiple age groups (3.6), infants/toddlers (3.6), and school-agers (2.8)

Education Level
- Among the center-based participants, educational attainment was linked to role, with center administrators more likely to have a bachelor's degree (62%) compared to lead (43%) and assistant teachers (17%)
- Twenty-one percent of FCC owners held a bachelor's degree
- Center lead teachers who work with preschoolers were most likely to have a bachelor's degree (58%), followed by those who work with school-agers (43%), with multiple age groups (38%), and with infants/toddlers (30%)

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 nearly two-thirds of center-based administrators (62%) had at least a bachelor's degree, only 17% held an ECE bachelor's degree or higher. The situation for lead teachers was similar; 43% had at least a bachelor's degree, but only 10% reported an ECE bachelor's or higher
- Center assistant teachers and FCC professionals' attainment of ECE degrees was even lower. Among center assistant teachers, 17% held a bachelor's or higher, but only 1% obtained at least an ECE bachelor's degree. Among FCC providers, the statistics were similar: 21% had at least a bachelor's degree, but only 2% held an ECE bachelor's degree or higher
- Approximately 4% of registry participants across roles have some type of Child Development Associate (CDA) credential. The preschool CDA was held most widely (46%), followed by the infant-toddler (40%), and the FCC home (8%)
- A majority of professionals do not meet the qualifications for Early Childhood Educators as described by Power to the Profession (P2P) established by the National Association for the Education of Young Children. Based upon mandatory PER registry data, only 49% of center administrators, 44% of center lead teachers, 22% of center assistant teachers, and 36% of FCC owners have early childhood specific degrees or CDAs that would meet any of the various levels of the Early Childhood Educators Unifying Framework (P2P)

Wages
- For center-based staff, the median hourly wages were $17.85 for administrators, $13.59 for lead teachers, and $12.00 for assistant teachers
- In general, participants with higher levels of education reported higher wages
- The median hourly wage was related to the age group served. Center teachers who work with preschoolers exclusively tended to earn more than those who work with infants/toddlers, school-agers, or multiple age groups

Changes in Employment Status, Education, and Role between the 2019 and 2021 Datasets
- Twelve registries participated in both the 2019 and 2021 dataset draws and provided data that could be matched. Seven of these registries are considered "mandatory": Arizona; Illinois; Maine; Montana; Nevada; Ohio, and Wisconsin. The other five—Connecticut, Miami-Dade County (Florida), Minnesota, Missouri, and New York—are designated "non-mandatory" (although they may be mandatory for a portion of the workforce)

- The overall retention rate between 2019 and 2021 was 54%, 55% for mandatory registries and 51% for non-mandatory registries
- Most participants (77%) were employed across both datasets. However, 17% were employed in 2019, but unemployed in 2021, 2% were unemployed in 2019, but employed in 2021, and 3% were unemployed in both datasets
- Compared to non-mandatory registries, mandatory registries showed a higher percentage of participants with higher educational attainment across all roles.
- Center lead teachers show different patterns of higher educational attainment depending upon registry type
    - Center lead teachers in non-mandatory registries were far more likely to move from a bachelor's degree to a master's degree than those in mandatory registries (33% vs. 12%)
    - On the other hand, center lead teachers in mandatory registries were more likely to move from a high school diploma to an associate degree than those in non-mandatory registries (35% vs. 19%)
- 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 (92%), followed by other program administrators (86%), center administrators (85%), and center lead teachers (85%)
- Between the 2019 and 2021 datasets, 5% of center lead teachers across all registries, became center assistant teachers, while 4% became center administrators. For center assistant teachers, the most likely change was to center lead teacher (20%)
- The pandemic likely has had a large effect on child care employment, education, and shifts in roles within registries, but because the data reflect only a two-year span (2019-2021), the effects of COVID cannot be isolated

Featured Analysis: Distribution of Workers by Race/Ethnicity
- In PER states, Black professionals and professionals in other race/ethnicity categories were more likely to be part of the early childhood and school-age workforce compared to their White and Asian/Pacific Islander peers (who were more likely to work in other fields)
- Comparing racial/ethnic percentages of children 0-5 from the Census Bureau with the PER registry racial/ethnic percentages, Black workers were over-represented in the PER data, while Hispanics and Asians/Pacific Islanders were under-represented
- Increasing the representation of Hispanic and Asian/Pacific Islander professionals in PER registries will make the workforce more representative of the children and families they serve

Featured Analysis: Workforce Characteristics by Race/Ethnicity
- In center programs, White participants constituted a larger percentage of administrators than lead or assistant teachers compared to professionals of color
- In family child care, professionals of color constituted a larger percentage of the workforce than they did in centers

- Among center professionals, Asian/Pacific Islanders and Whites were mostly likely to have a bachelor's degree, while Hispanics and Blacks were least likely
- Among center professionals, Asian/Pacific Islanders reported earning the most, followed by Blacks and Hispanics. Other categories and White professionals earned the least. However, compensation patterns differed by registry; in many states with smaller registries, Whites earn more than Blacks
- With respect to professional development, Hispanic and Black professionals reported the greatest number of training hours in 2019, and Whites and Asians/Pacific Islanders the fewest

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

Recommendations for the National Workforce Registry Alliance
- Continue to support registries' 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
- Prioritize efforts to examine and advocate for equity in the child care workforce

Introduction

Given the importance policymakers have attached to improving child care quality, early childhood and school-age workforce registries can play a unique role by documenting and providing crucial information about the workers who care for our nation's children. In addition to providing recognition of early childhood and school-age professionals, registries track such critical data as worker demographics, professional development, and education qualifications. The National Workforce Registry Alliance (NWRA) is the professional association dedicated to supporting registries in their work, with the mission to provide a national perspective to inform relevant workforce policies and initiatives.

This report presents descriptive analyses of the early childhood and school-age workforce based upon the 2021 National Workforce Registry Alliance Dataset. Longitudinal analyses that examined changes in employment status, education, and role between the 2019 and 2021 datasets are also included. Because this study is a two-year snapshot, it does not provide reliable point-in-time data about the child care workforce supply. Those interested in supply information should work with local registries to provide more discrete, time-limited data.

Like all other fields, the child care sector has suffered from historical and current inequities that have hampered the outcomes for children—particularly children of color, those with disabilities, and those whose home language is not English—as well as the workforce that serves them.[i] Given NWRA's commitment to advancing equity within the child care workforce, this report features two sets of analyses that examine racial/ethnic equity in the PER dataset. The first investigates the extent to which the registries' workforce mirrors the working age (18-64) and young child (birth to five) populations. The second presents analyses that examine racial/ethnic differences in workers' role, education, wages, and training.

The 2021 NWRA Dataset consists of data from 14 registries: Arizona; Connecticut; Miami-Dade (Florida); Illinois; Maine; Minnesota; Missouri; Montana; Nevada; New Jersey; New York; Ohio; Pennsylvania, and Wisconsin. These registries followed the Partnership Eligibility Review (PER) guidelines for data submission. The dataset represents active registry participants as of January 1, 2019 through January 1, 2021, and includes individual records from 466,115 professionals (356,206 of whom were employed) who work in 64,237 programs/facilities. Of the 14 registries, participation is mandatory for most of the workforce in Arizona, Illinois, Maine, Montana Nevada, Ohio, Pennsylvania, and Wisconsin. Unless noted otherwise, all tables and figures include data from the 14 registries listed above.

It must be noted that this year's dataset spans the beginning of the COVID-19 pandemic, which resulted in unprecedented upheaval in the child care sector. However, because the data encompass professional registry participation from January 1, 2019 to January 1, 2021, the results reported here do not reflect the pandemic's effects on the child care workforce fully.

Overview of Programs/Facilities

Table 1 shows the type and number of facilities, including regulation (licensing) status, for the full dataset (*N* = 64,237). Less than half (41%) of the programs were centers, while slightly more than half (56%) were family child care (FCC). Nearly all center-based programs were regulated. "Other program types" refers to programs that state licensing entities do not consider centers or homes; these include school-based pre-kindergarten programs, school-based afterschool programs, day camps, and group child care homes. These programs are referred to as "other programs" in this report.

Table 1. Facilities by License and Regulation Type

License type	*N*	% of all programs	Regulation type			
			% licensed	% unregulated	% license-exempt, but regulated	% missing data
Center-based program	34,239	53.3%	93.2%	0.5%	6.2%	0.1%
Family child care homes	23,169	36.1%	78.1%	3.0%	18.9%	0.0%
Other program types	2,806	4.4%	70.9%	13.2%	15.9%	0.0%
Missing data	4023	6.3%	0.1%	14.3%	67.2%	17.6%

Licensed Capacity

Figure 1 provides license capacity data by license type. Slightly less than half of centers (46%) had a capacity of 60 or less. Not surprisingly, family child care programs had smaller capacities. Other programs tended to have smaller capacities as well, but there were several larger programs.
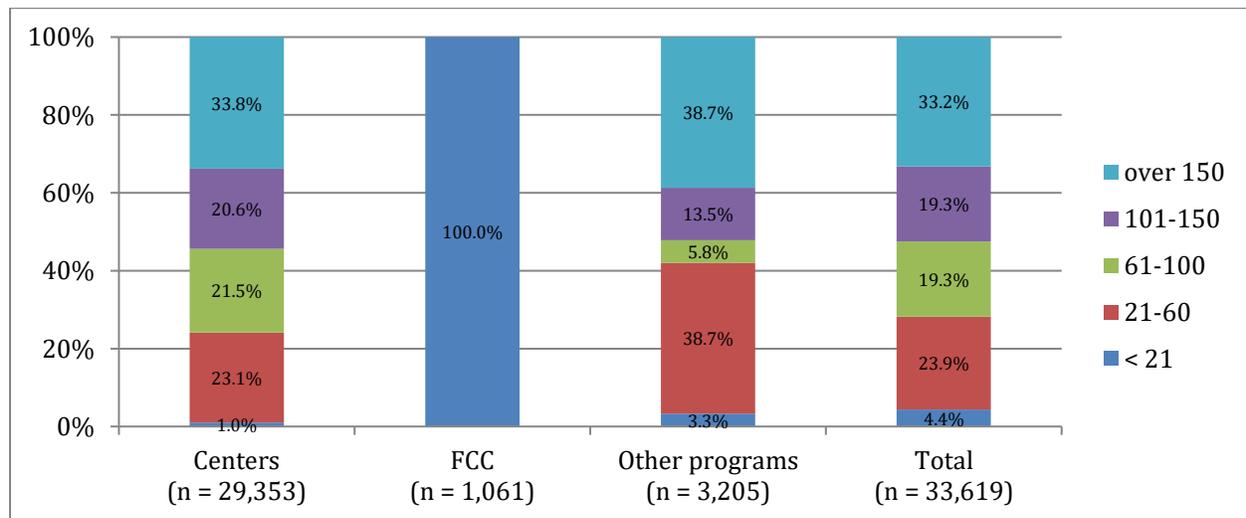
Figure 1. Licensed Capacity Categories by License Type

Quality Rating and Improvement Systems (QRIS)

Ten of the fourteen registries collect data on program participation in QRIS (Arizona, Connecticut, Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, and Nevada). Figure 2 shows the percent of programs a QRIS rated by site type. Overall, over half (57%) of the programs have a QRIS rating. Over 60% of licensed centers have been rated, as well as slightly less than half of the licensed FCC programs (44%). Exempt, but regulated, FCC were least likely to have a QRIS rating (16%).
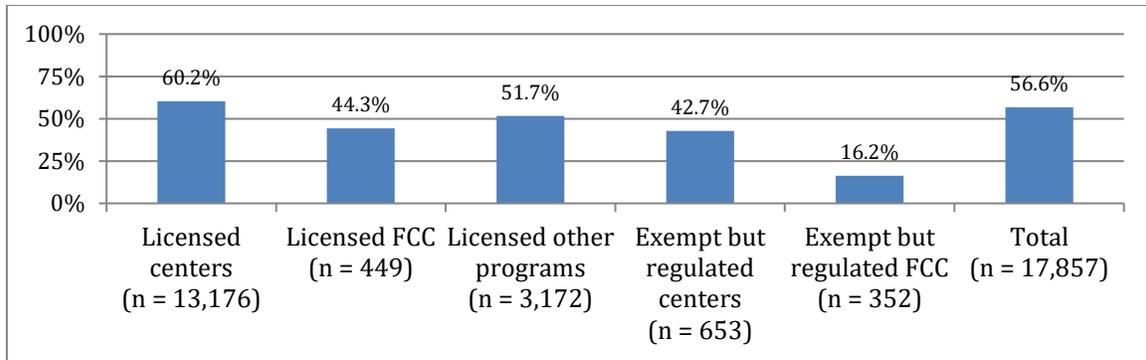
Figure 2. Percent of Programs with QRIS Ratings by Site Type

Overview of Participants

Registry participants were assigned roles based upon their job title and program type. Table 2 shows the 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

When interpreting 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 related to registry participation that are often associated with state-specific regulations for early childhood programs and workers, and registry resources. Figure 3 presents the number of participants employed currently by registry, as well as the number of those who are direct service professionals (those who work with children). Most registry participants employed are direct service professionals; the percent across all registries was 84.0%.

Gender, Race/Ethnicity, and Age

As shown in Table 2, the majority of participants across all roles were female and White. However, the proportion of nonminority participants varied among roles. Nearly two-thirds of center-based administrators (64%) and more than three-fifths (61%) of center lead teachers were White, compared to 39% of family child care (FCC) owners and 34% of FCC assistant teachers. 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.
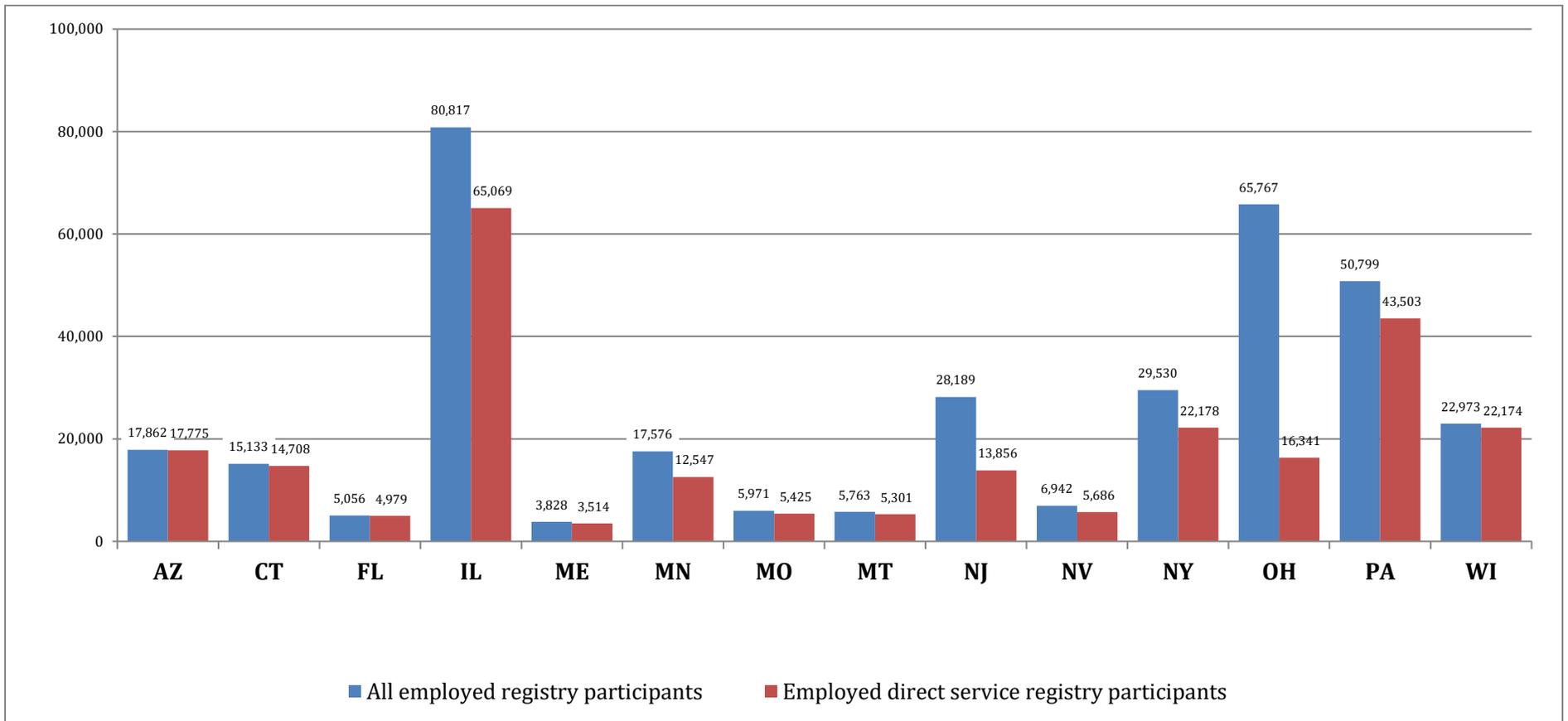
Note. The Ohio registry has significant numbers of participants whose direct service cannot be determined, which explains the larger drop-off from all participants employed to direct service participants employed.

Figure 3. Total Number of Participants Employed and Number of Direct Service Professionals Employed

Table 2. Characteristics of Registry Participants Employed by Major Role

	Center administrator	Center lead teacher	Center assistant teacher	Center 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	30,442	101,140	89,276	39,674	14,006	3,190	5,328	6,327	1,620	3,544	3,203	1,31
% female	93.7%	96.9%	96.1%	92.9%	96.3%	97.9%	79.5%	80.9%	90.9%	95.4%	94.9%	85.9%
Race/ ethnicity*	64% White 18% Black 11% Hispanic	61% White 16% Black 15% Hispanic	54% White 17% Hispanic 20% Black	56% White 19% Black 17% Hispanic	39% White 37% Black 19% Hispanic	70% White 13% Black 9% Hispanic	34% White 32% Black 29% Hispanic	56% Black 29% White 11% Hispanic	74% White 11% Hispanic 10% Black	71% White 14% Hispanic 8% Black	58% White 27% Hispanic 7% Black	63% White 13% Black 12% Hispanic
Median age	44.0 (*n* = 33,118)	36.0 (*n* = 113,624)	29.0 (*n* = 100,790)	36.0 (*n* = 43,667)	50.0 (*n* = 15,440)	45.0 (*n* = 3,396)	37.0 (*n* = 5,384)	47.0 (*n* = 6,656)	45.0 (*n* = 1,773)	38.0 (*n* = 3,944)	38.0 (*n* = 3,790)	26.0 (*n* = 1,172)
Median years in field	9.4 (*n* = 24,771)	4.9 (*n* = 85,782)	2.6 (*n* = 75,980)	2.3 (*n* = 40,507)	9.7 (*n* = 7,403)	9.5 (*n* = 3,417)	3.6 (*n* = 1,081)	4.1 (*n* = 2,330)	8.5 (*n* = 1,502)	5.5 (*n* = 3,824)	3.6 (*n* = 3,747)	2.4 (*n* = 1,135)
Median hourly wage	$17.85 (*n* = 13,827)	$13.59 (*n* = 58,342)	$12.00 (*n* = 55,022)	$13.25 (*n* = 10,427)	**	**	**	**	$17.00 (*n* = 982)	$16.35 (*n* = 2,750)	$12.42 (*n* = 3,101)	$11.00 (*n* = 579)
Highest level of education*	40% Bachelor's 22% Master's	36% HS diploma 32% Bachelor's	68% HS diploma 15% Bachelor's	48% HS diploma 23% Bachelor's	53% HS diploma 21% Associate's	55% HS diploma 20% Bachelor's	55% HS diploma 16% Associate's	52% HS diploma 16% Associate's	41% HS diploma 18% Bachelor's	32% Bachelor's 28% Master's	54% HS diploma 23% Bachelor's	39% HS diploma 26% Bachelor's
Median training hours in 2019	7.50 (*n* = 28,633)	8.00 (*n* = 94,165)	5.00 (*n* = 76,039)	7.00 (*n* = 32,564)	8.50 (*n* = 12,333)	15.00 (*n* = 3,407)	7.00 (*n* = 3,070)	6.00 (*n* = 2,362)	8.00 (*n* = 1,485)	2.50 (*n* = 3,123)	.00 (*n* = 2,583)	6.00 (*n* = 811)

*Only top categories provided.

** Median hourly wages for FCC roles are not included in this report because of the volume of missing data (72%).

*** "Other roles" include such titles as bookkeeper, receptionist, custodian, and bus driver.

Note. The number of observations differs across variables because of missing data (not all registries gather data on all variables).

Median Years in the Field

Eleven of the 14 registries collect data on participants' tenure in the field (Arizona, Connecticut, Maine, Minnesota, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin). As a time-related variable, this attribute was correlated highly with age. Accordingly, those roles characterized by older median ages also reflected higher median years of experience. Center administrators reported that they worked in the field nearly twice as long (9.4 years) as center lead teachers (4.9 years), and more than three times as long as center-based assistant teachers (2.6 years). Similarly, FCC owners had more than twice the median years of experience (9.7 years) as FCC assistant teachers (3.6 years).

Figure 4 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 slightly lower than the figure for infant-toddler leads.
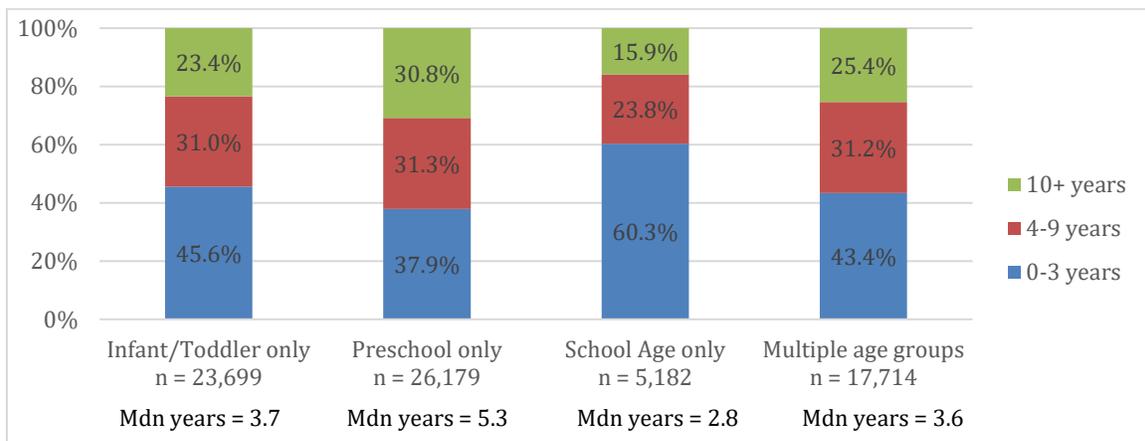
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 4. Center Lead Teachers: Years in Field by Age Group Served

Median Hourly Wage

Among center-based staff, administrators earned more per hour than lead teachers ($17.85 vs. $13.59), who in turn earned more than assistant teachers ($12.00). For other program participants, administrators also earned more than lead teachers ($17.00 vs. $16.35 an hour), but by a much smaller margin than found in center staff. Wage differences by education and role will be discussed more fully in a later section. All registries except for Maine collected wage data for this dataset.

Highest Level of Education

Center-based participants' educational attainment was linked to role, with administrators most likely to have a bachelor's degree (62%) compared to lead (43%) 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 lead teachers, who were most likely to have a bachelor's degree.

Median Number of 2019 Training Hours

All registries except for Connecticut reported participant professional development (training clock hours) in 2019. 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 in the registry. Only participants who had an employment start date of January 1, 2019 or earlier were included in these analyses.

As Table 2 previously showed, FCC lead teachers had the highest median number of training hours (15.00), followed by FCC owners (8.5). Center lead teachers and other program administrators reported 8.00 median hours, followed by center administrators (7.5 hours), other center roles (7.00), FCC assistant teachers (7.00), other family child care roles (6.00), other program roles (6.00), and center assistant teachers (5.00). FCC assistant teachers and other FCC roles reported 10.00 median hours, followed by other program administrators (8.63), center assistant teachers (8.00), and other center roles (7.00). Other program lead teachers and assistant teachers reported very few training hours.

Where Professionals Work

Another important demographic factor to consider both within and across registries is the extent to which programs are located across 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 3 gives a breakdown of Beale Codes and their relation to the metro and non-metro categories. As shown in Figure 5, 89% of participants in this dataset worked in programs in metropolitan areas, with the largest proportion, not surprisingly, in the counties that include the most populous metropolitan areas.

Table 3. Rural-Urban Continuum Codes

| 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
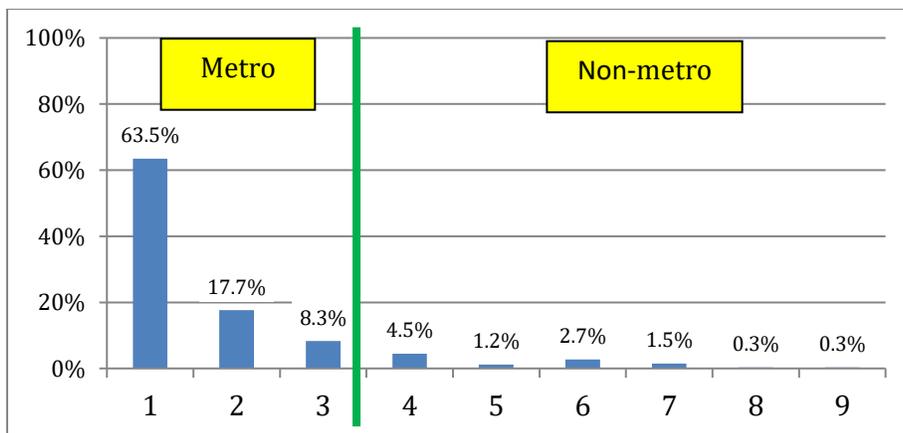
Figure 5. Registry Participant Program by Rural-Urban Continuum Code

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Participants' Primary Language

      The registries reported the primary language the employed participants spoke. Of the 382,662 participants who provided data for this field, 90.1% indicated that English was their primary language. The second primary language reported was Spanish (4.0%), while the third was Other (2.8%). The proportions of other languages were as follows: other language not listed, 0.2%; Arabic, 0.2%; Chinese, 0.1%; Creole, 0.1%, French, 0.1%, Hindi, 0.1% Polish, 0.2%; Russian, 1.6%; Swahili, 0.1%; Tagalog, 0.1%, and Urdu, 0.1%.

Age Group Served

      As Figure 6 shows, 32% serve preschoolers only; 30% infants/toddlers, and 28% multiple age groups. Those who work with school-agers exclusively constitute the smallest group in the PER registries at 10%.
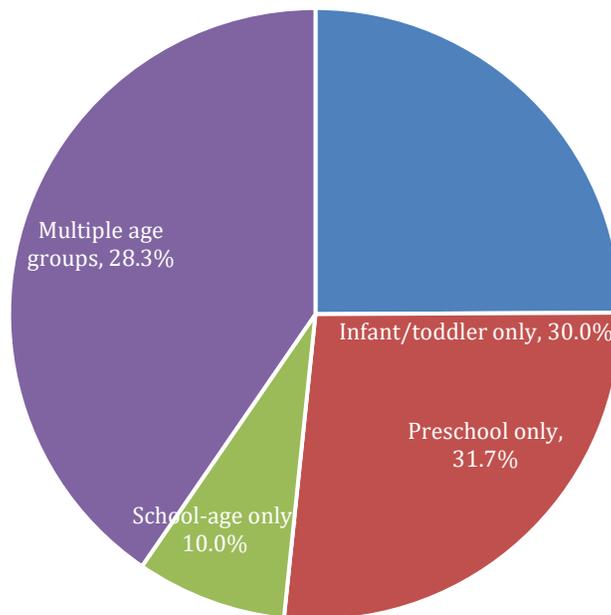
Figure 6. Age Group Served (n =356,206)

      Figure 7 shows participants by age group served for major center and FCC roles. Not surprisingly, FCC participants were far more likely to work with multiple age groups compared to center staff. Center lead teachers were approximately equally likely to work with preschoolers only and infants/toddlers only (35%), although center assistant teachers were more likely to work with multiple age groups than center leads.
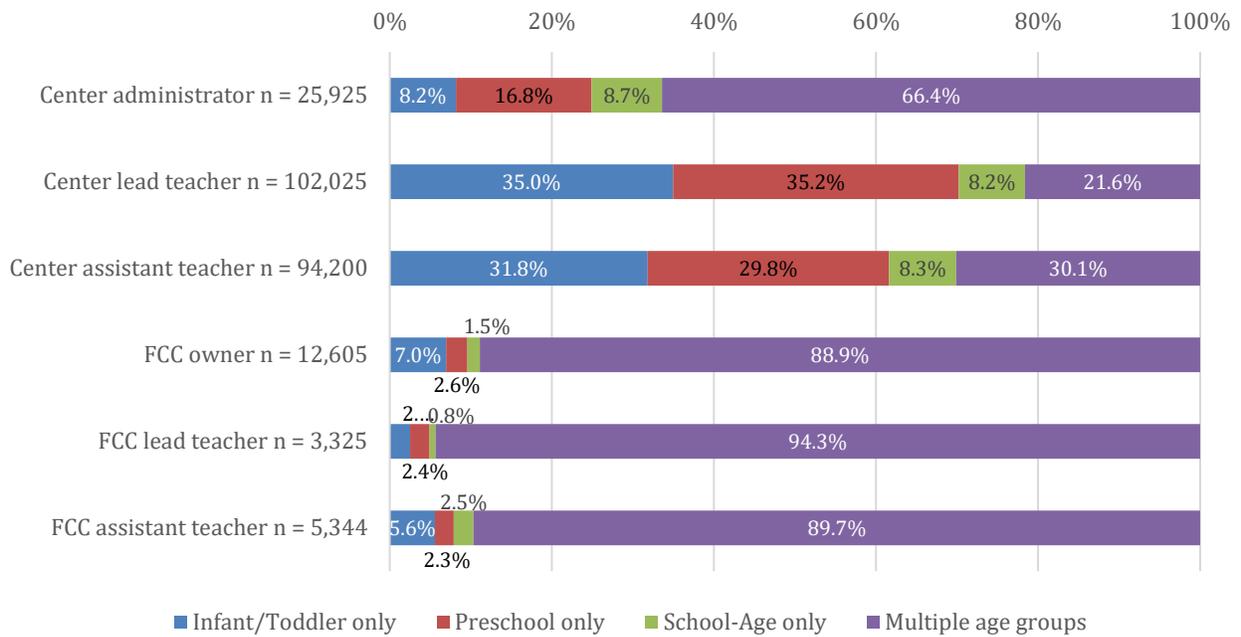
Figure 7. Registry Participants by Major Role and Age Group Served

Median years in the field differed significantly based upon age group served (see Figure 8). Participants who serve preschoolers only had the highest median (4.59), followed by those who serve infant/toddler groups (3.20). For these registries, the most experienced professionals serve preschoolers and infant/toddler groups, which has implications for professional development and quality improvement endeavors.
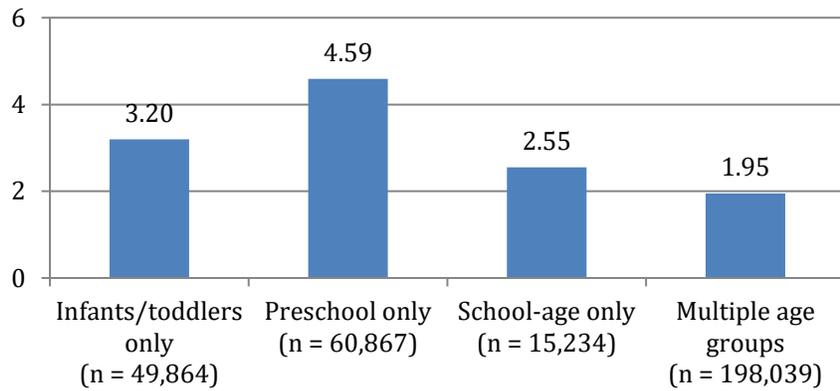
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 8. Median Years in the Field by Age Group Served

Highest Level of Education by Role

Figure 9 shows the highest level of formal education the registry participants attained by role. All registries contributed data for the participants' education level. For all registries, the participants' full education is requested and all data they receive are entered; however, it should be noted that some education records may be incomplete—i.e., they reflect only the education level the participant reported, and it is possible that the highest level and early childhood-specific qualifications were not reported.

As expected, center-based administrators tended to have more education than lead teachers; nearly two-thirds (62%) of administrators hel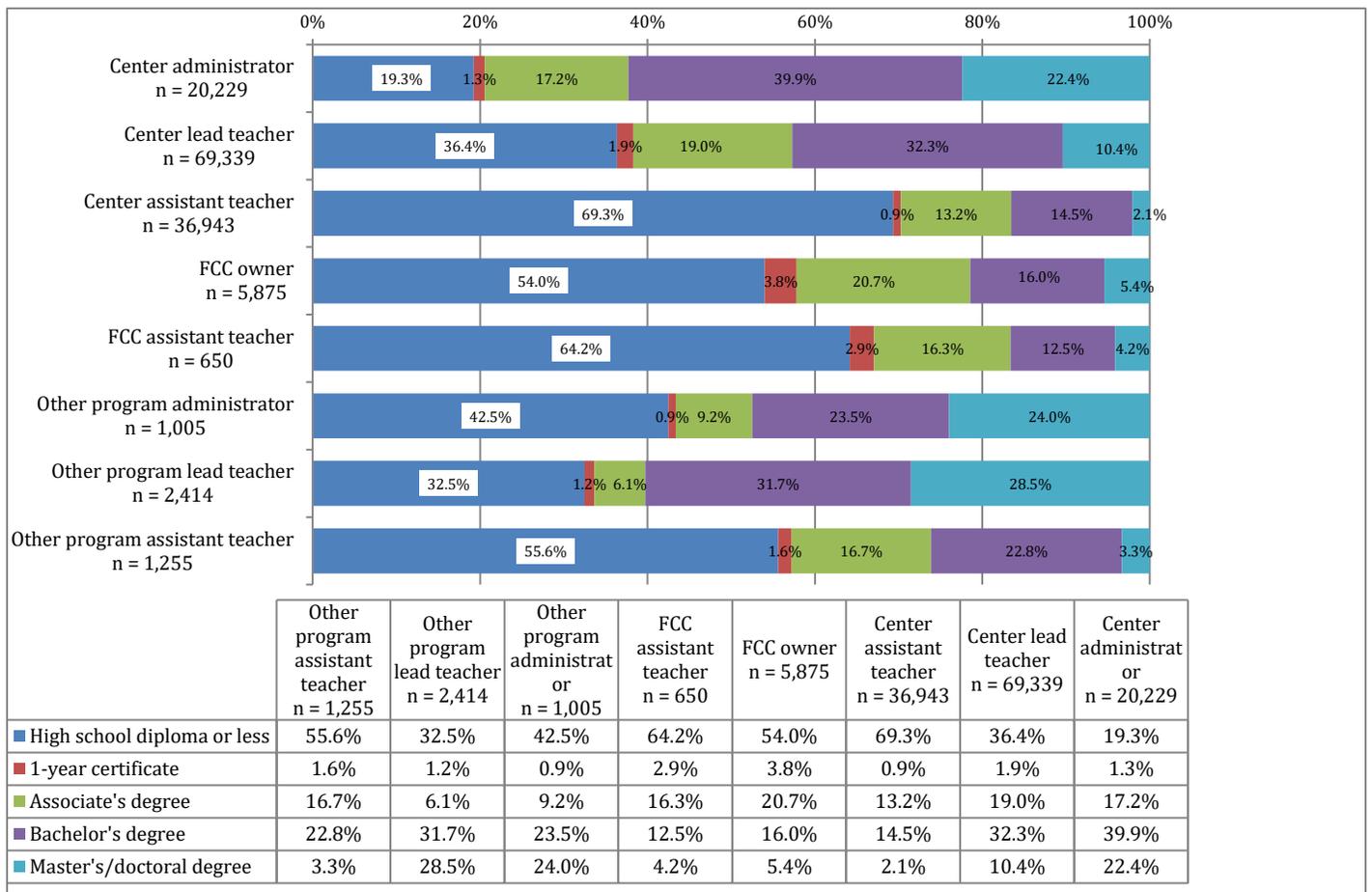d at least a bachelor's degree, while only 43% of lead teachers had the same level of education. More than two-thirds (70%) of center-based assistant teachers had a high school diploma or less, and only 17% had a bachelor's degree or more. 58% of FCC owners reported having a high school diploma or less, and only 21% reported having a bachelor's degree.

	Other program assistant teacher n = 1,255	Other program lead teacher n = 2,414	Other program administrator n = 1,005	FCC assistant teacher n = 650	FCC owner n = 5,875	Center assistant teacher n = 36,943	Center lead teacher n = 69,339	Center administrator n = 20,229
High school diploma or less	55.6%	32.5%	42.5%	64.2%	54.0%	69.3%	36.4%	19.3%
1-year certificate	1.6%	1.2%	0.9%	2.9%	3.8%	0.9%	1.9%	1.3%
Associate's degree	16.7%	6.1%	9.2%	16.3%	20.7%	13.2%	19.0%	17.2%
Bachelor's degree	22.8%	31.7%	23.5%	12.5%	16.0%	14.5%	32.3%	39.9%
Master's/doctoral degree	3.3%	28.5%	24.0%	4.2%	5.4%	2.1%	10.4%	22.4%

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

Figure 9. Highest Level of Education Attained (All Categories) by Role

Figure 10 compares center lead teachers' educational attainment by age group. Less than a third (30%) of infant/toddler center lead teachers held a bachelor's degree, which is approximately half the figure for center lead teachers who work with preschoolers (58%) and less than those who work with school-agers (43%) and multiple age groups (38%).
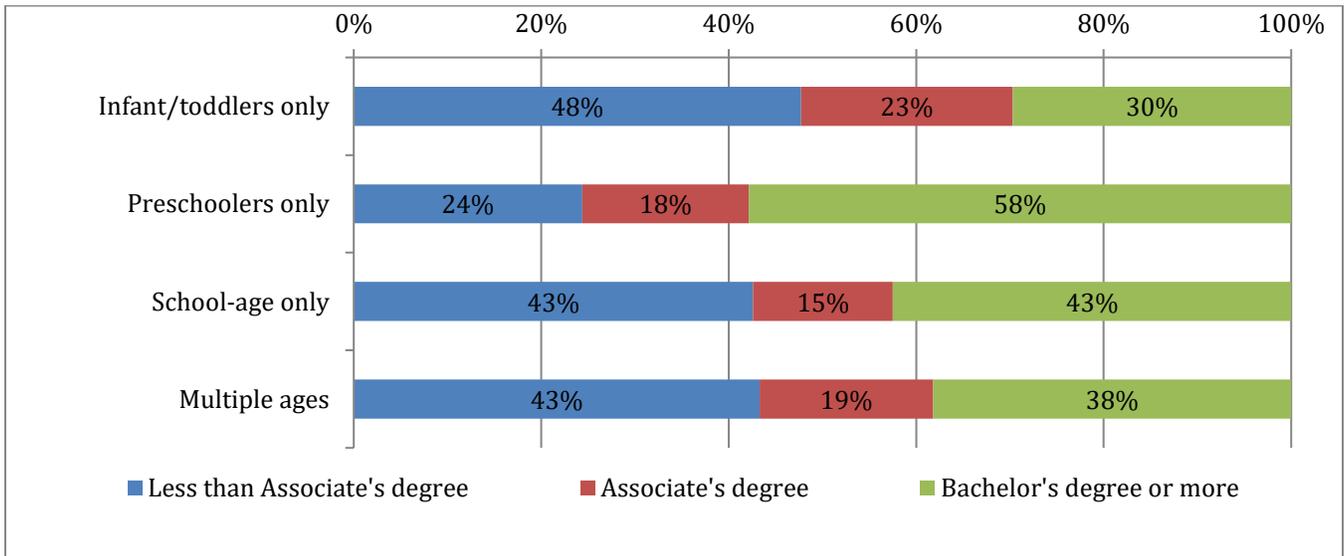
Figure 10. Center Lead Teachers: Highest Level of Education by Age Group Served

It must be noted that educational attainment was missing for over half (55%) 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 ability to generalize the results of these analyses. As shown in Figure 11, center administrators, center lead teachers, other program administrators, and other program lead teachers had relatively few missing education data compared to center assistant teachers and FCC participants.
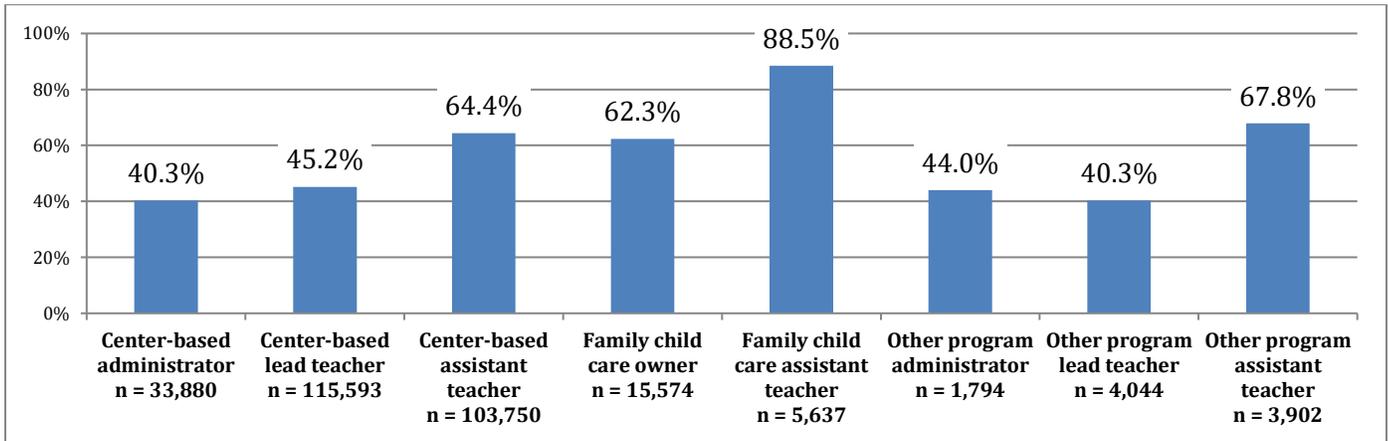

Figure 11. Missing Data for Highest Level of Education by Role

"Some College" as an Education Category

Another educational trend that NWRA has been monitoring over the years is the frequency of professionals whose highest education level is "Some College"—i.e., those who have earned college credits, but have not earned a post-secondary degree. The results reported here are based upon data from fewer registries, as 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 12 displays the percentage of professionals by role who indicated that their highest level of education was "Some College." Center assistant teachers and family child care lead teachers were most likely to report "Some College" as their highest level of education (25%), followed by FCC owners and other program administrators (16%), center lead teachers (14%), and other program assistant teachers (13%).

These findings demonstrate that a significant proportion of participants in all roles have some college credits although they have not obtained a degree.
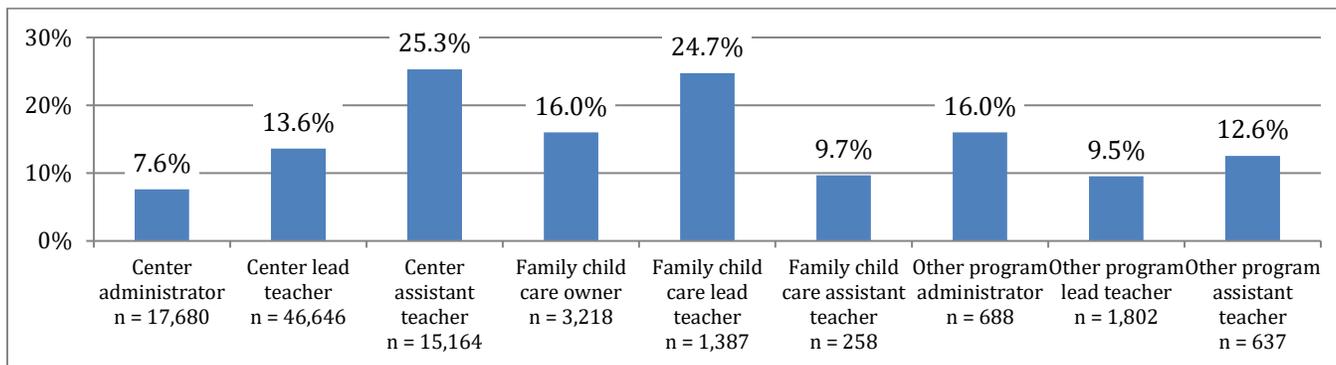
Note. Results are based upon data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Pennsylvania, and Wisconsin registries.

Figure 12. Professionals with "Some College" as Highest Education Level by Role

Figure 13 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.
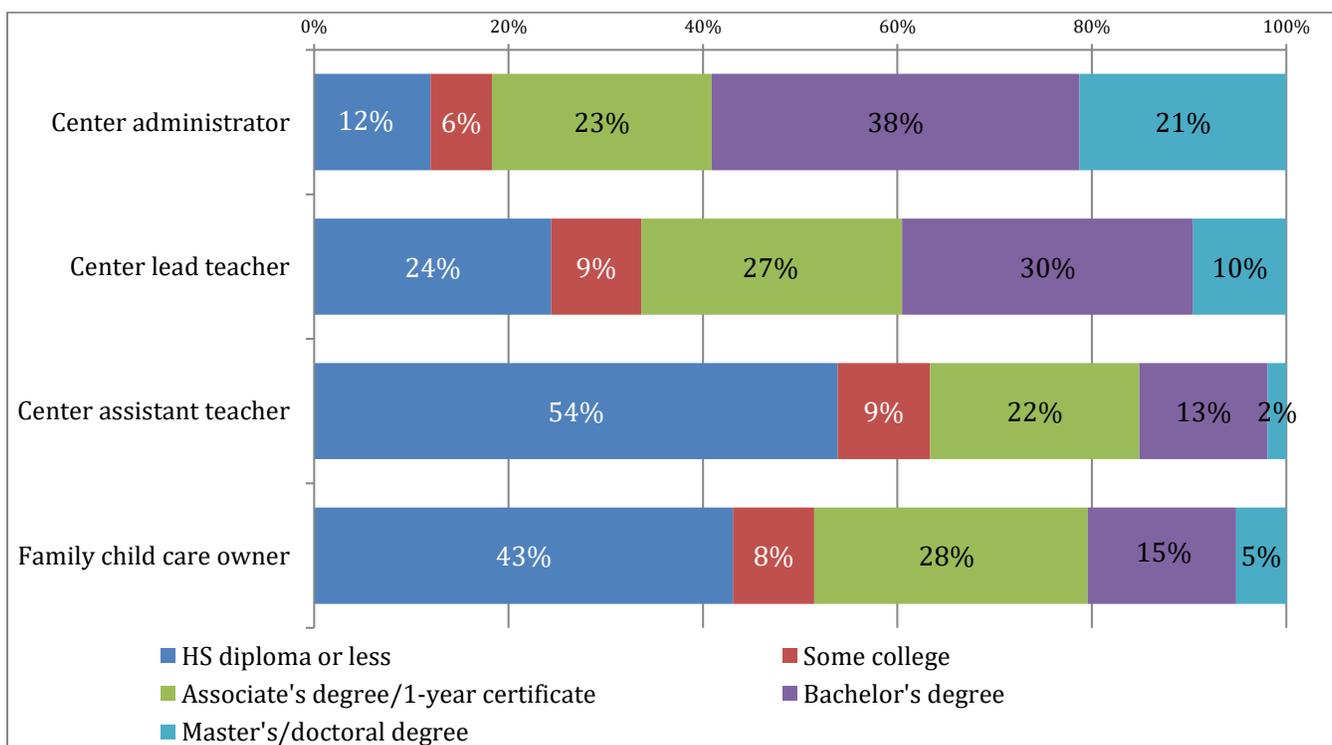
Note. Results are based upon data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Pennsylvania, Wisconsin registries.

Figure 13. Highest Level of Education Attained by Major Role for Registries that Gather College Credits

In addition, as shown in Figure 14, the majority of center-based staff with "Some College" as their highest educational attainment had at least 30 college credits, with center administrators at 55%, center leads at 56%, and center assistants at 59%. For FCC owners/administrators, the percentage was 45% 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, registries' ability to track college credits and not simply highest educational attainment is an important role that registries can play to portray the workforce's education status accurately.
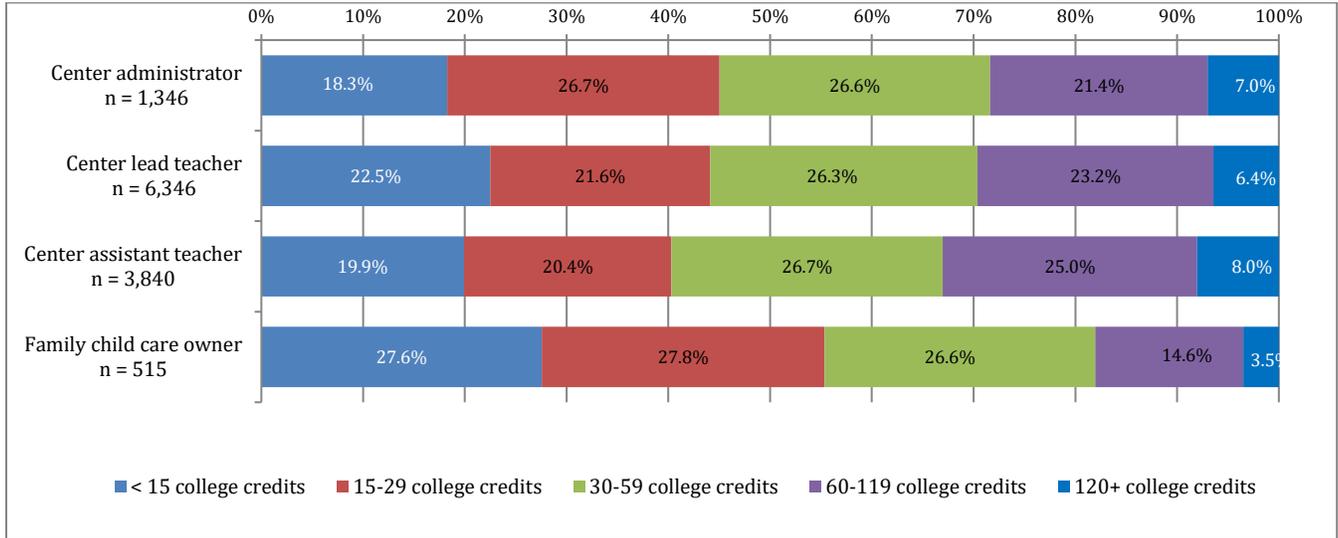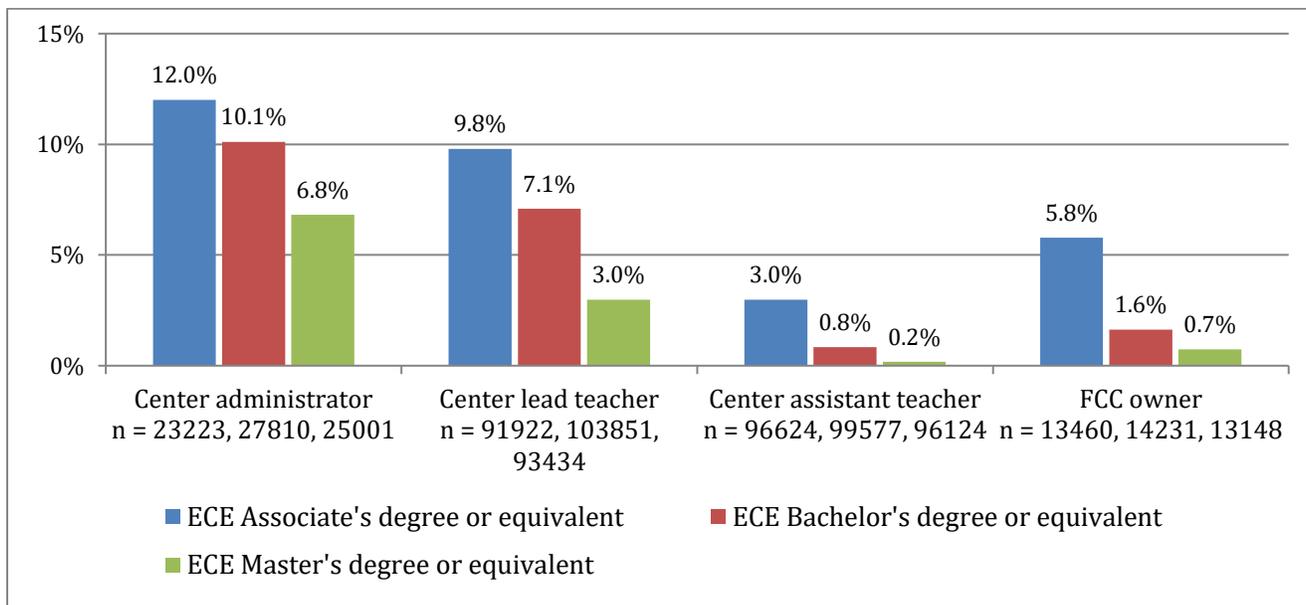

Note. Results are based upon data from the Miami-Dade (FL), Illinois, Maine, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Pennsylvania, Wisconsin registries.

Figure 14. Number of College Credits Professionals with "Some College" earned

Education Specific to Early Childhood Education

The NWRA encourages registries to collect educational data on degrees specific to early childhood education (ECE). Because many registries code these degrees only when participants submit them, they do not have definitive information on whether participants have an ECE-specific degree; such cases were treated as missing in these analyses.[i] Because of these issues, the true prevalence of ECE-specific degrees in these registries is unknown. It should be noted that approximately two-thirds of participants lacked data that indicated whether their degrees were ECE-specific.

As Figure 15 shows, relatively few participants have an ECE-specific degree when the percentages are totaled across all categories (associate's, bachelor's, and master's): 29% of center administrators have an ECE-specific degree, 20% of center leads, and only 4% of center assistant teachers. For family child care owners, only 9% have such a degree. Of course, some of these participants may work only with school-agers, but having a degree in early childhood is a good background when serving children of all ages, particularly those in the elementary grades. Participants across all roles shown were more likely to have ECE associate degrees than bachelor's or master's degrees.

Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Maine, Minnesota, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, Wisconsin registries.

Figure 15. ECE-Specific Degrees by Role

As the Institute of Medicine and the National Research Council pointed out, 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 development knowledge, are the keys to enhancing program quality and ensuring positive child outcomes.[2] The report *Transforming the Workforce for Children Birth Through Age 8* goes even further by recommending a multiyear transition during which all lead educators obtain a bachelor's degree with specialized knowledge and competencies in ECE.[3] Registries can play a key role by helping inform state and local conversations about this recommendation, particularly with data on the educational qualifications and ECE-specific coursework of the current workforce of lead teachers.

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

The National Association for the Education of Young Children (NAEYC) has sponsored Power to the Profession, a national collaboration to establish a framework of knowledge, competencies, qualifications, standards of practice, and compensation for early childhood educators who work with children birth through age eight (https://www.naeyc.org/our-work/initiatives/profession). An Early Childhood Educator I (ECE I) will complete a professional preparation program that meets a minimum of 120 clock hours (equivalent to a CDA). An Early Educator II (ECE II) will complete an early childhood education associate's degree program. At the Early Childhood Educator III (ECE III) level, professionals will complete an early childhood education bachelor's or master's degree program.

Figure 16 shows education levels presented in the Power to the Profession framework for four roles in *mandatory* PER registries. If professionals do not have a CDA or an ECE-specific degree, they do not qualify for the Power to the Profession categories. As the figure shows, most of the workforce in this dataset does not fall into the ECE I, II, or III categories. In fact, professionals in all roles are more likely to *not* have an educational background that falls into these categories; for example, 56% and 78% of lead and assistant center teachers have educational backgrounds that are not ECE-specific. Given this reality—that the early childhood workforce comes with a variety of preparation and education backgrounds—it is recommended that the Power to the Profession initiative also address the importance of creating alternative pathways for those who have non-ECE-specific degrees to become more effective early childhood educators. One potential solution is to develop a framework of stackable micro-credentials in early care and education, as well as afterschool and school-age care that has the potential to help professionals with non-ECE-based degrees obtain the professional development they need to be as effective as possible. Such a micro-credential framework would need to be folded into the approach Power to the Profession uses to classify educators and address the way the stackable micro-credentials translate into both community clock hour trainings as well as college credit.
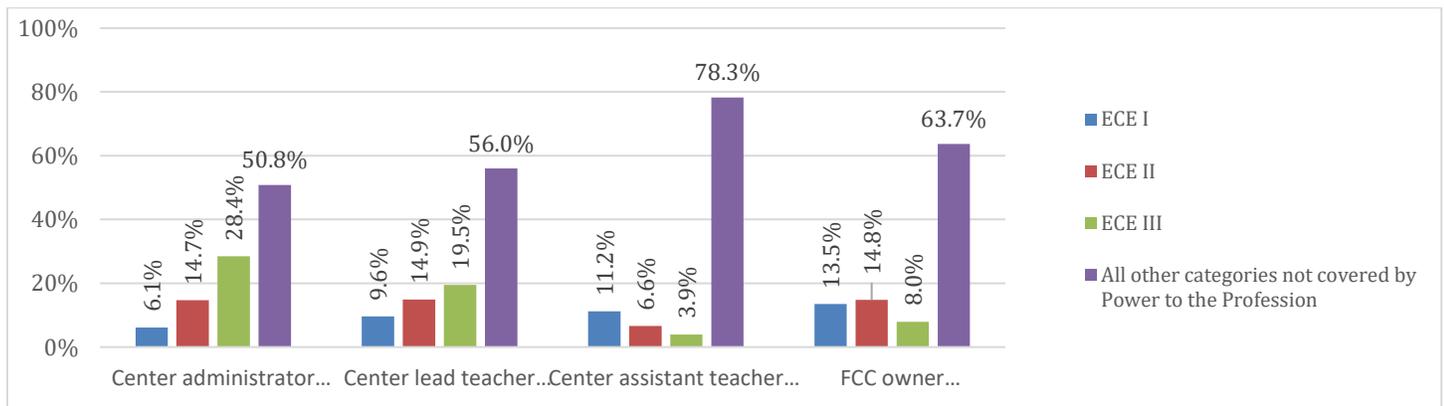

Figure 16. Power to the Professional Education Categories for Mandatory PER Registries

Child Development Associate (CDA) Credential

The Child Development Associate (CDA) credential is the certification in early childhood education recognized most widely. It is based upon 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 17, very few registry participants—only 3.5%—indicated that they held a current CDA. FCC owners and center lead teachers were most likely to have a current CDA. Encouraging participants to renew their CDA credentials—and thereby remain current with new developments in the field—would increase the percentages seen below and benefit participants as well as the children and families they serve.
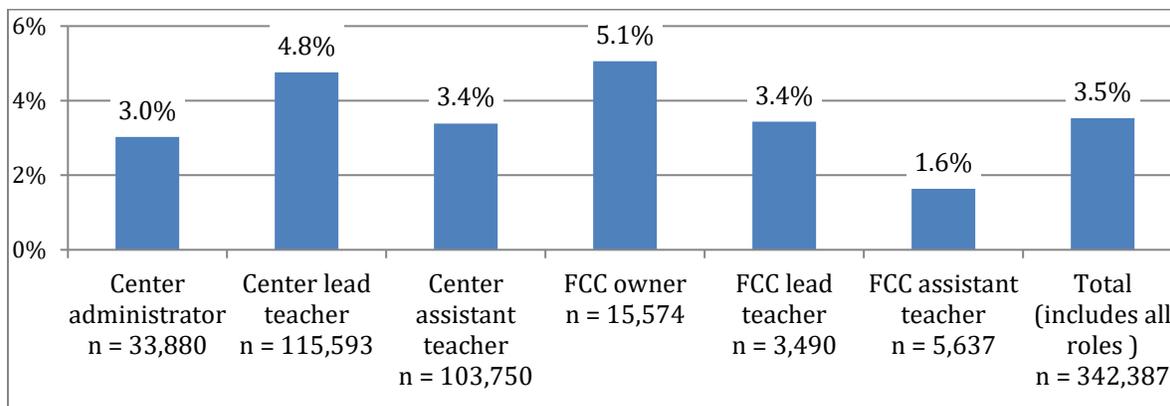

Figure 17. Current CDA Credential by Role

Figure 18 shows the type of CDA registry participants across all roles hold. The preschool CDA was held most widely (46%), followed by the infant-toddler (40%), and the FCC home (8%).
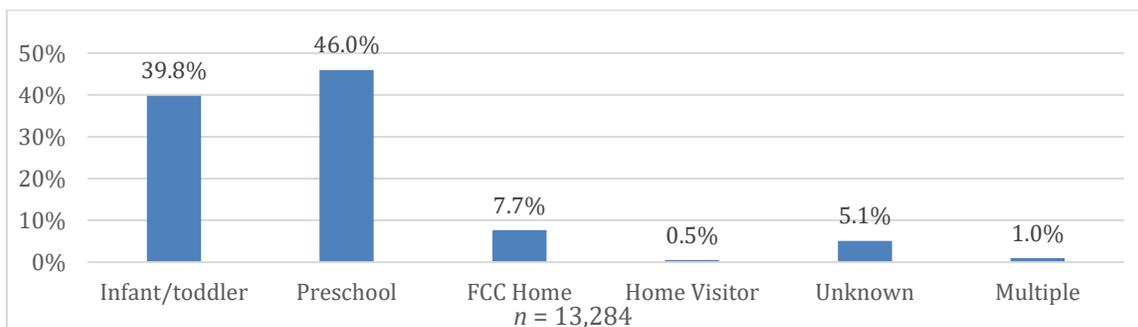
Figure 18. CDA Type across All Roles

Center-Based Staff: Median Hourly Wage and Its Relation 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 ability to recruit and retain talented professionals. This report addresses compensation, but it should be noted that 56% of participants across all roles had missing wage data (53% for center-based staff, 72% for FCC workers, and 32% for other program staff). Because of the volume of missing data, wage data for FCC professionals are not reported here. To address the lack of compensation information, it is recommended that registries make wage/salary data required elements that are updated at regular intervals, e.g., annually.

Figure 19 shows center participants' median hourly wages by role. As expected, center administrators had the highest median hourly wage at $17.85, with lead teachers earning $13.59 an hour, and assistant teachers $12.00 an hour.

The Bureau of Labor Statistics (BLS) gathers wage data across all economic sectors. However, the BLS categories reported below do not match the role categories PER uses perfectly. Based upon the most recent data from the BLS,[4] *education and child care administrators, preschools, and day care* had a median hourly wage of $23.63, which is higher than the $17.85 for center administrators found in this dataset. For the BLS category *preschool teacher (except special education)*, the median wage was $15.35,[5] which is also higher than the $13.59 for center lead teachers in this dataset, which is the role that corresponds to the BLS category most closely. Finally, for the BLS category *child care worker*, the median wage was $12.24,[6] which is close to the center assistant teachers' median wage ($12.00), 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 earned significantly less. The median wage for kindergarten teachers was $27.82 (calculated by taking the median annual salary $57,860 and dividing by 2,080 using May 2020 BLS figures[7]). In this dataset, center-based lead teachers with a bachelor's degree earned $14.73 an hour (see below), approximately half the national median wage for kindergarten teachers.
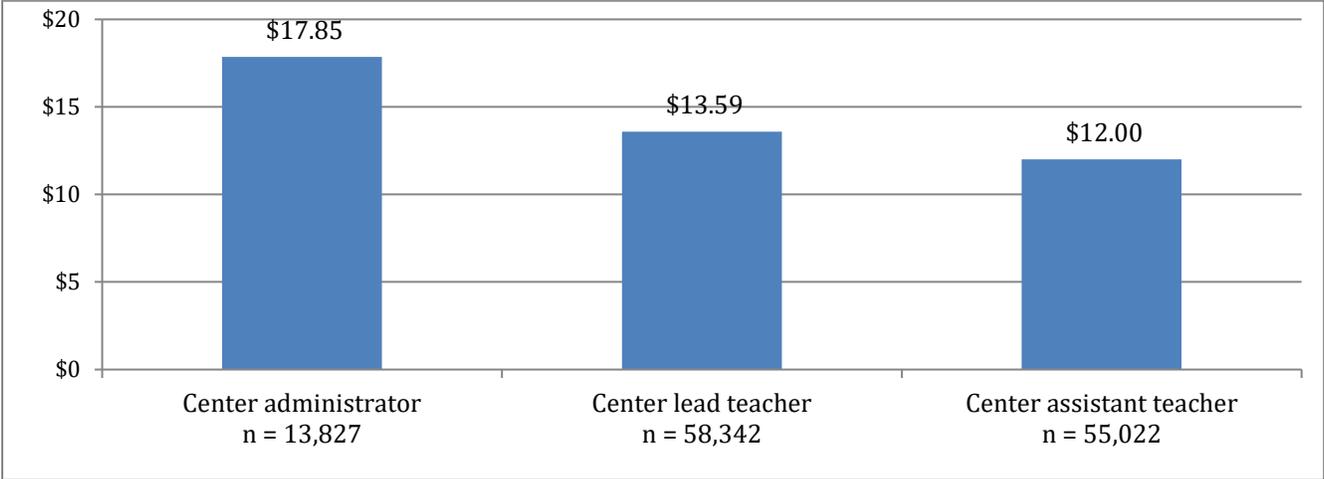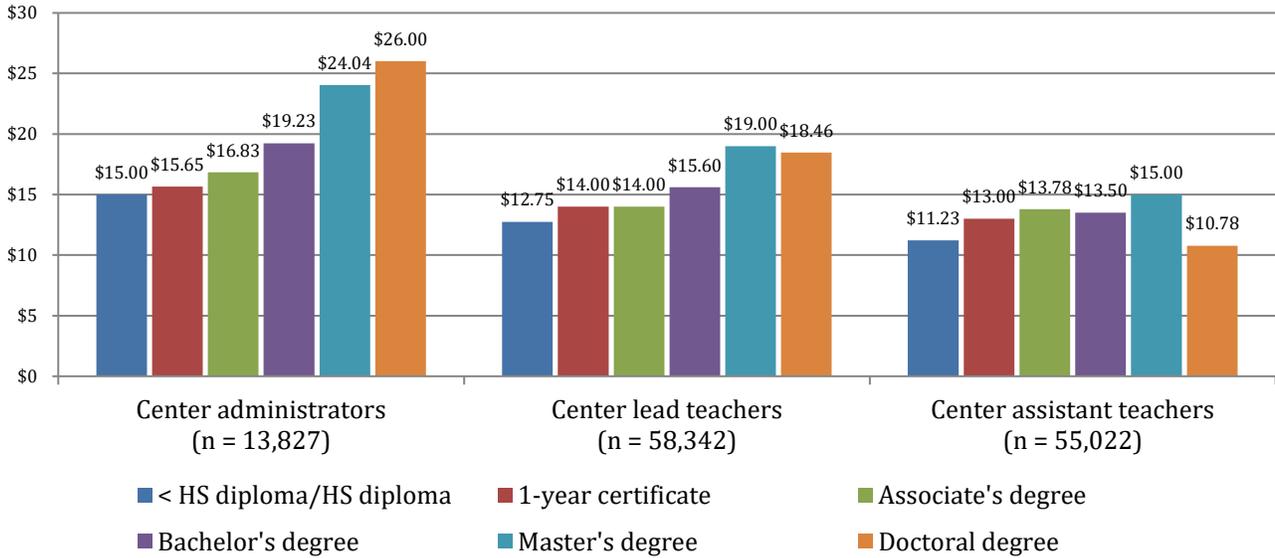

Note. Results are based upon data from all registries except Maine.

Figure 19. Median Hourly Wage for Center and FCC Professionals

Center-Based Staff: Median Hourly Wage and Education

As Figure 20 shows, in general, having more education was associated with higher earnings, particularly for center-based administrators and lead teachers (see Figure 36). The effect of additional education on assistant teachers' 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 increases in their wage status.

Note. Results are based upon data from all registries except Maine.

Figure 20. Median Hourly Wage for Center-Based Professionals by Education Attainment

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

Figure 21 shows the median hourly wages by age group taught for center lead and assistant teachers combined. For lead teachers, the 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 multiple age groups. The same pattern was evident with assistant teachers but was less pronounced.
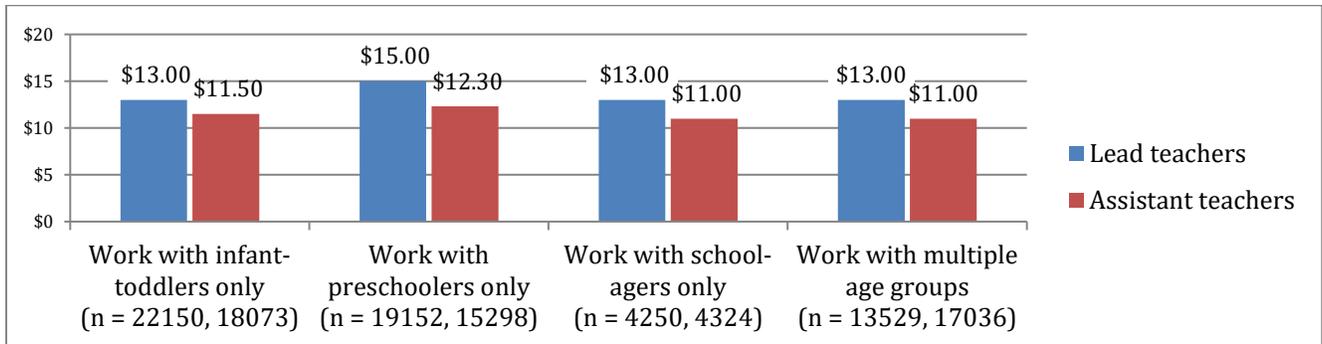
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 21. Center-Based Teachers: Median Hourly Wage by Age Group Served

Figures 22 and 23 show center lead and assistant teachers' median hourly wages by age group served and bachelor's degree attainment. Center lead teachers with bachelor's degrees earned more on average than center leads without bachelor's degrees across age groups. The difference ranged from $2.22 per hour for those who work with infants-toddlers to $3.14 for those who work with multiple age groups. Center assistant teachers with bachelor's degrees also earned more than those without a degree, but the differences were smaller than those found for lead teachers, and ranged from $1.17 per hour for those who work with infants-toddlers to $2.50 for those who work with school-agers.
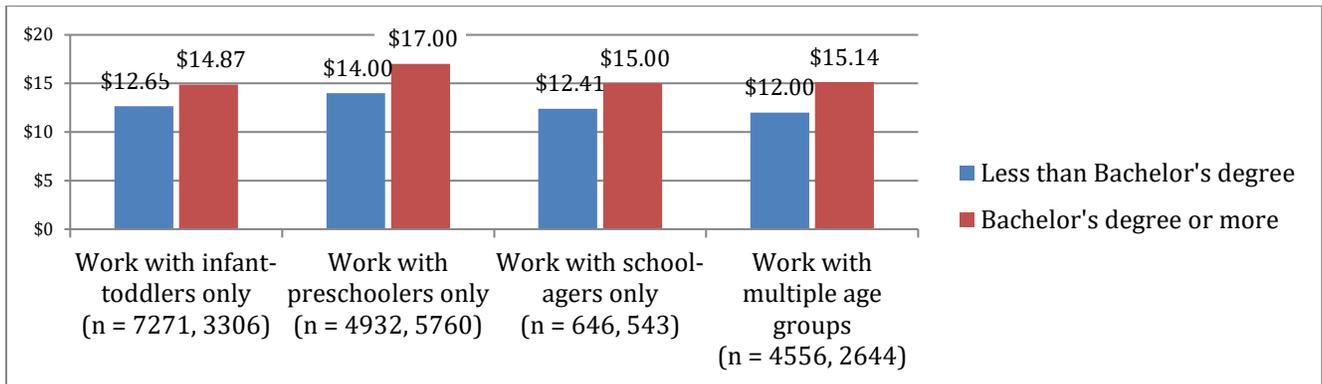
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 22. Center-Based Lead Teachers: Median Hourly Wage by Bachelor Degree Attainment and Age Group Served
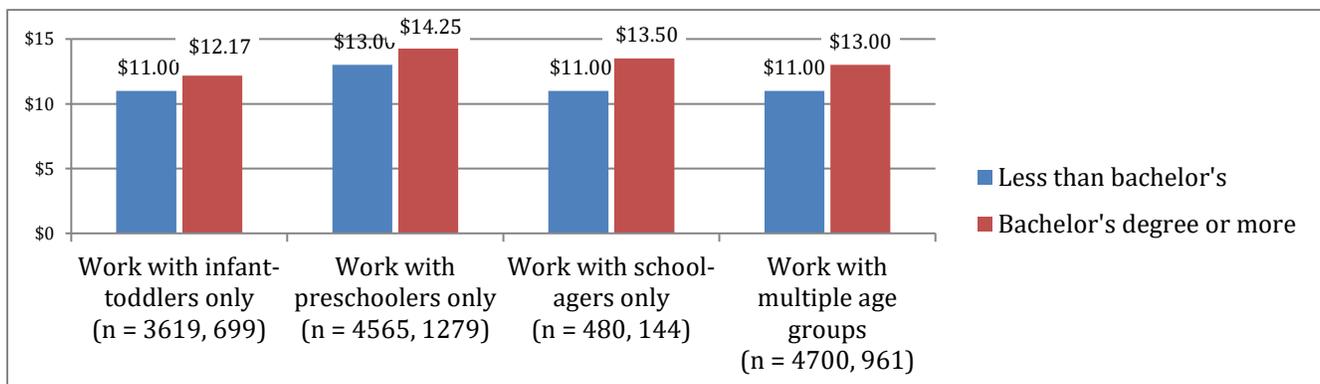
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 23. Center-Based Assistant Teachers: Median Hourly Wage by Bachelor Degree Attainment and Age Group Served

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

Figure 24 shows that experience in the field tended to be related to center staff's median hourly wage. 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 associated potential to earn additional credentials, can result in higher wages.
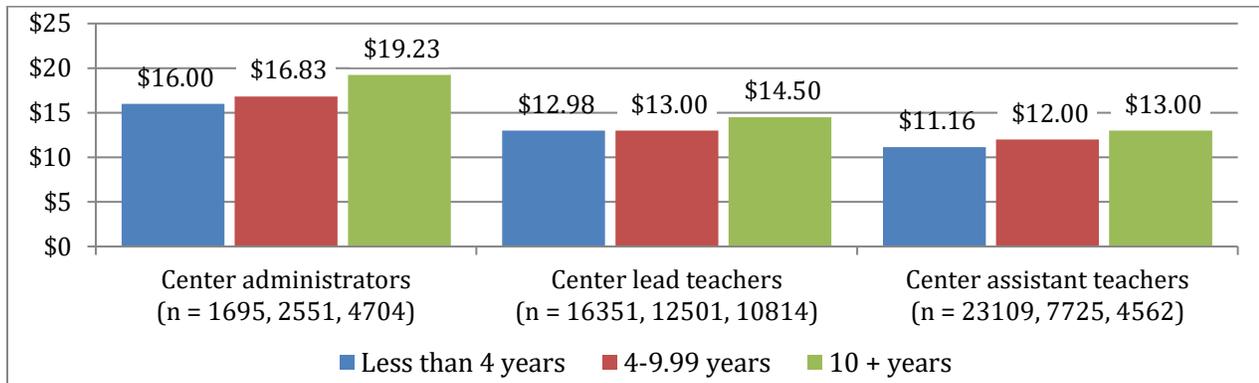
Note. Results are based upon data from the Arizona, Connecticut, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 24. Center Staff's Median Hourly Wage by Role and Years in Field

Professional Development: Training Hours

Figure 25 shows the 2019 training hours reported by category for those participants who were employed throughout 2019. FCC lead teachers were most likely to have more than 10 hours (75%), followed by other program administrators (49%), FCC owners (47%), center administrators (46%), and center lead teachers (45%). Other program assistant teachers were the least likely to have more than 10 hours (25%), followed by other program lead teachers (33%) and center assistant teachers (36%).

Note. Results are based upon data from all registries except Connecticut.

Figure 25. Total Training Hour Categories by Major Roles

Figure 26 shows the total clock hour category by educational attainment. Participants with an associate's degree were most likely to report at least 10 training hours (54%), followed by those with bachelor's degrees (49%). It is interesting to note that participants with the highest education level (Master's/doctoral degree) and those with the lowest education level (high school diploma or less) had the same percentage, 10 hours or more (49%
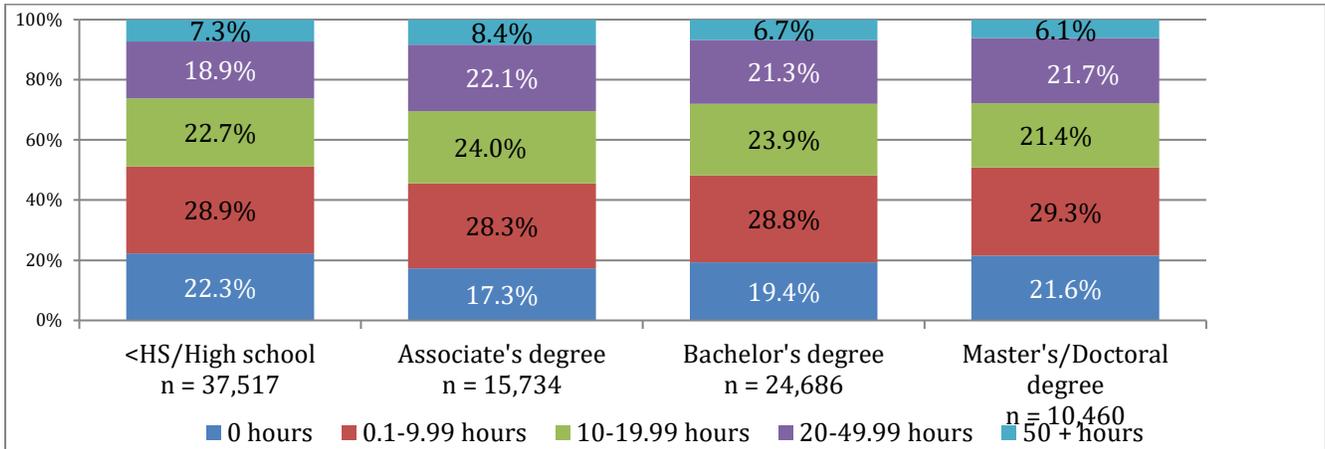
Figure 26. Total Training Hour Categories by Highest Level of Education

Figure 27 shows training hour categories by age group served. Staff who work with infants/toddlers were most likely to report at least 10 training hours (70%), followed by those who work with multiple age groups (69%), those who work with preschoolers (69%), and those who work with school-agers (62%).
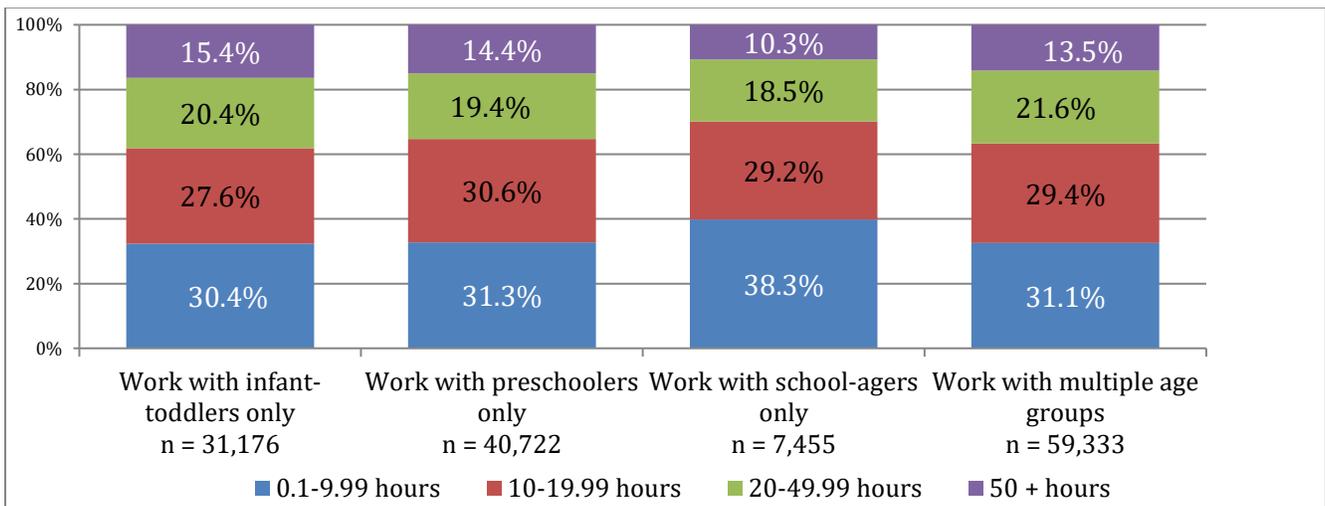
Figure 27. Total Training Hour Categories by Age Group Served

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

As shown in Table 4, for all participants with some training hours, the mean and median number of hours from community-based training was higher than the mean and median for college coursework.

Table 4. Descriptive Statistics for 2019 Training Hours by Source for All Participants with Some Training (n = 71,216)

	Community-based training hours	**Converted college credits in hours**	**Total training hours**
Mean	17.0	6.0	23.2
Median	12.0	0.0	12.0
Minimum	0.0	0.0	0.1
Maximum	497.0	810.0	967.0

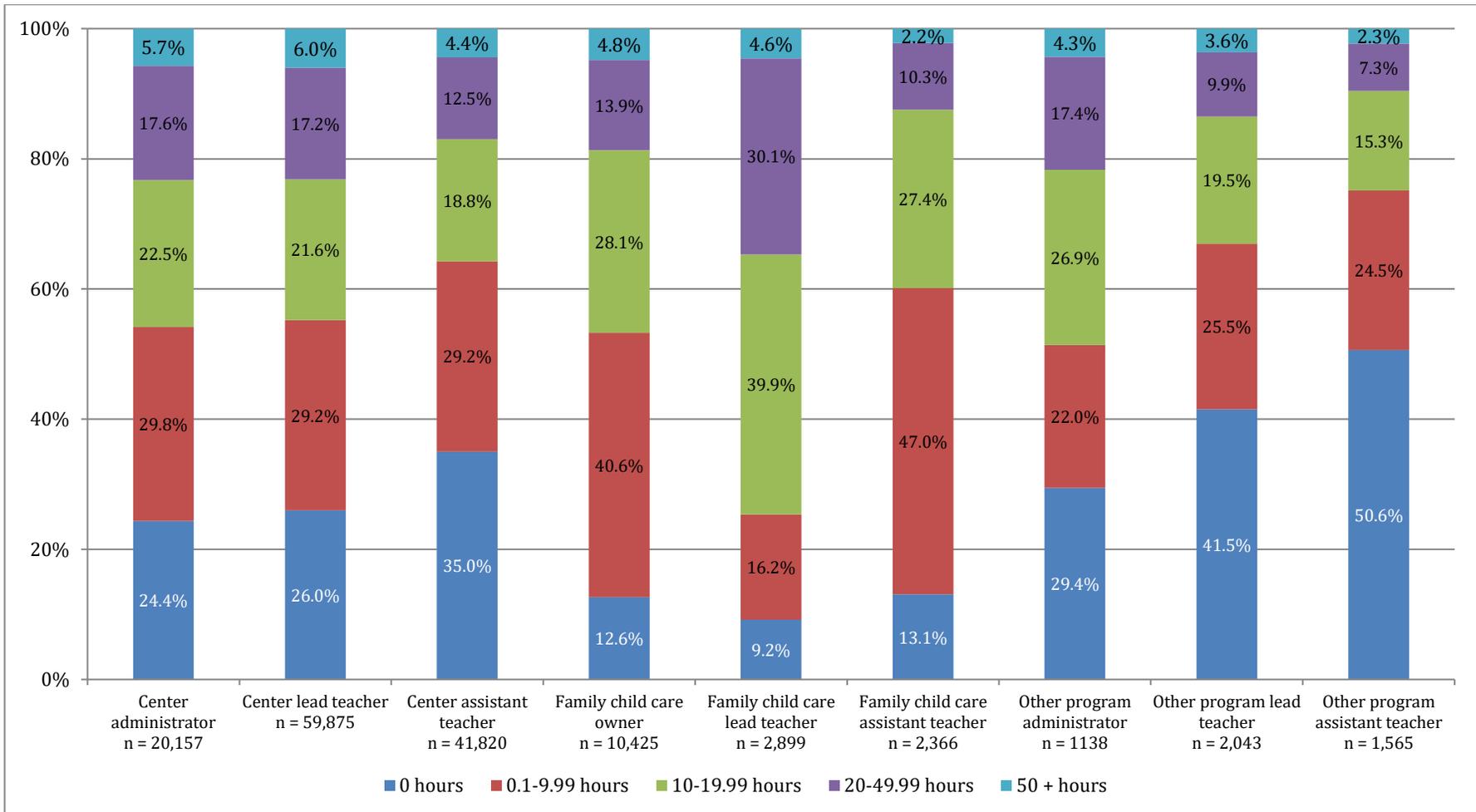*Note.* Results are based upon data from the Arizona, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

For all participants with valid training hour data, nearly all training hours (96.6%) derived from community-based training, with only 3.4% from college coursework converted to clock hour data. Table 8 shows the percentage of training hours by source for all roles. Center lead teachers had the highest percentage of training hours from college courses (4.6%), followed by center administrators (4.0%), and FCC other roles.

Table 5. 2019 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	96.0%	4.0%	8,787
Center lead teacher	95.4%	4.6%	27,290
Center assistant teacher	97.6%	2.4%	15,118
Center other role	97.9%	2.1%	4,750
FCC owner	97.7%	2.3%	6,603
FCC lead teacher	98.4%	1.6%	2,152
FCC assistant teacher	99.4%	0.6%	1,852
FCC other role	96.0%	4.0%	1,147
Other program administrator	98.3%	1.7%	730
Other program lead teacher	97.6%	2.4%	1,057
Other program assistant teacher	98.2%	1.8%	659
Other program other role	100.0%	0.0%	90
Total	*96.6%*	*3.4%*	*70,235*

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

As Figure 28 shows, higher percentages of training hours derived from college coursework for participants with less than a bachelor's degree than those with a bachelor's degree.

Note. Results are based upon data from the Arizona, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.
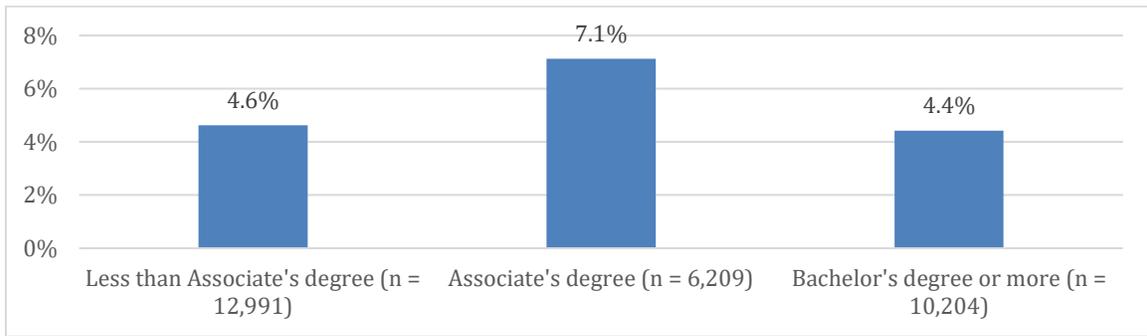
Figure 28. Percentage of Training Hours from College Courses by Educational Attainment

Training Hours by NWRA Core Knowledge Areas

The NWRA created the Alliance Core Knowledge Areas to provide the ability to aggregate and compare training hour emphases across registries. The seven areas (see Table 6) were designed to cover the range of professional development content covered by training opportunities in the field. Twelve registries have aligned their training hour data with the Core Knowledge Areas and provided data for this report. However, many participants did not have data for all of their reported training hours that were coded fully. Thus, in 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 2019 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, 2019 and had valid training data for 2019.

Table 6. 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** |

Table 7 shows descriptive statistics by Core Knowledge Area for all roles. Because training often covers more than one Core Knowledge Area, the total number of hours reported here by Core Knowledge Area will be greater than the total number of training hours completed in 2019 as reported in Table 2 and other figures.

Table 7. Descriptive Statistics for 2019 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	2.24	2.64	3.70	0.83	1.12	0.68	1.64
Median	0.0	0.0	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	399.5	248.0	504.0	240.0	250.0	288.0	320.0

Note. Results are based upon data from Arizona, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries. *N* = 117,306 for all areas. Illinois and Ohio do not code training hours for the administration and management category.

Figure 29 shows the mean percentage of training hours by Core Knowledge Area for participants with any training hours in 2019; note that the percentages sum to more than 100% because professional development may cover more than one area. Across all roles, Health, Safety, and Nutrition accounted for the highest percentage (34%), followed by Teaching and Learning (28%), which accounted for the most training in the 2019 NWRA dataset. The Core Knowledge Areas of Administration and Management (5%) and Observing, Documenting, and Assessing (7%) accounted for the fewest number of training hours across all roles.
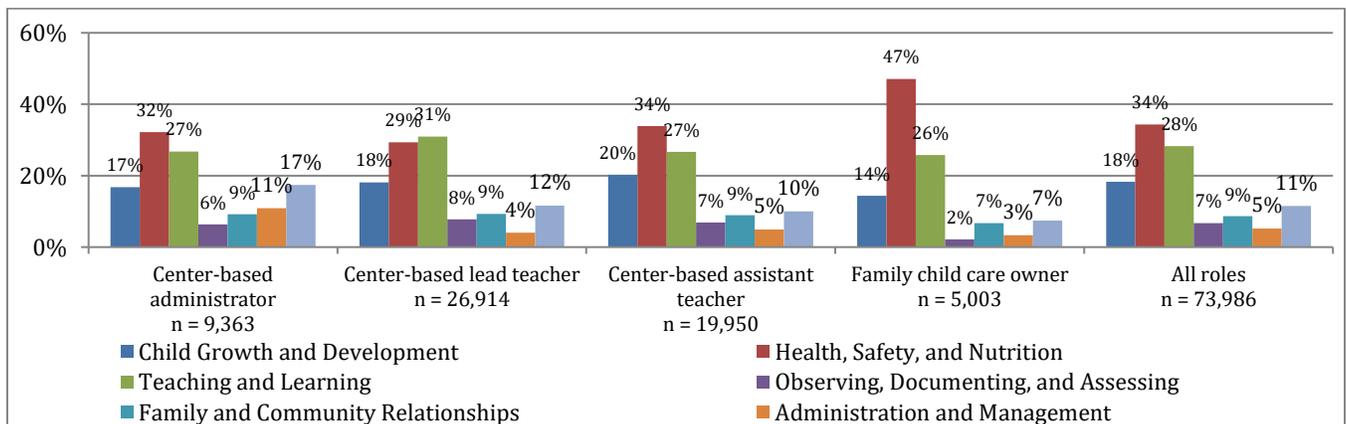
Note. Results are based upon data from Arizona, Miami-Dade (FL), Illinois, Minnesota, Missouri, Montana, New Jersey, Nevada, New York, Ohio, Pennsylvania, and Wisconsin registries.

Figure 29. Mean Percentage of Training Hours by Core Knowledge Area for Participants with Some Training by Major Role

Changes in Employment, Education, and Role between the 2019 and 2021 Datasets

Beginning with the 2015 dataset, all participating PER registries assigned participants a unique identifier to be used for NWRA data analysis purposes.[ii] Data from the registries that participated in both the 2019 and 2021 datasets were matched using this registry-specific identifier. Twelve registries participated in both the 2019 and 2021 dataset draws and provided data that could be matched: Arizona; Connecticut; Miami-Dade County (Florida); Illinois; Maine; Minnesota; Missouri; Montana; Nevada; New York; Ohio, and Wisconsin. The following analyses are based upon the matched records from these registries. It should be noted that because participants' identifiers are registry-specific, it is not possible to track registry participation across registries at present. Thus, these analyses were unable to capture individuals who participated in different registries in 2017 and 2019.

Of the twelve registries with matched data, seven are considered "mandatory": Arizona; Illinois; Maine; Montana; Nevada; Ohio, and Wisconsin. The other five—Connecticut, Miami-Dade County (Florida), Minnesota, Missouri, and New York—are designated as "non-mandatory" (although they may be mandatory for a portion of the workforce).

As noted earlier, this year's dataset spans the beginning of the COVID-19 pandemic, which resulted in unprecedented upheaval in the child care sector. However, because the data encompass professional registry participation from January 1, 2019 to January 1, 2021, the results reported here do not reflect the pandemic's effects on the child care workforce fully as its full effects were not felt until March 2020. Multiple single-year snapshots (e.g., before pandemic, during pandemic, after pandemic) would provide better information on the way COVID-19 has affected the child care workforce in PER registries.

As shown in Table 8, a total of 199,169 individual participant records were matched, yielding a retention rate of 54% between 2019 and 2021 for all twelve registries, in which individual registries ranged from 14% to 77%. Mandatory registries had a 55.3% retention rate, compared to 50.5% for non-mandatory registries.

Table 8. Participant Retention Rate from 2019 to 2021 Dataset by Registry

	AZ	CT	Miami-Dade (FL)	IL	ME	MN	MO	MT	NV	NY	OH	WI	Total
Number of 2019 participants that were also in 2021 dataset	20,478	16,180	2,857	52,449	677	9,650	6,520	2,940	5,368	13,367	54,239	14,444	199,169
Number in 2019 dataset	34,827	21,064	4,784	107,583	4,929	34,531	11,860	3,996	9,092	23,876	87,675	24,091	368,308
Retention rate from 2019 to 2021 dataset	58.8%	76.8%	59.7%	48.8%	13.7%	27.9%	55.0%	73.6%	59.0%	56.0%	61.9%	60.0%	54.1%

Note. Shaded columns indicate "mandatory" registries.

[ii] Participants' real registry ID codes were not used to ensure their anonymity.

Figure 30 shows the percentage of participants who were in both datasets by role in the 2019 dataset. The highest percentage was center lead teachers (40%), followed by center assistant teachers (21%), center administrators (12%), and FCC owners (8%).
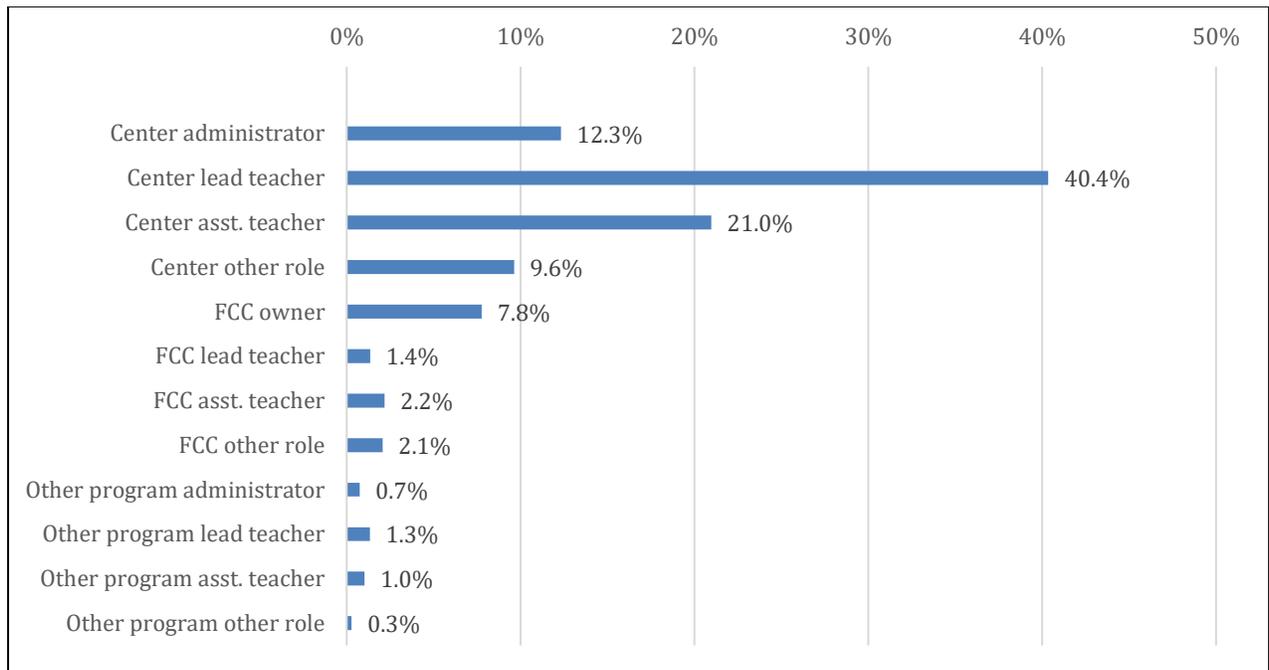

Figure 30. Participants in both 2019 and 2021 Datasets: Role of Participants in 2019 Dataset (n = 156,882)

Figure 31 shows the employment status for all registries over time, as well as those considered mandatory and non-mandatory. For all registries, 77% of participants were employed in both datasets, 17% were employed in 2019, but unemployed in 2021, 2% were unemployed in 2019, but employed in 2021, 3% were unemployed in both datasets, and 1% were presumed retired in either 2019 or 2021 (In this analysis, participants who were 65 years or older and were unemployed in either dataset were coded "retired"). Except for those unemployed in both datasets, there were only small differences in these percentages between mandatory and non-mandatory registries.

Figure 32 shows the percentage of participants who increased their educational attainment between the 2019 and 2021 datasets by major role and mandatory registry status. It is not surprising that compared to non-mandatory registries, mandatory registries show a higher percentage of participants who reported higher educational attainment across all major roles, as mandatory registries are more likely to capture changes over time.

Examining all registries, center lead teachers were most likely to report increased educational attainment (10%), followed by center administrators (8%), center assistant teachers (8%), and FCC owners (5%). The pattern differed slightly among non-mandatory registries; center assistant teachers were slightly more likely to report more education (7%) than center administrators (6%).

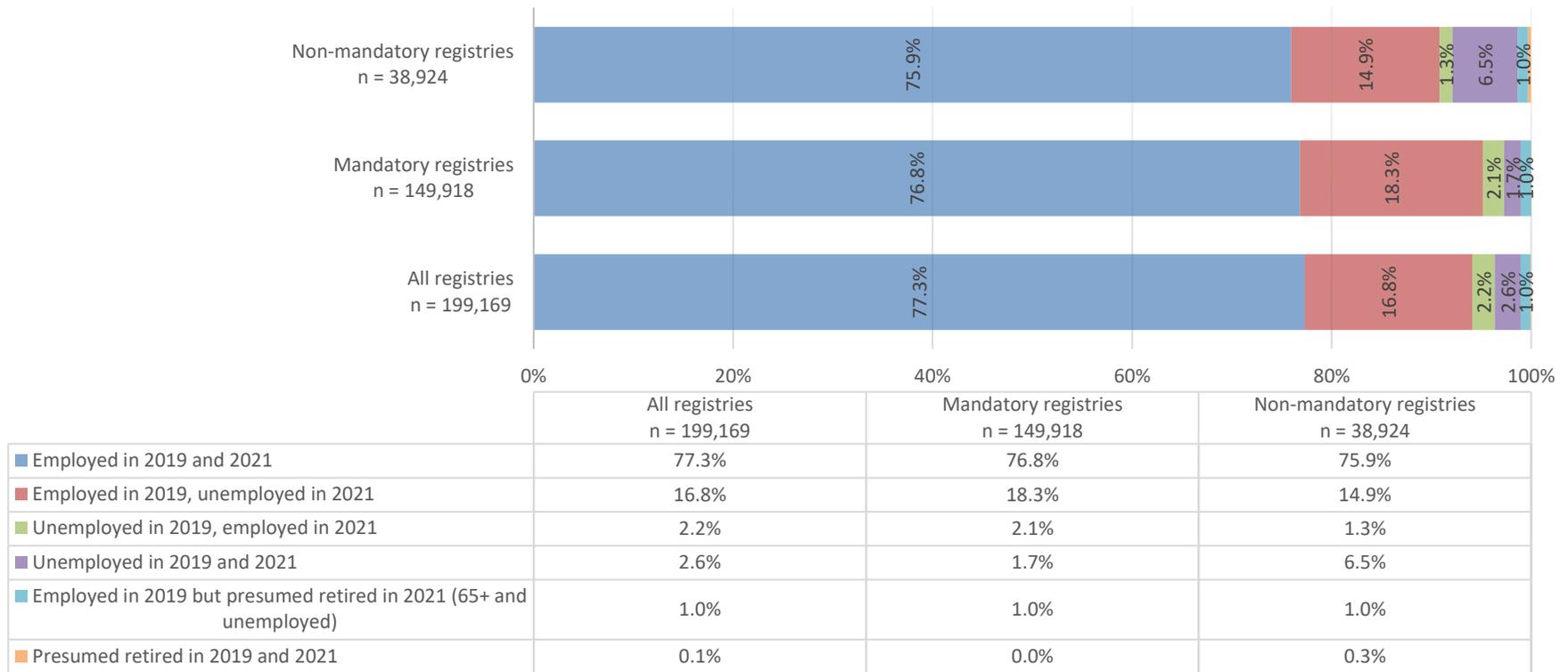|	All registries n = 199,169	Mandatory registries n = 149,918	Non-mandatory registries n = 38,924
■ Employed in 2019 and 2021	77.3%	76.8%	75.9%
■ Employed in 2019, unemployed in 2021	16.8%	18.3%	14.9%
■ Unemployed in 2019, employed in 2021	2.2%	2.1%	1.3%
■ Unemployed in 2019 and 2021	2.6%	1.7%	6.5%
■ Employed in 2019 but presumed retired in 2021 (65+ and unemployed)	1.0%	1.0%	1.0%
■ Presumed retired in 2019 and 2021	0.1%	0.0%	0.3%

Figure 31. Participants in both 2019 and 2021 Datasets: Employment Status by Registry Mandatory Status

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Because of registries' different requirements and policies, it is likely that many participants have not increased their education. On the other hand, it is not known to what extent the changes in educational level observed actually occurred during the two years between the dataset draws. Further analyses that examine the data for degrees conferred would shed light on the extent to which degrees were actually obtained during the two-year window. However, not all education records contain this information.
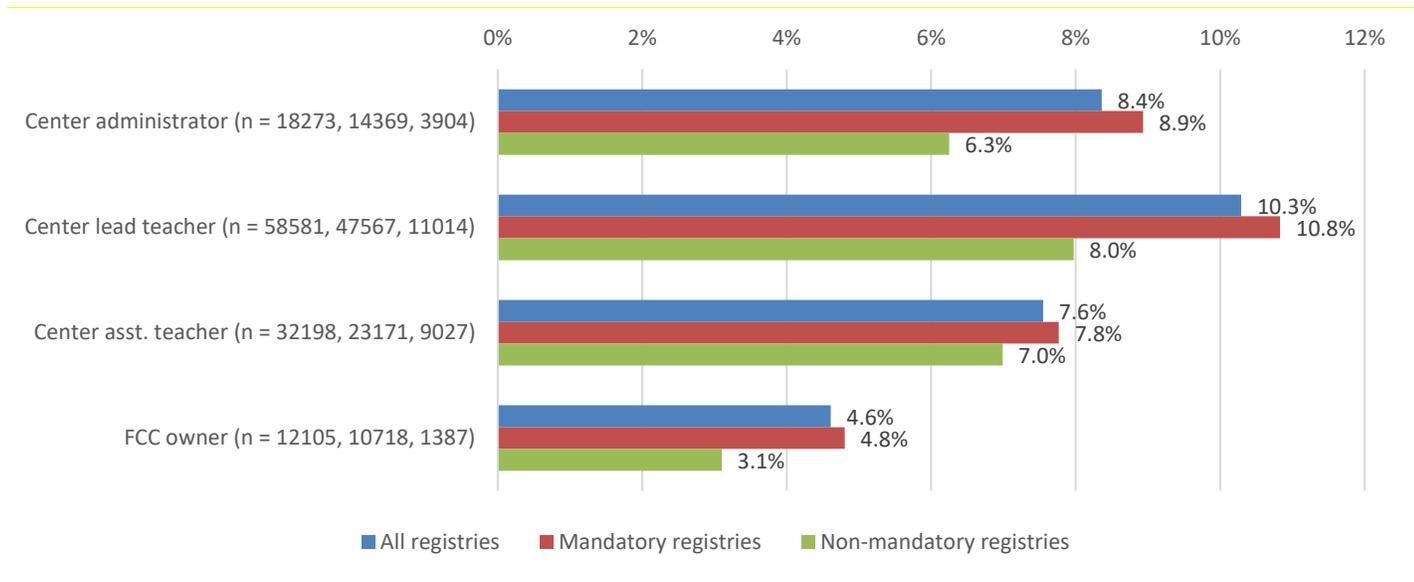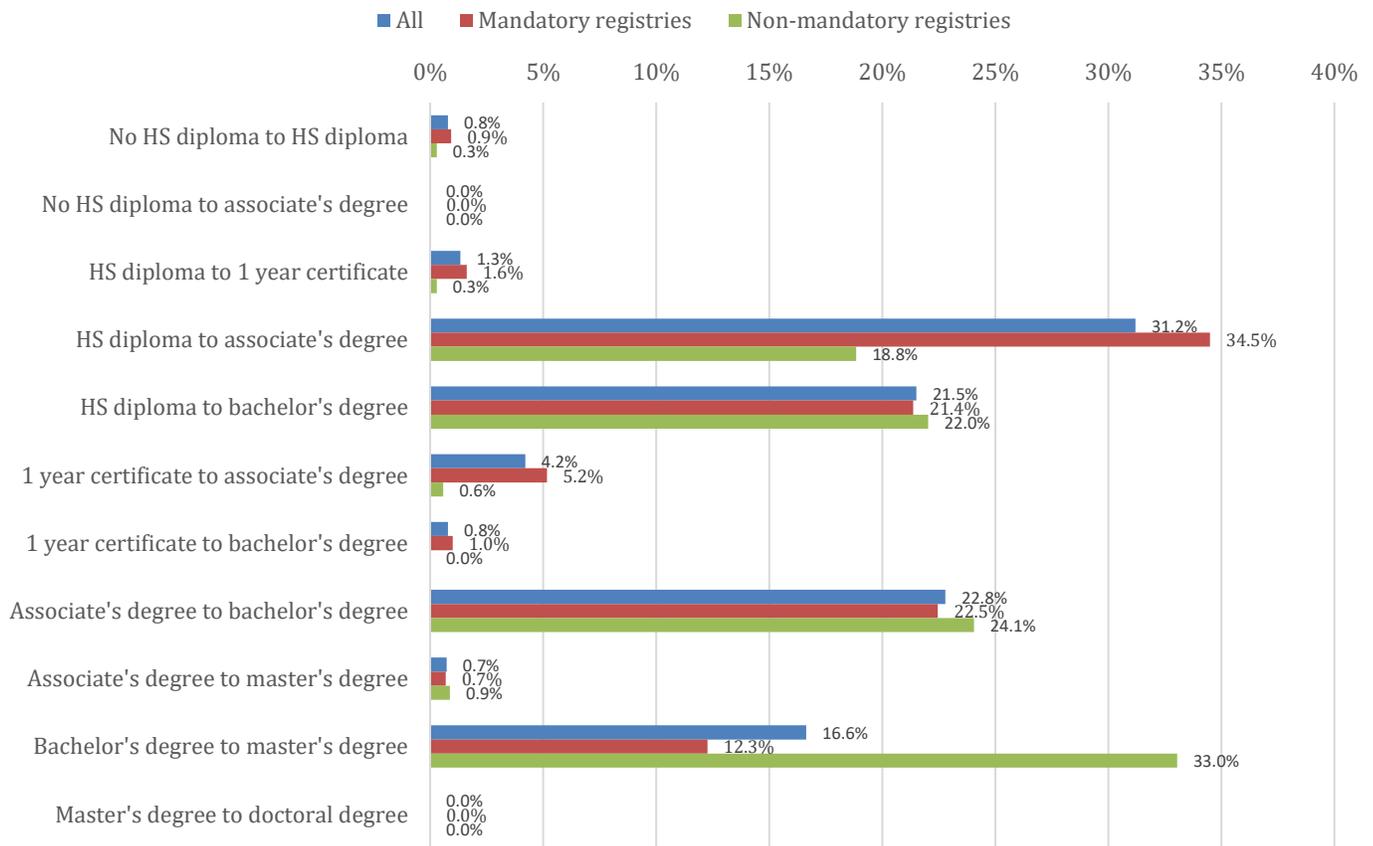

Figure 32. Participants in both 2019 and 2021 Datasets: Participants who Increased Their Highest Level of Education by Major Role in the 2021 Dataset by Registry Mandatory Status

Figure 33 shows the way the highest level of education changed for participants who were center lead teachers in the 2019 dataset. Looking across all registries, nearly one third (31%) of these teachers moved from having a high school diploma to having an associate's degree. Similar percentages moved from a high school diploma to a bachelor's degree (22%) and from an associate's degree to a bachelor's degree (23%). Finally, 17% of center teachers reported moving from a bachelor's degree to a master's degree as their highest level of education in 2021.

For mandatory registries, over one-third (35%) of center lead teachers moved from having a high school diploma to an associate's degree, while roughly one-fifth moved from a high school diploma to a bachelor's degree (21%) and from an associate's degree to a bachelor's degree (23%). Finally, 12% of center teachers reported moving from a bachelor's degree to master's degree as their highest level of education in 2021.

For registries who did not require participation in a registry, one-third (33%) of center lead teachers moved from a bachelor's to a master's degree, while approximately one-quarter (24%) moved from an associate's to a bachelor's degree. Approximately one fifth (19%) reported moving from a high school diploma to an associate's degree and 22% moved from a high school diploma to a bachelor's degree.

Mandatory and non-mandatory registries showed different patterns of increased educational attainment. Center lead teachers in non-mandatory registries were far more likely to move from a bachelor's degree to a master's degree than those in mandatory registries (33% vs. 12%). On the other hand, participants in mandatory registries were more likely to move from a high school diploma to an associate's degree than those in non-mandatory registries (35% vs. 19%).

Note. Mandatory registries *n* = 1,043, non-mandatory registries *n* = 819, all registries *N* = 1,862.

Figure 33. Participants in Both the 2019 and 2021 Datasets: Center Lead Teachers' Change in Educational Attainment by Registry Mandatory Status

Tables 9 through 11 show the percentages of participants who maintained or changed roles between the two datasets. The figures for all registries, mandatory and non-mandatory, 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 roles that actually occurred.

Table 9 shows the percentage of participants for all PER registries who maintained or changed roles between the two datasets. Among center administrators in the 2019 dataset, most (85%) were also center administrators in the 2021 dataset. However, 7% of center administrators in 2019 reported that their role was center lead teacher in 2021. Participants who were center lead teachers in 2019 were most likely to remain so in 2021 (85%), with 5% becoming center assistant teacher and 4% center administrators in 2021. One fifth (20%) of center assistant teachers became center lead teachers between the two datasets. Nearly all family child care owners (92%) maintained the same role between the two datasets.

Participants who work in other programs (not centers or family child care) tended to remain in other programs, although some of the workforce moved to center-based positions. Other program lead teachers were most likely to maintain that role (80%), but 9% became center lead teachers and 3% other program administrators. Other program administrators were also most likely to maintain the same role (86%), but 7% reported that they changed to center-based positions.

Table 9. Participants in both the 2019 and 2021 Datasets: Changes in Role for Participants in All PER Registries

Role in 2021	Role in 2019					
	Center administrator (*n* = 17,653)	Center lead teacher (*n* = 58,399)	Center assistant teacher (*n* = 38,102)	FCC owner (*n* = 11,532)	Other program administrator (*n* = 915)	Other program lead teacher (*n* = 1,315)
Center administrator	85.3%	4.4%	1.3%	1.6%	5.0%	1.1%
Center lead teacher	6.8%	85.1%	20.4%	1.6%	1.2%	8.7%
Center asst. teacher	1.3%	5.2%	67.0%	0.6%	1.3%	1.7%
FCC owner	0.5%	0.4%	0.2%	91.6%	1.2%	0.3%
Other program administrator	1.0%	0.0%	0.0%	0.3%	86.3%	3.3%
Other program lead teacher	1.0%	1.2%	0.2%	0.0%	3.2%	80.3%
Other role not listed	4.1%	3.7%	10.9%	4.3%	1.8%	4.6%

Note. Cells with 5% or higher are highlighted.

Table 10 shows the percentage of participants in mandatory registries who maintained or changed roles between the two datasets. Most center administrators in the 2019 dataset (83%) were also center administrators in the 2021 dataset. However, 8% of center administrators in 2019 reported that their role in 2021 was center lead teacher. Participants who were center lead teachers in 2019 were most likely to remain center teachers in 2021 (84%), with 6% changing to center assistant teacher and 5% to center administrator in 2021. Nearly a quarter (24%) of center assistant teachers became center lead teachers between the two datasets, while nearly all family child care owners (91%) maintained the same role between the two datasets.

Participants who work in other programs (not centers or family child care) tended to remain in those programs, although some moved to center-based positions. Other program administrators' teachers were most likely to maintain that role (85%), but 5% became center administrators and 4% other program lead teachers. Other program lead teachers were also most likely to maintain the same role (76%), but 10% reported that they became center lead teachers.

Table 10. Participants in both 2019 and 2021 Datasets: Changes in Role for Mandatory Registry Participants

Role in 2021	Role in 2019					
	Center administrator (*n* = 13,065)	Center lead teacher (*n* = 43,174)	Center assistant teacher (*n* = 27,392)	FCC owner (*n* = 10,118)	Other program administrator (*n* = 641)	Other program lead teacher (*n* = 884)
Center administrator	83.4%	4.9%	1.5%	1.6%	5.3%	1.2%
Center lead teacher	8.1%	83.9%	24.3%	1.6%	1.6%	10.1%
Center asst. teacher	1.4%	5.9%	61.3%	0.4%	1.4%	1.9%
FCC owner	0.5%	0.5%	0.3%	91.4%	1.4%	1.8%
Other program administrator	0.4%	0.1%	0%	0.2%	84.7%	4.2%
Other program lead teacher	0.1%	0.4%	0.2%	0%	4.1%	76.0%
Other role not listed	6.1%	4.3%	12.4%	4.8%	1.5%	4.8%

Note. Cells with 5% or higher are highlighted.

Table 11 shows the percentage of participants in non-mandatory registries who maintained or changed roles between the two datasets. Most center administrators in the 2019 dataset (91%) maintained that role in the 2021 dataset. Participants who were center lead teachers in 2019 were most likely to remain center teachers in 2021 (87%), with 3% becoming center assistant teacher and 5% other program lead teachers in 2021. Center assistant teachers in 2019 were likely to remain so in 2021 (83%), although 9% became center lead teachers. Nearly all family child care owners (96%) maintained the same role between the two datasets.

Participants who work in other programs (not centers or family child care) tended to remain in other programs, although some of the workforce moved to center-based positions. Other program administrators were most likely to maintain that role (90%), but 5% became center administrators. Other program lead teachers were also most likely to maintain the same role (89%), but 6% reported that they moved to center lead teacher positions.

Table 11. Participants in both the 2019 and 2021 Datasets: Changes in Role for Non-Mandatory Registry Participants

Role in 2021	Role in 2019					
	Center administrator (*n* = 3,697)	Center lead teacher (*n* = 11,059)	Center assistant teacher (*n* = 10,011)	FCC owner (*n* = 1,365)	Other program administrator (*n* = 269)	Other program lead teacher (*n* = 405)
Center administrator	91.0%	2.5%	0.6%	1.7%	4.5%	1.0%
Center lead teacher	2.3%	87.3%	8.9%	0.7%	0.4%	6.2%
Center asst. teacher	1.0%	3.2%	83.3%	1.1%	1.1%	1.2%
FCC owner	0.2%	0.1%	0%	95.6%	0.7%	0%
Other program administrator	3.5%	0%	0%	0.4%	90.3%	1.5%
Other program lead teacher	0.1%	5.0%	0.2%	0.1%	0.7%	88.6%
Other role not listed	1.9%	1.9%	7.0%	0.4%	2.3%	1.5%

Note. Cells with 5% or higher are highlighted.

Based upon Tables 9-11, 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. The largest longitudinal difference between mandatory and non-mandatory registry participants was found among center assistant teachers. In mandatory registries, these teachers were more likely to become lead teachers (24%) than their peers in non-mandatory registries (9%). The pandemic likely has had a significant effect on child care employment, education, and the shift in roles within registries, but because the data reflect a two-year span (2019-2021), COVID-19's effects cannot be isolated.

How do the NWRA 2021 education data compare to the National Survey of Early Care and Education data?

Because of the NWRA dataset's nature, it is not a representative sample of the early childhood and school-age workforce in the U.S. However, we can compare findings from this year's dataset, as well as the 2019 and 2017 datasets, to the most recent national survey of the early childhood workforce, the National Survey of Early Care and Education (NSECE).[8] Because the NSECE survey sampled early education workers across the U.S. randomly, its findings can be considered representative of the U.S. workforce. The NSECE survey's major weakness is its emphasis on self-reported data. On the other hand, the NWRA datasets consist largely of verified data on all registry participants who meet certain criteria, but the data are not representative of the U.S. 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 similar across datasets, as shown in Table 12. Slightly more than half (53%) of center-based teachers had a formal degree in the NSECE study, while 61% had a formal degree in the 2021 NWRA dataset. Further, the distribution of two-year degrees and advanced degrees was similar across the NSECE and 2021 Alliance datasets. However, in the 2021 NWRA dataset, there was a higher proportion of center teachers with a four-year degree (32%) compared to the NSECE study (26%). One of the factors that determines this difference may be that there are, in fact, increasing numbers of professionals in PER registries who have achieved degrees over the last five years.

Table 12. Comparison of Center-Based Teacher Degree Attainment in the NSECE and the NWRA Datasets

Degree type	2012 NSECE Study (*n* = 4,800)	2021 NWRA Dataset (*n* = 63,339)	2019 NWRA Dataset (*n* = 68,510)	2017 NWRA Dataset (*n* = 62,359)
Any degree	53%	61%	59%	47%
2-year degree	18%	19%	18%	17%
4-year degree	26%	32%	31%	24%
Graduate/ professional degree	9%	10%	9%	7%

As Figure 34 shows, 19% of the NSECE sample that worked with infants/toddlers held a bachelor's degree compared to the 30% found in the 2021 Alliance dataset. For center-based teachers who work with preschoolers, 45% held a bachelor's degree in the NSECE study compared to 58% in the 2021 NWRA dataset (see Figure 35). Overall, with respect to the highest level of education among center-based teachers, the NWRA datasets are comparable with the nationally representative NSECE study in 2012, but the percentages of participants who reported degrees in the NWRA datasets are consistently higher than in the NSECE study over time.
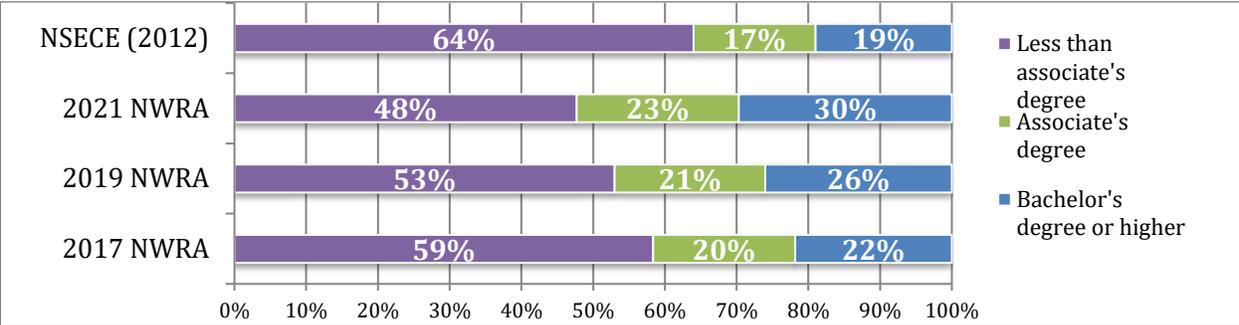
Figure 34. Comparison of Educational Attainment of Center Teachers Who Serve Infants-toddlers

Figure 35. Comparison of Educational Attainment of Center Teachers Who Serve Preschoolers

Featured Analyses for the 2021 Dataset: Examination of the Distribution of Workers and Workforce Characteristics by Race/Ethnicity

Like all other areas, the child care sector has suffered from historical and current inequities that have hampered the outcomes of children—particularly children of color, those with disabilities, and those whose home language is not English—as well as the workforce that serves them.[1] Given NWRA's commitment to advancing equity within the child care workforce to address systemic and structural barriers faced by child care professionals, as well as the children and families they serve, this report features two sets of analyses that examine racial/ethnic equity in the PER dataset. The first compares the distribution of workers' race/ethnicity across the participating registries with census data for adults 18-64 and children 0-5 to determine the extent to which the workforce matches working adults and young children's race/ethnicity. The second examines differences in such workforce characteristics as role, education, and training hours by race/ethnicity to provide a glimpse of the way professionals from different groups are faring.

A few notes about the terminology used in this section are necessary. White refers to Non-Hispanic Whites, Black refers to Non-Hispanic Blacks/African Americans, and Asian/Pacific Islander refers to Non-Hispanic Asians/Pacific Islanders. In addition to these three categories, the data are broken down by Hispanics and professionals who belong to Additional Categories, which includes Native Americans and other indigenous peoples, people who identify as other races, and those who are multi-racial.

Distribution of Workers by Race/Ethnicity

Figure 36 shows the participants' race/ethnicity for all registries. It also shows the percentages for the race/ethnicity categories for PER regions for adults 18-64 and children 0-5 from the 2019 U.S. Census. The figures for adults 18-64 provide a way to compare the distribution of workers across the registries to the working population in the U.S.

First, compared to the Census figures for adults 18-64, in all PER registries, Whites were under-represented, Blacks were over-represented, Hispanics' representation was approximately the same, Asians/Pacific Islanders were under-represented, and Additional categories were over-represented. Thus, in PER states, Blacks and Additional Categories participants were more likely to be part of the early childhood and school-age workforce compared to their White and Asian/Pacific Islander peers (who were more likely to work in other fields).

The third stacked bar shows the distribution of race/ethnicity for children 0-5. The U.S. child population is significantly more racially and ethnically diverse than the adult population. In 2020, children of color (under 18) constituted 53% of the child population, while adults of color constituted only 39% of the adult population.[9] Based upon these trends, the future of the U.S. population is one of increasing racial/ethnic diversity in which Whites will comprise a steadily shrinking portion of the population.

There is a body of research that has found that teachers and caregivers who reflect children's race and ethnicity—or who speak the language the child hears at home—benefit children's outcomes.[10] When these figures for children 0-5 were compared with the adult registry figures, Blacks were over-represented in the PER data, while Hispanics were under-represented. Asian/Pacific Islander professionals were also underrepresented slightly in the NWRA dataset. White and Additional Categories were represented approximately equally across both distributions. Increasing the representation of Hispanic and Asian/Pacific Islander professionals in PER registries will make the workforce more representative of the children and families they serve.
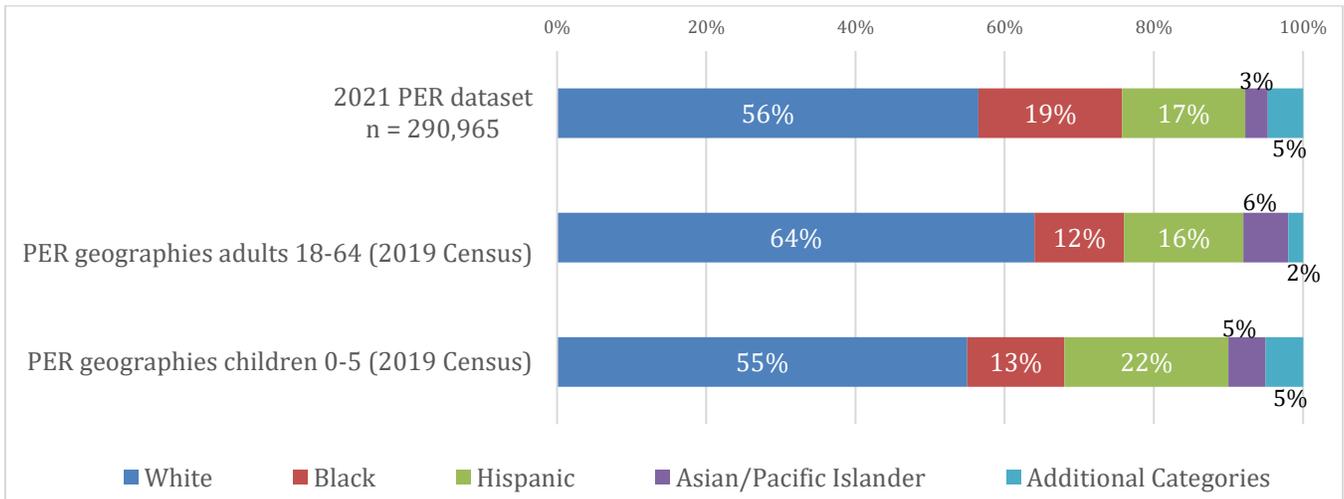
Figure 36. Race/Ethnicity for All Roles by Data Source

Workforce Characteristics by Race/Ethnicity

Figure 37 shows the distribution of center-based roles by race/ethnicity. While the percentages of Black, Asian, and Additional Categories participants in the roles shown here are approximately the same, the percentages of Whites and Hispanics differ. White participants are more likely to be administrators, while the converse was true for Hispanic participants. As will be discussed later, educational attainment—and the systematic and historical inequities in access to educational opportunities—play a large part in White professionals' predominance in center administrator positions.
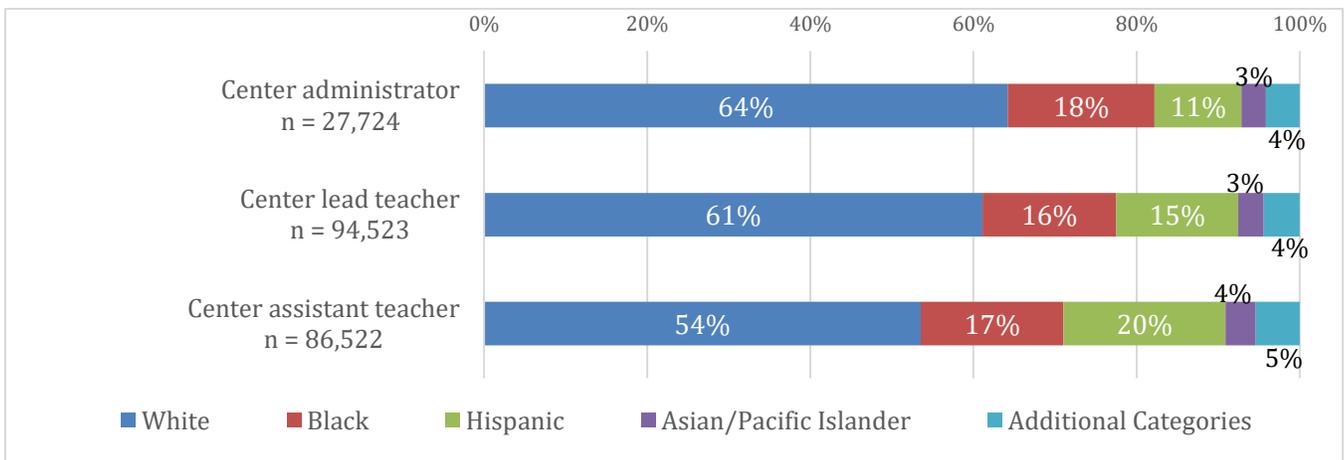

Figure 37. Race/Ethnicity of Center Participants by Role

Figure 38 shows the FCC roles' distribution by race/ethnicity, in which a different pattern emerges than in those in centers. The percentage of FCC owners who are Black and Hispanic was much higher than that of center administrators. The percentage of FCC owners who are Black was nearly the same as those who are White, while the percentage of Hispanic FCC owners was approximately half of those two. FCC homes that Whites operated tended to be larger and employed lead teachers, which explains the large differences seen here. On the other hand, the percentage of assistant teachers in homes was distributed nearly equally between Whites, Blacks, and Hispanics. FCC homes play a crucial role in child care for all communities, but particularly for communities of color.
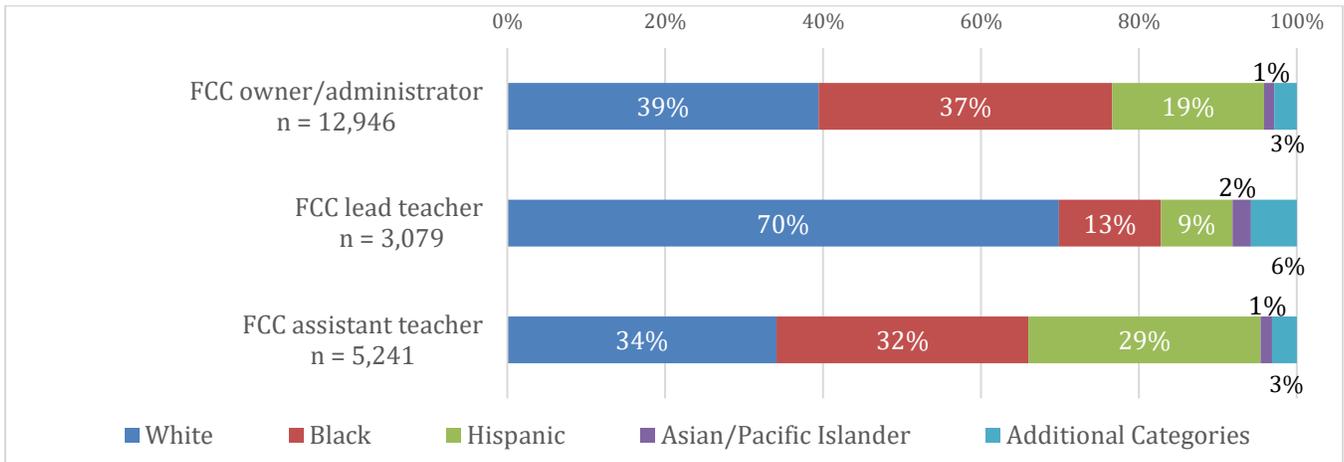
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Figure 38. Race/Ethnicity of FCC Participants by Role

Among professionals who work in other programs (see Figure 39), White participants were generally more likely to be administrators than lead or assistant teachers. There were approximately the same percentage of Black participants across roles, while a far larger proportion of Hispanic participants were assistant teachers.
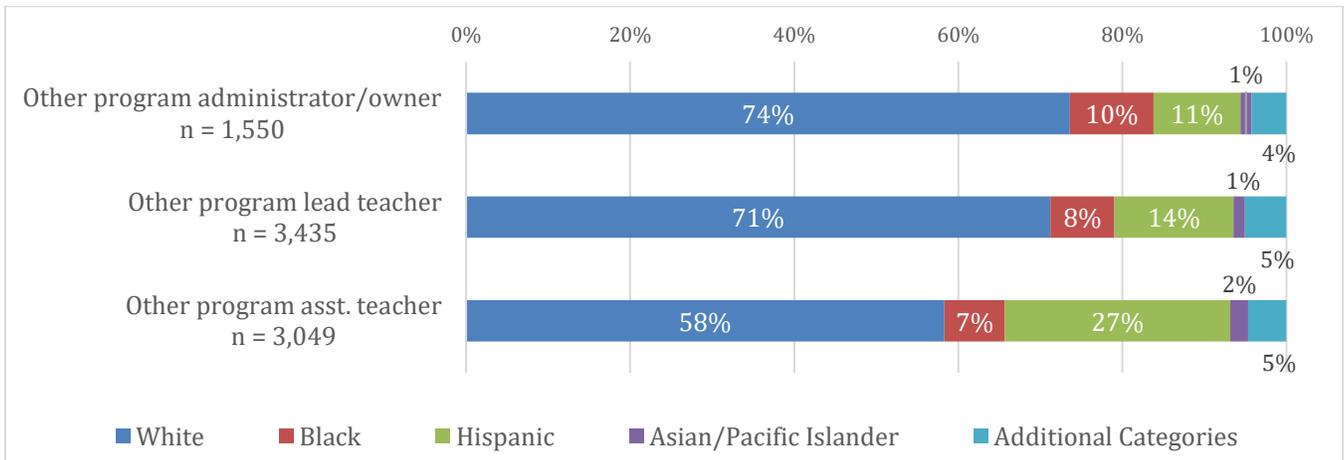

Figure 39. Race/Ethnicity of Other Program Participants by Role

As Figure 40 shows, the proportions across the racial/ethnic groups did not change greatly according to the age groups served. However, the highest percentage across the age groups was Whites who serve preschoolers. Among Blacks, it was those who serve school-agers; for Hispanics, those who serve infants-toddlers; for Asian/Pacific Islanders, those who serve multiple age groups, and for participants of Additional Categories, those who serve preschoolers was slightly higher than the percentages from the other age groups.
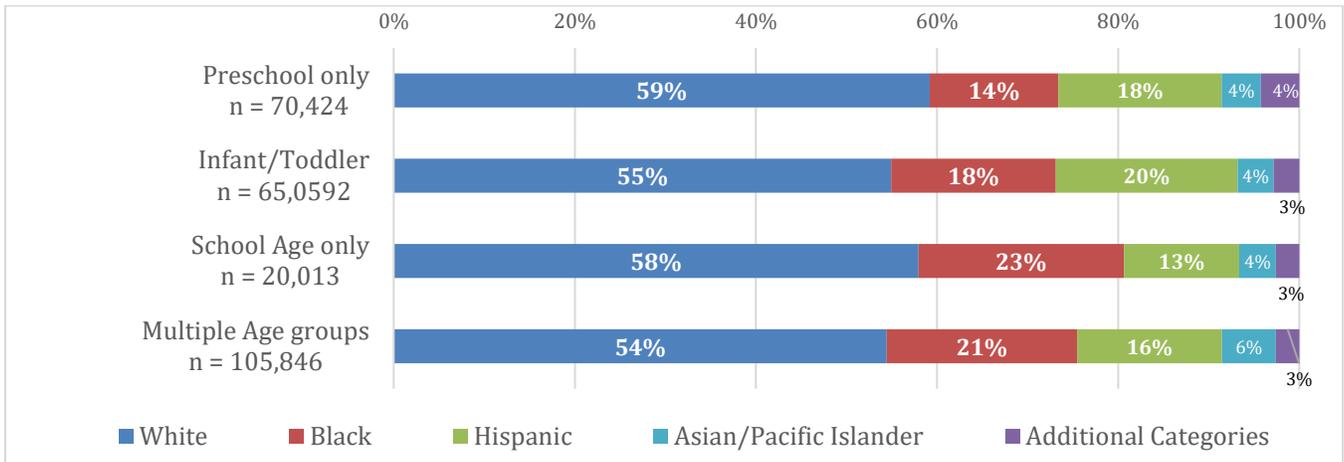
Figure 40. Age Groups Served by Race/Ethnicity

Figure 41 shows education levels by race/ethnicity for center professionals with a bachelor's degree or more in the 2021 NWRA dataset and in the 2013 nationally representative NSECE data. The race/ethnicity categories used in both datasets are not exactly the same, but the three categories of White, Black, and Hispanic are comparable between the two. The percentages in the NSECE data are slightly lower than the PER figures, which may be attributable to a number of factors, including the facts that the NSECE data are not as recent (and more workers may have increased their educational level over time) and the PER registries are not necessarily representative of all center professionals in the U.S. Nonetheless, the percentages are similar across the two datasets—and in both, Whites were most likely to have a bachelor's degree or higher, followed by Hispanics and Blacks.
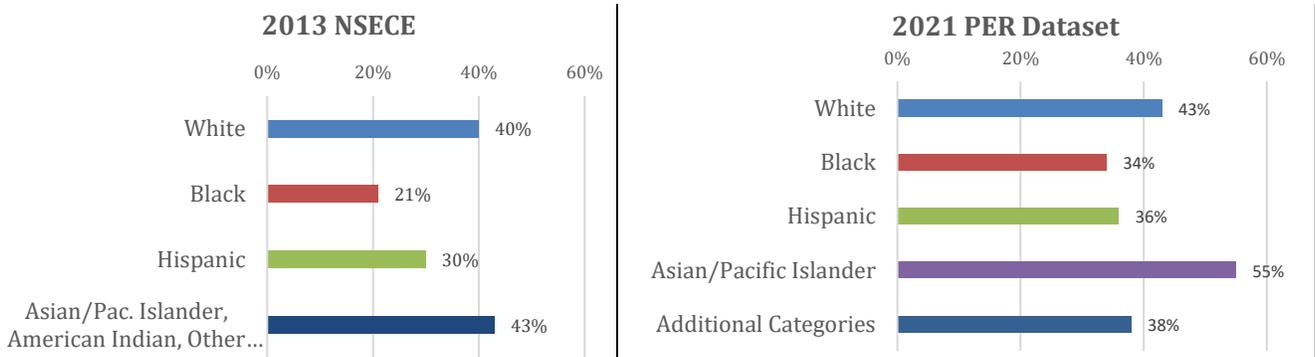

Figure 41. Center Participants with Bachelor's Degrees or Higher by Race/Ethnicity (2021 PER Dataset and 2013 NSECE)

Figure 42 shows bachelor degree attainment for specific center roles in the PER data. Asians/Pacific Islanders were more likely to hold a bachelor's degree compared to other groups across all center roles; Whites were second most likely to have a bachelor's degree across all roles, and Additional Categories participants were third most likely, at least for center administrators and lead teachers. Among assistant teachers, Hispanics were slightly more likely to hold a bachelor's degree compared to participants who belong to Additional Categories. Black center administrators were more likely to have a bachelor's degree

than Hispanics, yet Hispanic center lead and assistant teachers were more likely to hold a bachelor's compared to Black participants.
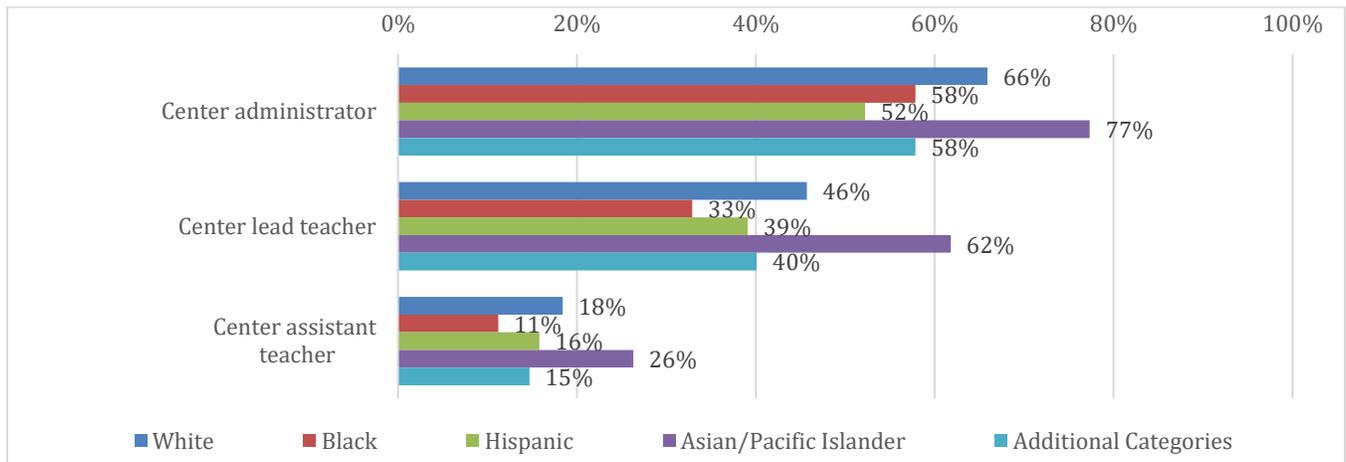

Figure 42. Center Participants with Bachelor's Degree or Higher by Race/Ethnicity and Role

Figure 43 compares the 2021 PER dataset and the 2013 NSECE data by race/ethnicity for FCC providers across all roles. Again, the categories do not match, and, again, the percentages in the NSECE data are slightly lower than the PER figures, which may be attributable to the same factors as those in Figure 41.

Figure 43. FCC Participants with Bachelor's Degrees or Higher by Race/Ethnicity (2021 PER Dataset and 2013 NSECE

Figure 44 shows FCC professionals with a bachelor's degree by race/ethnicity. Asian/Pacific Islander FCC owners were more likely to hold a bachelor's degree or more compared to other participants (43%). Further, Additional Categories professionals who were FCC lead teachers were most likely to have a bachelor's degree (30%), followed by Whites who were FCC owners and lead teachers (26%).
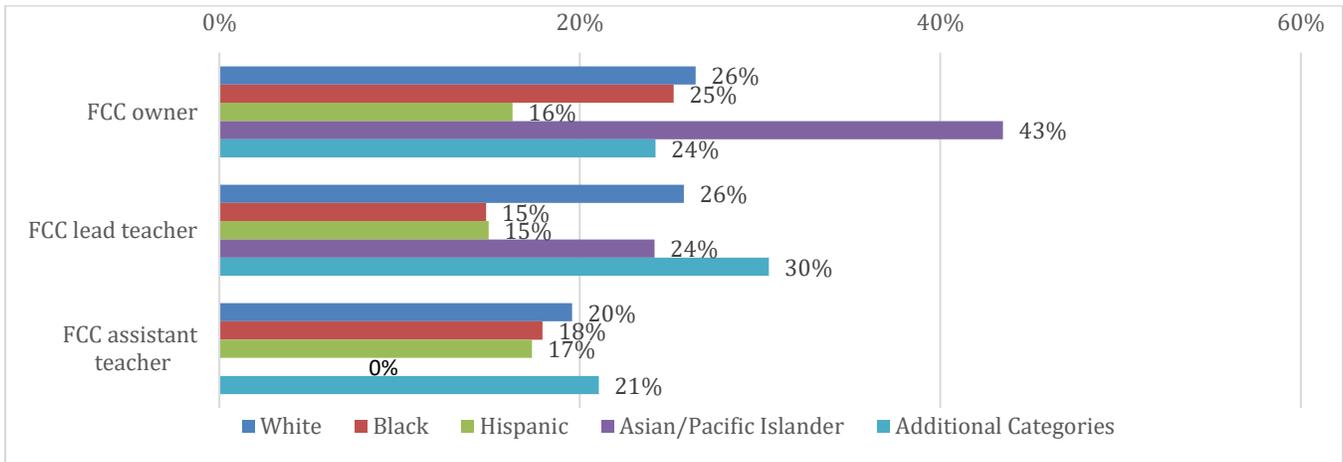
Figure 44. FCC Participants with Bachelor's Degree or Higher by Race/Ethnicity and Role

Figure 45 shows bachelor's degree attainment by role for professionals who work in other programs. Across all roles, Asians/Pacific Islanders were most likely to hold a bachelor's degree (56%), followed by Blacks and Whites (44%), Hispanics (41%), and Additional Categories participants (24%). Other program administrators who are Black were more likely than other groups except Asians/Pacific Islanders to hold a bachelor's degree, but this advantage disappears for lead and assistant teacher roles. Other program lead teachers who are Hispanic were more likely than all other groups except Asians/Pacific Islanders to have a bachelor's degree, while Additional Categories professionals were least likely to hold a bachelor's degree across all other program roles.
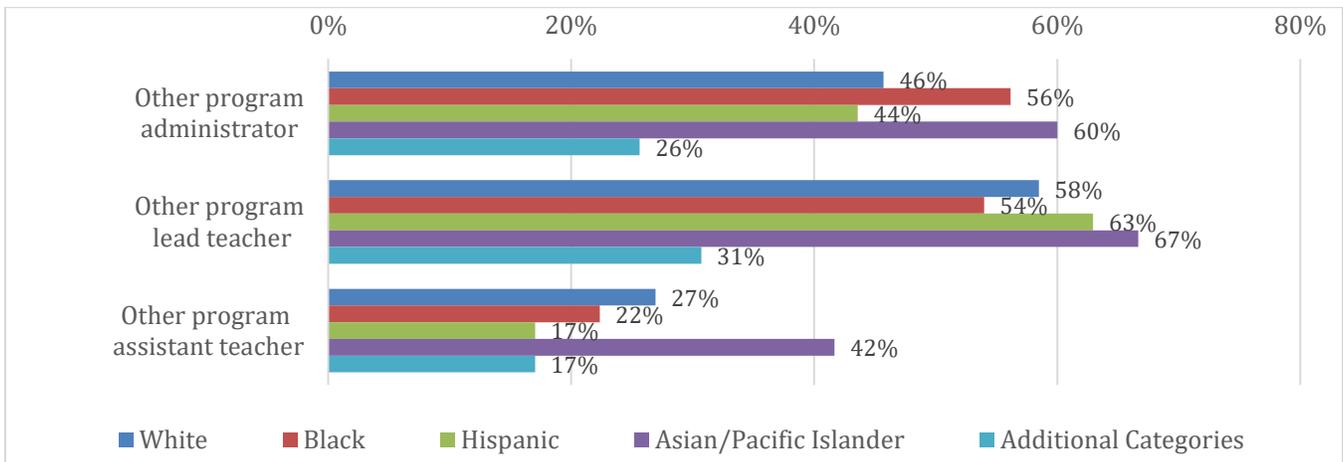

Figure 45. Other Program Participants with Bachelor's Degree or Higher by Race/Ethnicity and Role

A number of studies have found wage disparities based upon race/ethnicity in the early care and education workforce.[11,12,13] In general, they have found that people of color, particularly Blacks, earn less than their White counterparts. On the other hand, a 2022 study found that Black center-based staff had higher wages than their peers from other racial groups.[14]

Figure 46 shows the median wage for center participants by race/ethnicity across all roles. Asians/Pacific Islanders earned the most, followed by Blacks, Hispanics, the Additional category, and White participants. However, the differences in wages among the groups was not large, although compensation patterns differed by registry. In the Miami-Dade, Illinois, New York, Ohio, and Pennsylvania registries, Black professionals earned more than Whites; however, Whites reported higher wages than Blacks in Arizona,

Connecticut, Minnesota, Missouri, Montana, New Jersey, Nevada, and Wisconsin. This result supports the idea that national trends in compensation may not be applicable to local and regional levels.

However, it should be pointed out that these wage data may not be necessarily representative of the actual earnings potential for child care workers in PER states for several reasons: (1) many wage data are missing, which makes it possible that not all workers across the wage spectrum are reporting their data and that not all are equally likely to report their data across race/ethnicity groups; (2) the data may be out of date because most registries do not require participants to update their wages annually, and (3) the data may not be representative of PER registries given that not all are mandatory.

Figure 46. Center Participants' Median Wage by Race/Ethnicity (All Roles)

Figure 47 shows the median wages for all center administrators by race/ethnicity, as well as the median wages for those with bachelor's degrees. In the graph on the left, among all center administrators, Asians/Pacific Islanders reported the highest median wage ($19.05), followed by Whites ($18.07), while the other categories reported approximately $17.00 an hour. The graph on the right shows the median wage for center administrators with a bachelor's degree. Clearly, these administrators earn more than their counterparts without a degree. However, the difference between participants of different racial/ethnic groups is less pronounced. This is because the participants in different groups have different likelihoods of obtaining a bachelor's—i.e., when we control for having a bachelor's degree, the median wages are similar across racial/ethnic groups. Again, the systematic and historical racial injustices in our country have affected access to education for Black, indigenous, and people of color (BIPOC).
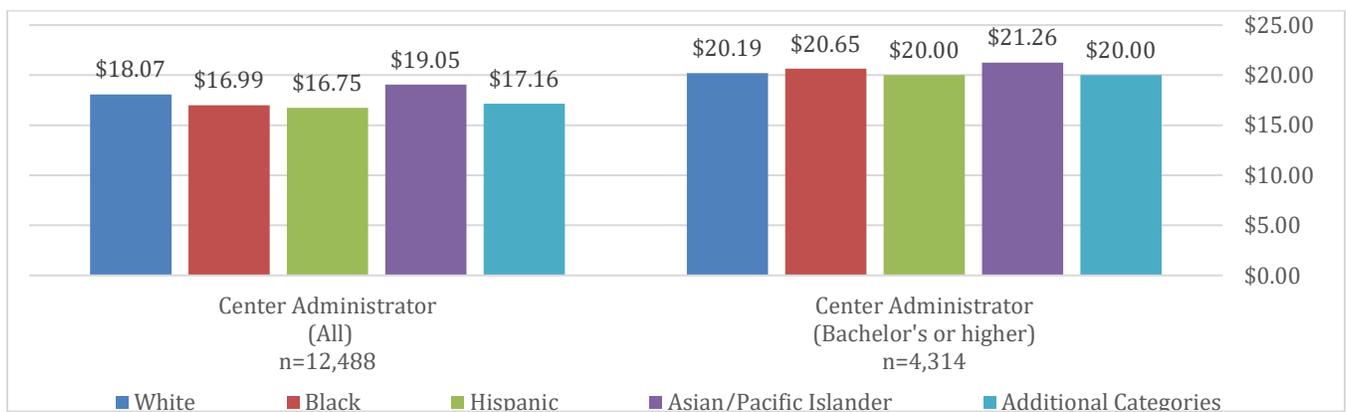

Figure 47. Median Wage for Center Administrators by Race/Ethnicity and Bachelor's Degree Attainment

Figure 48 shows median wages for center lead teachers by race/ethnicity, as well as median wages for those with bachelor's degrees. In the graph on the left, among all center lead teachers, Asians/Pacific Islanders reported the highest median wage ($15.00), followed by Blacks ($14.00), Additional categories participants ($13.94), Whites ($13.71), and Hispanics ($13.50). The graph on the right shows median wage for center lead teachers with a Bachelor's degree. As is obvious, those with bachelor's degrees earned more. However, the difference between participants of different racial/ethnic groups is slightly less pronounced. As before, this is because the participants in different groups have different likelihoods of obtaining a

bachelor's degree—i.e., when we control for having a bachelor's degree, median wages are similar across racial/ethnic groups. It is interesting to note that White center lead teachers earned the least with a Bachelor's degree or more ($15.80), and Blacks, Asians/Pacific Islanders, and participants from Additional Categories earned the same ($17).
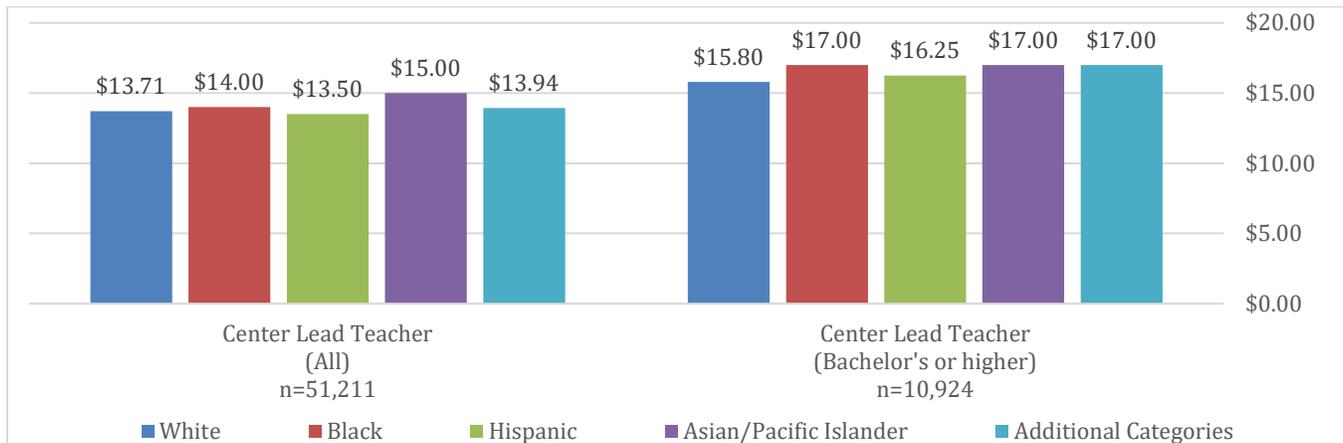

Figure 48. Median Wage for Center Lead Teachers by Race/Ethnicity and Bachelor's Degree Attainment

Figure 49 shows median wages for center assistant teachers by race/ethnicity, as well as median wages for those with bachelor's degrees. In the graph on the left, among all center assistant teachers, Asians/Pacific Islanders reported the highest median wage ($13.00), followed by Hispanics ($12.15), Additional Categories participants ($12.00), and Blacks ($12.00), while White assistant teachers reported the lowest median wage ($11.10). The graph on the right shows the median wage for center assistant teachers with a Bachelor's degree. As before, those with degrees make more. However, unlike the pattern we saw before with administrators and lead teachers, the difference between participants of different racial/ethnic groups is actually more pronounced for center assistant teachers. Blacks with bachelor's degrees or more earned the most ($15.00), followed by Asians/Pacific Islanders ($14.50), Additional category participants ($14.02), and Hispanics ($13.21), while White assistant teachers with bachelor's degrees earned the least ($13.13).
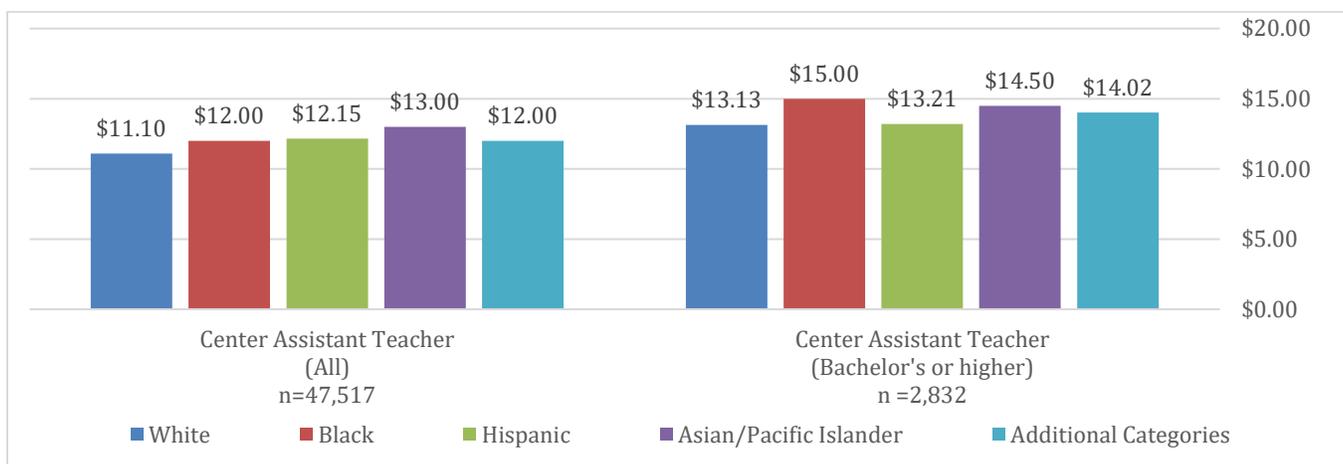

Figure 49. Median Wage for Center Assistant Teachers by Race/Ethnicity and Bachelor's Degree Attainment

Figure 50 shows the median number of training hours for center administrators by race/ethnicity. Hispanic and Black administrators reported the highest median number of hours (9.00), followed by Additional Categories administrators (8.00), and White administrators (7.50), while Asian/Pacific Islander center administrators reported the fewest number of hours (6.75).
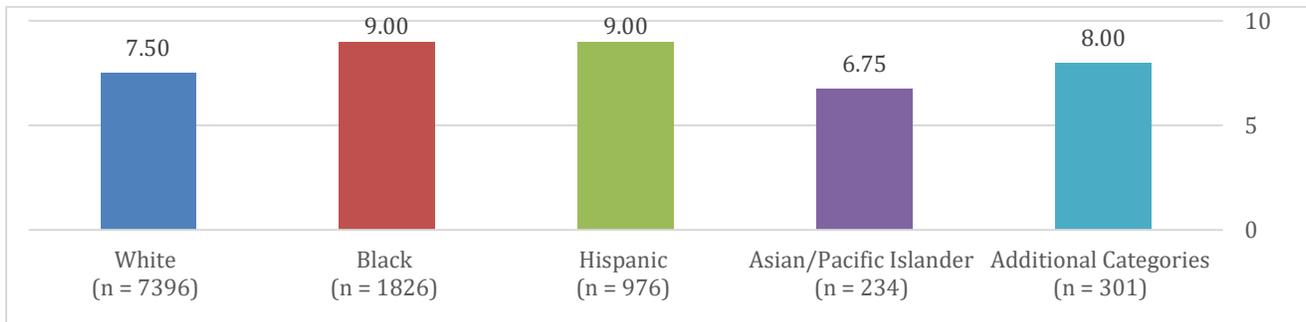
Figure 50. Median 2019 Training Hours for Center Administrators by Race/Ethnicity

Figure 51 shows the median number of training hours for center lead teachers by race/ethnicity. Hispanic and Black lead teachers reported the highest median number of hours (9.00), followed by lead teachers from all other racial/ethnic categories (7.00).
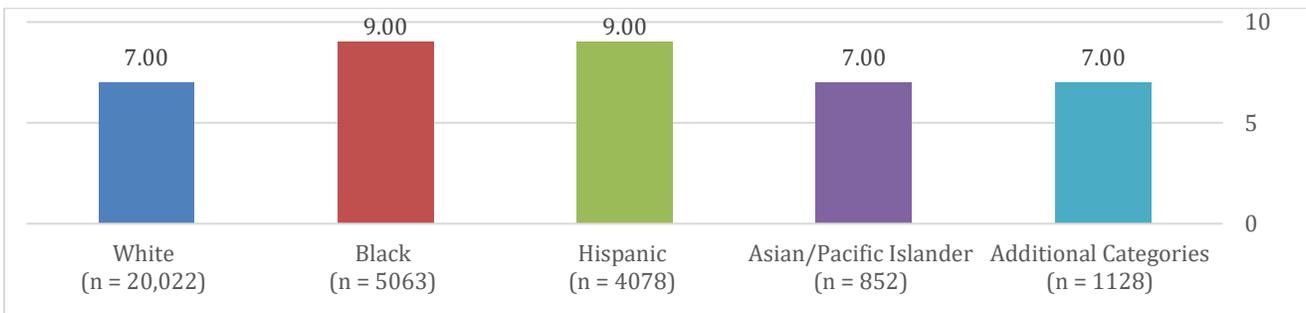

Figure 51. Median 2019 Training Hours for Center Lead Teachers by Race/Ethnicity

Figure 52 shows the median number of training hours for center assistant teachers by race/ethnicity. Hispanic and Black assistant teachers reported the highest median number of hours (7.00), followed by White and Additional Categories assistant teachers (6.00), while Asian/Pacific Islander center administrators reported the lowest median number of hours (5.5).

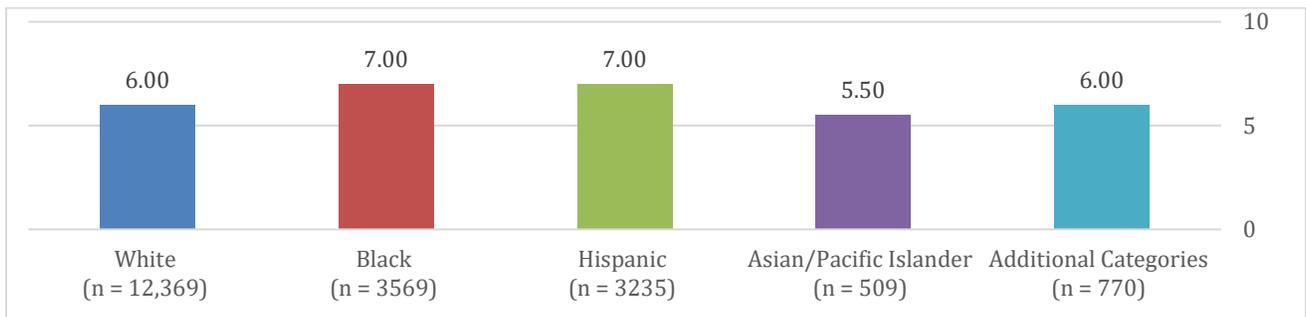*Figure 52.* Median 2019 Training Hours for Center Assistant Teachers by Race/Ethnicity

Figure 53 shows the median number of training hours for FCC owners by race/ethnicity. Hispanics reported the highest median number of hours (12.50), followed by Blacks (8.50), Asian/Pacific Islanders, and Additional Categories FCC owners (8.00), while White FCC owners reported the fewest number of hours (6.00).
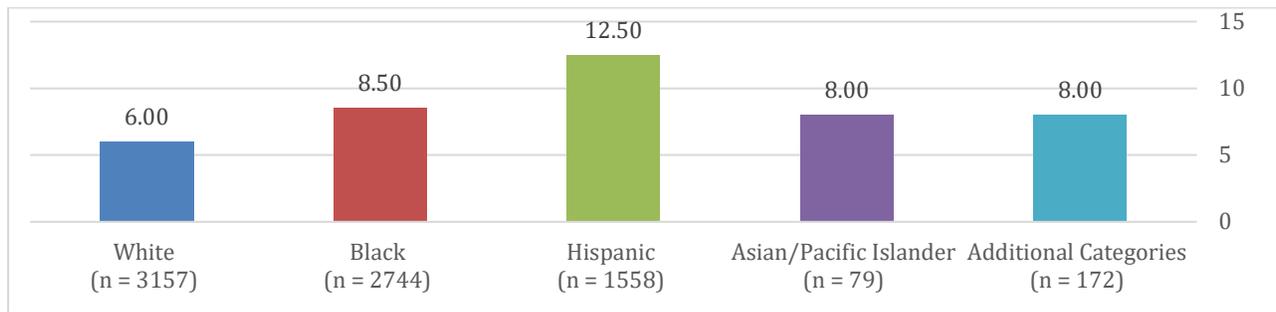
Figure 53. Median 2019 Training Hours for FCC Owners by Race/Ethnicity

Summary of Race/Ethnicity Findings

The first set of featured analyses examined the racial/ethnic distribution of the PER registries and whether these percentages mirror the racial/ethnic composition of the workforce ages 18-64 in the PER states. In PER states, Blacks and Additional Categories participants were more likely to be part of the early childhood and school-age workforce compared to their White and Asian/Pacific Islander peers (who were more likely to work in other fields). This may be attributable in part to the fact that Whites and Asians/Pacific Islanders are less likely to choose to work in the child care field because of their greater likelihood of having higher educational qualifications and thus, opportunities to work in higher paying, more stable fields.

Comparing the percentages of children 0-5 with the adult registry figures, Blacks were over-represented in the PER data, while Hispanics and Asians/Pacific Islanders were under-represented, and White and Additional Categories were represented approximately equally across both distributions. Increasing the representation of Hispanic and Asian/Pacific Islander workers in PER registries will make the workforce more representative of the children and families they serve, which has the potential to enhance the quality of the early childhood and school age care they receive.

The second set of analyses focused on racial/ethnic differences in workforce characteristics, including education, wages, and training hours. White participants in center programs constituted a larger percentage of administrators than lead or assistant teachers compared to BIPOC professionals. In family child care, BIPOC constituted a larger percentage of the workforce than they did in centers. Among center professionals, Asians/Pacific Islanders and Whites were mostly likely to hold a bachelor's degree, while Hispanics and Blacks were least likely. However, compensation patterns differed by registry; in many states with smaller registries, Whites earned more than Blacks.

Among center professionals, Asians/Pacific Islanders reported earning the most, followed by Blacks and Hispanics, while Additional Categories and White professionals earned the least. However, compensation patterns differed by registry. In the Miami-Dade, Illinois, New York, Ohio, and Pennsylvania registries, Black professionals earned more than Whites; however, Whites reported higher wages than Blacks in Arizona, Connecticut, Minnesota, Missouri, Montana, New Jersey, Nevada, and Wisconsin. This result supports the idea that national trends in compensation may not be applicable to local and regional levels.

Among center administrators and lead teachers with at least a bachelor's degree, the difference between wages for racial/ethnic groups was relatively small. However, the systemic and historical racial injustices in the U.S. have affected BIPOC's access to education, which in turn affects their likelihood to be administrators and their overall earnings potential in all roles.

With respect to professional development, Hispanic and Black professionals reported the greatest number of training hours in 2019, and Whites and Asians/Pacific Islanders the fewest.

Recommendations for Registries

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

1. *Become a PER registry so you can share registry data to help inform policy at state and national levels*
Thanks to the PER guidelines the NWRA established, workforce registries now have solid, proven methods to aggregate data. Increasing registries' capacities to share data will enhance further their ability to serve as important contributors to other data-driven policy initiatives. During times of great workforce upheaval, such as that the child care sector is experiencing currently, registries can play a critical role in informing workforce policy discussions now and in the future.

2. *Become familiar with your registry data so you can inform state and local discussions about workforce initiatives, allocation of resources, and equity*
As the report found, professionals who work with preschoolers had more education and experience and earned more than those who work with other age groups. In addition, this report highlighted that Asians/Pacific Islanders and Whites had more education than Blacks, Hispanics, and Additional category participants. Registries that have such knowledge about workforce trends in their state/region will ensure that they are invaluable collaborators in data-driven policy initiatives that address equity in the child care workforce as well as resource allocation for workforce development.

3. *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. Gathering information about CDAs and other ECE-specific degrees will ensure that registries can participate in the early educator qualifications discussions that NAEYC's Power to the Profession has foregrounded. Given the finding that participants from mandatory PER registries reported higher levels of education than those from non-mandatory PER registries, registries should work to require that all professionals report their educational attainment and update it when it changes.
Encouraging participants to renew their CDA credentials—and remain current with new developments in the field thereby—would benefit participants as well as the children and families they serve. To address the lack of compensation information, it is recommended that registries make wage/salary data required elements that are updated at regular intervals, such as annually.

4. *Support efforts in your region to require participation in registry systems for licensed settings, those receiving subsidy, and those involved in QRIS*
Registry data become most powerful when the case can be made that the entire population of early childhood and afterschool educators is represented. Thus, registries should support efforts to move toward mandated participation.

5. *Ensure that registries are part of the early childhood governance structures in your region*
Because registries are an importance source of workforce data, particularly for early childhood professionals, it is critical that they are represented in initiatives designed to increase the quality and quantity of data available to early childhood data systems.

Recommendations for the National Workforce Registry Alliance

Based upon the findings from this report, the following recommendations are suggested for the NWRA.

1. *Continue to support registries' ability to gather high quality workforce data and use such data for policy purposes*
   The NWRA has long been the national organization that provides an interactive forum for registries to exchange ideas, strategies, and best practices. Through the PER process, registries enhance their capabilities to participate in data-related projects to influence national policy and initiatives.

2. *Modify PER protocols as necessary to enhance the quality of data for aggregation and policy purposes*
   Key considerations for future NWRA datasets include the following recommendations for PER registries: (1) reduce the number of "missing data" for education and training hours; (2) add information about the date when degrees and credentials are earned to enhance analyses related to workforce qualifications; (3) implement "transaction flags" within registries so that changes in participants' and programs' status can be captured over time; (4) modify the process used to obtain training hour data to maximize the number of valid records; (5) modify the data transfer protocol to enhance registries' ability to determine definitively whether participants have ECE-related degrees, CPR, First Aid, and CDA credentials, and (6) examine potential changes in the gender and race/ethnicity fields to capture the workforce's demographics more accurately.

3. *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 NWRA collaborates already 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 NWRA remains a leader in the workforce field.

4. *Prioritize efforts to examine and advocate for equity in the child care workforce*
   NWRA can strengthen its ability to address equity in the workforce by developing additional PER standards that focus on racial/ethnic equity as well as equity based upon other characteristics (e.g., gender identity, sexual orientation, ability status). In addition, NWRA can help registry staff examine their data through an equity lens by providing more professional development opportunities for member registries.
   By advocating for alternative pathways to professional development, NWRA can help address the systematic and historical inequities in access to educational and training opportunities that many BIPIC professionals have faced and continue to face, as well as other professionals who experience disenfranchisement based upon physical and demographic characteristics.

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