PRENATAL-TO-3 POLICY CLEARINGHOUSE

EVIDENCE REVIEW

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RESEARCH FOR ACTION AND OUTCOMES

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Child Care Workforce Qualifications

Evidence Review Findings: Needs Further Study

The relationship between child care workforce qualifications and outcomes in the prenatal-to-3 period has not yet been rigorously studied. Some strong causal studies have evaluated the impact of workforce qualifications for teachers of children ages 3 to 5, and other observational studies have examined effects for the child care field broadly, but no rigorous evaluation to date has focused on the 0 to 3 age group. The evidence that does exist is mixed and focuses on program-level solutions to improve workforce qualifications, rather than statewide policies. Further study is needed to better understand the connection between policies related to child care workforce qualifications and outcomes for families in the prenatal-to-3 period.

Workforce qualifications for child care professionals are defined here by the attainment of certain levels of education, as well as completion of specialized training in fields related to child care. States may require that child care professionals meet specified educational and training requirements to qualify for child care positions and may also use scholarship programs to incentivize the pursuit of training and educational goals. Child care policies that set standards for teacher and caregiver qualifications aim to encourage education and training, thereby improving the skill levels of child care professionals. A more highly skilled workforce should, in turn, improve classroom quality through better teacher-child interactions and higher teacher retention. Improved classroom quality may ultimately help young children more effectively develop their academic and social-emotional skills.

What Are Child Care Workforce Qualifications?

The qualifications of child care staff are defined here by teachers' levels of pre-service educational attainment and specialized training, such as post-secondary coursework in early childhood education or child development.[i] In both state licensing guidelines and state quality rating and improvement systems (QRIS), states have the ability to set qualification requirements for child care lead teachers and assistant teachers, such as requiring a certain level of educational attainment and specialized training by staff position.

National program standards and professional guidelines offer examples for states seeking to identify the level of education and training of teaching staff required to meet quality standards. The Head Start Program Performance Standards require that Early Head Start teachers hold a minimum of a Child Development Associate Credential (CDA) or equivalent credential, plus training/coursework specifically on infant and toddler development, but does not specify requirements for assistant teachers.[1] The National Association for the Education of Young Children (NAEYC) recommends the following: (1) lead teachers have a minimum of a higher education degree (associate's degree or higher) in an child care-related field, a higher education degree with a significant number of credits in an child care-related field, or a public education teacher certification; and (2) assistant teachers/aides have at least a CDA or some higher education training in an early care and education (ECE) related field.[2] Other professional recommendations, such as those from the Institute on Medicine (IOM) and National Research Council (NRC), suggest similar standards for specialized training but recommend that lead teachers have a bachelor's degree, similar to the requirements for elementary and secondary education teachers; the IOM/NRC does not specify a recommendation for assistant teachers.[3]

Who Is Affected by Child Care Workforce Qualifications?

The child care workforce includes approximately 535,000 teachers and caregivers in listed (included in state and national administrative lists of ECE providers) center- and home-based settings serving children under age 3.[ii] The 2012 National Survey of Early Care and Education (NSECE) found that only 19 percent of center-based teachers and caregivers serving children ages 0 to 3 had a bachelor's degree or higher, 17 percent had an associate's degree, 36 percent had some college but no degree, and 28 percent had a high school diploma or less. Educational attainment is lower among center-based teachers and caregivers serving infants and toddlers as compared to those who teach children ages 3 to 5; educational attainment is also lower among listed home-based providers serving children ages 0 to 5.[4] Few state standards currently meet national recommendations on teacher qualifications. To the extent that differences in teacher education and training may impact children's experiences in the classroom and their development and wellbeing, millions of children in nonparental care may be impacted by policies that raise required child care workforce qualifications.

What Are the Funding Options for Child Care Workforce Qualifications?

Funding for scholarship programs to support the child care workforce in attaining higher qualifications are available from a mix of public and private sources, including Child Care and Development Fund quality funds, state general funds, state pre-K funds, state funds from tobacco taxes or lotteries, local government funds, foundations, nonprofits, and corporations.[5] States can also use funding from the Preschool Development Grant Birth through Five program to assess and address child care workforce qualification issues (e.g., supporting the development of a credentialing program, offering scholarships for higher education to teachers).[6,7]

[i] Child care workforce qualifications can also include hours or years of experience, but the discussion of qualifications in this review is limited to education and specialized training.

[ii] Author's calculation based on those serving children ages 0 to 3 only and those serving children ages 0 to 5 in center-based and listed home-based settings. Due to the way data are presented, this number includes a small share of unpaid, listed home-based teachers and caregivers (2,900 of 117,900 total listed home-based teachers and caregivers serving children 0 to 5). Does not include paid or unpaid unlisted home-based providers.

Why Should Child Care Workforce Qualifications Be Expected to Impact the Prenatal-to-3 Period?

Child care environments have the potential to impact children by providing high-quality care and education that may lead to improved child outcomes (e.g., school readiness[iii]).[8] One component of high-quality care may be highly qualified teachers. Child care workforce educational attainment and specialized training are considered a critical component of the structural quality of child care and one feature of care used to assess the ability of child care programs to provide children with the safe, stimulating, and nurturing environments they need for healthy development. Teachers' and assistants' levels of education and training may act as a proxy for skill, and staff with higher qualifications are assumed to possess higher levels of skills necessary to create an effective teaching environment to build children's academic and social-emotional skills.[9,10]

Child care workforce qualifications may impact children indirectly through improved classroom quality and better teacher-child interactions,[iv] which may then improve child cognitive and social-emotional outcomes.[9,10] Teacher education may also impact quality via retention, although the hypothesized direction of this relationship may vary.[11] For example, teachers with higher educational attainment may have higher turnover because they are able to seek similar positions in higher paying fields (e.g., public pre-K or elementary education); however, these teachers may also have a greater commitment to serving young children, demonstrated by their higher degree of specialized training, which may lead to lower turnover.[11]

Workforce qualification policies may also reduce disparities in child outcomes if policies raise levels of education and training among staff in child care programs serving low-income or other at-risk children.
Raising workforce qualification requirements may also have negative implications for the supply of child care workers depending on how the requirements are implemented; potential negative outcomes can include "workforce shortages, reduced diversity in the professions, increased disparities among current and future professionals, upward pressure on out-of-pocket costs to families, and disruptions to the sustainability of operating in the for-profit and not-for-profit care and education market" (p. 8).[12]

Decades of research in the field of child development have made clear the conditions necessary for young children and their families to thrive.[13] These conditions are represented by our eight policy goals, shown in Table 1. The goals with which child care workforce qualifications are theoretically aligned are indicated below.

[iii] School readiness outcomes typically include measures of cognitive competence and language skills (e.g., operationalized by measures from the Bayley Mental Development Index, Bayley Scales of Infant Development, Woodcock-Johnson test [WJ], or Peabody Picture Vocabulary Test [PPVT]).
[iv] Classroom quality is typically defined by observed classroom experiences and includes factors such as teacher behaviors, positive climates, and facilitation of learning and development. Positive teacher-child interactions are typically measured by observed interactions demonstrating warmth, sensitivity, and responsiveness, among other factors.

Table 1: Policy Goals Theoretically Aligned With Child Care Workforce Qualifications

Aligned	Policy Goal
	Access to Needed Services
	Parents' Ability to Work
	Sufficient Household Resources
	Healthy and Equitable Births
	Parental Health and Emotional Wellbeing
	Nurturing and Responsive Child-Parent Relationships
	Nurturing and Responsive Child Care in Safe Settings
	Optimal Child Health and Development

What Impact Do Child Care Workforce Qualifications Have, and for Whom?

To date, no rigorous research has examined the connection between child care workforce qualifications and outcomes in the prenatal-to-3 period. Strong studies have been conducted on workforce qualifications for teachers in the 3 to 5-year-old age range, and some observational studies have attempted to assess the relationship between child care workforce qualifications and classroom quality and child outcomes. Existing evidence can be used to understand the pathways through which child care workforce qualification may improve outcomes for children and families, but cannot make causal inferences due to study design limitations. The summary below focuses on the existing observational evidence, though limited, to understand the possible impact of child care workforce qualifications on each studied policy goal for families in the prenatal-to-3 period.

Nurturing and Responsive Care in Safe Settings

To date, the body of literature exploring the impact of teacher education and training on child care quality[v] is observational; no studies with methodologies allowing casual inference exist.[14] Using data from the 1990s, seven often-cited studies have identified a positive association between higher teacher qualifications and levels of child care quality, as measured by observed classroom quality and teacher-child interactions.[9,15,16,17,18,19,20] However, because of their small sample sizes, point-in-time analyses, and observational designs, these studies do not meet our standards of evidence for establishing causality. Further, not all studies disaggregated infant and toddler results from the larger sample of children in child care, making it difficult to identify impacts on these age groups. In addition, two more recent observational studies found results conflicting with the earlier body of literature, identifying null effects between teacher qualifications and child care quality for infants and toddlers.[21,22] Given mixed findings among studies with methodologies that do not allow for causal inference, it is not possible to articulate clearly the role of teacher education and training in infant and toddler classrooms, particularly regarding what thresholds of workforce qualifications may link to quality.

No studies have drawn a causal link between child care workforce qualifications and staff retention. Observational studies have found null effects between qualifications and intent to stay in the field and teacher turnover,[22,23] and a recent

[v] Quality is defined by both observed classroom quality (operationalized using the Infant/Toddler Environment Rating Scale [ITERS], the Early Childhood Environment Rating Scale [ECERS], and their relevant subscales, such as developmentally appropriate activities), as well as teacher-child interactions (operationalized using measures such as teacher sensitivity and responsiveness using the Arnett Caregiver Interaction Scale).

literature review of observational studies on retention in center-based settings found mixed effects;[11] however, the observational designs and small sample sizes of these studies do not allow for causal inference.

Optimal Child Health and Development

Similar to child care quality, often-cited findings that have demonstrated positive associations between teacher qualifications and school readiness outcomes come from five older observational studies with small samples[15,24,25] or that focus on older children.[15,26,9] Further, recent studies typically do not examine child outcomes for infants and toddlers,[vi] and although often cited, studies are observational and do not allow for assessment of causal links between workforce qualifications and child outcomes.

Is There Evidence That Child Care Workforce Qualifications Reduce Disparities?[vii]

No causal research has explored if or how child care workforce education and training reduce disparities in child outcomes. A recent replication study examined the impact of teacher educational attainment and area of study on child outcomes by family poverty, but it reported few statistically significant results. Examining the role of major (as in subject of academic study) on child outcomes among teachers with a bachelor's degree, the study authors found that in one of seven studies, "after adjusting for covariates, prereading scores were similar among children who were poor and those who were not poor if the teacher majored in early childhood education or child development; however, when the teacher did not major in any type of education, … the children who were not poor scored lower than the poor children" (p. 573).[29] No other statistically significant results were reported.

Has the Return on Investment for Child Care Workforce Qualifications Been Studied?

To date, no rigorous evidence has examined the cost effectiveness child care workforce qualifications. A more comprehensive analysis of the return on investment is forthcoming.

What Do We Know, and What Do We Not Know?

In summary, evidence on how child care workforce training and education may impact child outcomes through quality and retention is mixed and observational. Although older, observational evidence found a link between higher levels of teacher qualifications and better child outcomes, more recent studies found no significant association. However, existing research on the impact of teacher qualifications on care quality and child outcomes does not allow for causal conclusions.

Evidence from studies of older children, though not directly relevant to our population, may also provide some context for the potential effect of improved qualifications for caregivers of children ages 0 to 3. Two rigorous studies – a recent evaluation in Wisconsin[9] and a meta-analysis replicating work from seven major child care studies[29] – examined the impact of teacher education and training on outcomes for children in preschool and pre-K settings. The Wisconsin study found that although lower educational attainment and training was associated with lower quality, higher teacher qualifications were not associated with higher quality,[9] whereas the meta-analysis found null evidence on the association between teacher qualifications and observed classroom quality.[29] Neither study found consistent evidence of a positive association between teacher qualifications and child outcomes among children ages 3 to 5.[9,29]

Future research can address gaps in the existing body of literature on child care workforce education and training. First, future work should use robust research designs and analytic methods to determine if higher or lower child care workforce qualifications lead to changes in child wellbeing and development. Research in this area should work to clarify: (a) causal pathways through which education and training lead to impacts on child outcomes (e.g., retention, child care quality), and (b) what thresholds of qualifications are necessary to demonstrate improvement in child outcomes. Second, future research should focus on exploring these causal connections among infant and toddler classrooms and children (distinct

[vi] Only the systematic review by Falenchuk, et al. (2017) included studies with children as young as 30 months old. Few studies included in the review appear to have actually included outcomes for toddlers 30 to 35 months old. Among the older observational works, 4 of 5 studies included infants and toddlers (3 either focused on this population or disaggregated findings for this population).

[vii] Disparities are defined here as differential outcomes by race, ethnicity, or socioeconomic status (SES).

from children in preschool or pre-K), as this population is not well studied in the existing literature, and the unique challenges and needs of the children ages 0 to 3 indicate that outcomes may not be consistent across age groups.

Third, researchers should explore whether workforce education and training are linked to closing disparities in child outcomes. Fourth, researchers should ensure that their work covers diverse child care settings to better understand the role of teacher education and training in home-based settings. Finally, future research should more closely examine the effectiveness of state-level policies targeting teacher qualifications at improving child care quality and child outcomes, such as the effectiveness of licensing and quality standards for education and specialized training, as well as specific policies targeting increased qualifications of the child care workforce across diverse populations of workers and settings. For example, several states have implemented child care scholarship programs to fund training and education for child care teachers, but we do not yet have evidence on the impact of such programs on the child care field.

Are Child Care Workforce Qualifications an Effective Policy for Improving Prenatal-to-3 Outcomes?

No strong causal evidence has evaluated the impact of child care workforce qualifications on outcomes in the prenatal-to-3 period. Existing observational evidence, as well as some rigorous study of child care qualifications on children ages 3 to 5, has mixed conclusions regarding the effectiveness of improved qualifications on outcomes for children and their families. Additionally, no studies have examined statewide policies to improve child care workforce qualifications, looking instead at correlational outcomes or programmatic strategies to assess the relationship between teacher qualifications and outcomes for children. Further rigorous study is needed to draw a conclusion on the effectiveness of child care workforce qualification policies and outcomes for families in the prenatal-to-3 period.

How Do Child Care Workforce Qualifications Vary Across the States?

Pre-service staff education and training qualification requirements vary substantially across state child care licensing standards. If states set requirements, staff are typically required to have a certain degree or credential and/or a set amount of post-secondary coursework within a child care related field; states may also include hours of experience as a staff qualification. As of 2018, no state licensing standards require lead teachers to have a bachelor's degree in center-based programs serving infants and toddlers, and only the District of Columbia, Hawaii, Minnesota, and Vermont require assistant teachers/aides in these settings to have a CDA or equivalent.[28] No states require lead teachers in a home-based setting to have a bachelor's degree or higher, and only the District of Columbia and Hawaii require assistant teachers/aides to have at least a CDA or equivalent in these settings.[28] A large number of states lack any minimum educational requirements for care providers (including the majority of states for center- and home-based assistants/aides), and several states require only a high school diploma, but no specialized post-secondary training (see Table 2 for variation).[28]

Table 2: Number of States with Licensing Standard Requirements for Staff Education and Training, by Setting, Staff Position, and Number of States in 2018

	Center-Based Providers		Home-Based Providers*	
	Lead Teachers	**Assistants**	**Lead Teachers**	**Assistants**
BA or above	0	0	0	0
AA	2	0	0	0
Some higher education/training beyond a CDA, less than an AA	1	0	1	0
CDA or equivalent	9	4	3	2
Some higher education/training, less than a CDA	11	5	12	3
High school diploma/GED	9	7	8	4
None	19	35	24	41

Source: Data compiled based on Figure 4.3 in Whitebook, et al. (2018).

Notes: State counts include the District of Columbia.

**Source does not report data for three states for home-based lead teachers and one state for home-based assistants/aides.*

As of 2016, all state QRIS include requirements for staff qualifications, and most state QRIS specify education and credentialing indicators.[30] Most state QRIS require center-based teachers to have a bachelor's degree at the highest quality rating level, although few states have the same requirements for home-based providers.[31] In 2016, 36 and 20 states[viii] include CDAs or a state-equivalent credential as an indicator for center-based and home-based providers, respectively.[30] As of 2019, of the 40 statewide QRIS, 39 included specific staff training and qualification standards for center-based providers, and 38 specify training and qualification standards for home-based providers.[33]

Few states, however, have educational requirements for child care staff that align with professional recommendations (see Table 3a and 3b). For example, no states have minimum educational requirements for lead teachers in center-based or home-based care settings that align with standards as provided by the National Association for the Education of Young Children (NAEYC) or the Institute of Medicine (IOM) and National Research Council (NRC). Many states offer scholarships to child care professionals pursuing higher educational attainment; for example, states offer scholarships for pursuit of the following credentials: CDA (36 states), associate's degree (41 states), bachelor's degree (40 states).[28,ix]

Over the past several years, a national collaborative led by child care professionals developed a unifying framework to provide recommendations to the child care field on how to define the early childhood education profession. Several of the central recommendations resulting from the Power to the Profession collaboration centered around improving and unifying the pathways to training and qualification for the early education workforce. The unifying framework advocates for three professional designations, accompanied by professional licensing, to define the ECE workforce. Licensing in their model is awarded upon completion of an accredited professional preparation program, completing field experience, and passing an assessment.[32] The recommended model, endorsed by 15 national organizations in the child care field, represents momentum toward improved workforce qualification standards for child care professionals across the country.

Table 3a: State Variation in Child Care Workforce Qualifications

	Variation		
State	**Education Recommendations for Center-Based Assistant Teachers Align With NAEYC Standards**	**Education Recommendations for Center-Based Lead Teachers Align With IOM/NRC Standards**	**Education Recommendations for Center-Based Directors Align With IOM/NRC Standards**
Alabama	No	No	No
Alaska	No	No	No
Arizona	No	No	No
Arkansas	No	No	No
California	No	No	No
Colorado	No	No	No
Connecticut	No	No	No
Delaware	No	No	No
District of Columbia	Yes	No	Yes
Florida	No	No	No
Georgia	No	No	No
Hawaii	Yes	No	No
Idaho	No	No	No
Illinois	No	No	No
Indiana	No	No	No
Iowa	No	No	No

[viii] State counts include the District of Columbia.

[ix] Two states offer scholarships for CDAs that were not included in the original table in Whitebook et al. (2018): Missouri (https://teach-missouri.org/) and South Carolina (http://sc-ccccd.net/TEACH/TEACH_Scholarships.html).

Table 3a: State Variation in Child Care Workforce Qualifications (continued)

	Variation		
State	Education Recommendations for Center-Based Assistant Teachers Align With NAEYC Standards	Education Recommendations for Center-Based Lead Teachers Align With IOM/NRC Standards	Education Recommendations for Center-Based Directors Align With IOM/NRC Standards
Kansas	No	No	No
Kentucky	No	No	No
Louisiana	No	No	No
Maine	No	No	No
Maryland	No	No	No
Massachusetts	No	No	No
Michigan	No	No	No
Minnesota	Yes	No	No
Mississippi	No	No	No
Missouri	No	No	No
Montana	No	No	No
Nebraska	No	No	No
Nevada	No	No	No
New Hampshire	No	No	No
New Jersey	No	No	Yes
New Mexico	No	No	No
New York	No	No	No
North Carolina	No	No	No
North Dakota	No	No	No
Ohio	No	No	No
Oklahoma	No	No	No
Oregon	No	No	No
Pennsylvania	No	No	No
Rhode Island	No	No	No
South Carolina	No	No	No
South Dakota	No	No	No
Tennessee	No	No	No
Texas	No	No	No
Utah	No	No	No
Vermont	Yes	No	No
Virginia	No	No	No
Washington	No	No	No
West Virginia	No	No	No
Wisconsin	No	No	No
Wyoming	No	No	No
State Count	4	0	2

Data as of 2018. Whitebook, et al. Early Childhood Workforce Index - 2018.
For additional source and calculation information, please refer to the Methods and Sources section of pn3policy.org.

Table 3b: State Variation in Child Care Workforce Qualifications

	Variation		
State	Education Recommendations for Family Child Care Assistant Teachers Align With NAEYC Standards	Education Recommendations for Family Child Care Lead Teachers Align With IOM/NRC Standards	State Funds a Scholarship Program That Supports Higher Education Attainment for Early Educators
Alabama	No	No	Yes
Alaska	No	No	Yes
Arizona	No	No	Yes
Arkansas	No	No	No
California	No	No	Yes
Colorado	No	No	Yes
Connecticut	No	No	Yes
Delaware	No	No	Yes
District of Columbia	Yes	No	Yes
Florida	No	No	Yes
Georgia	No	No	Yes
Hawaii	Yes	No	Yes
Idaho	No	No	Yes
Illinois	No	No	Yes
Indiana	No	No	Yes
Iowa	No	No	Yes
Kansas	No	No	Yes
Kentucky	No	No	Yes
Louisiana	No	No	Yes
Maine	No	No	No
Maryland	No	No	Yes
Massachusetts	No	No	Yes
Michigan	No	No	Yes
Minnesota	No	No	Yes
Mississippi	No	No	No
Missouri	No	No	Yes
Montana	No	No	No
Nebraska	No	No	Yes
Nevada	No	No	Yes
New Hampshire	No	No	No
New Jersey	No	No	Yes
New Mexico	No	No	Yes
New York	No	No	Yes
North Carolina	No	No	Yes
North Dakota	No	No	Yes
Ohio	No	No	Yes
Oklahoma	No	No	Yes
Oregon	No	No	No
Pennsylvania	No	No	Yes

Table 3b: State Variation in Child Care Workforce Qualifications (continued)

	Variation		
State	Education Recommendations for Family Child Care Assistant Teachers Align With NAEYC Standards	Education Recommendations for Family Child Care Lead Teachers Align With IOM/NRC Standards	State Funds a Scholarship Program That Supports Higher Education Attainment for Early Educators
Rhode Island	No	No	Yes
South Carolina	No	No	Yes
South Dakota	No	No	No
Tennessee	No	No	Yes
Texas	No	No	Yes
Utah	No	No	Yes
Vermont	No	No	Yes
Virginia	No	No	Yes
Washington	No	No	Yes
West Virginia	No	No	Yes
Wisconsin	No	No	Yes
Wyoming	No	No	Yes
State Count	2	0	44

Data as of 2018. Whitebook, et al. Early Childhood Workforce Index - 2018.

For additional source and calculation information, please refer to the Methods and Sources section of pn3policy.org.

How Did We Reach Our Conclusions?

Method of Review

This evidence review began with a broad search of all literature related to the policy and its impacts on child and family wellbeing during the prenatal-to-3 period. First, we identified and collected relevant peer-reviewed academic studies as well as research briefs, government reports, and working papers, using predefined search parameters, keywords, and trusted search engines. From this large body of work, we then singled out for more careful review those studies that endeavored to identify causal links between the policy and our outcomes of interest, taking into consideration characteristics such as the research designs put in place, the analytic methods used, and the relevance of the populations and outcomes studied. We then subjected this literature to an in-depth critique and chose only the most methodologically rigorous research to inform our conclusions about policy effectiveness. All studies considered to date for this review were released on or before March 31, 2020.

Standards of Strong Causal Evidence

When conducting a policy review, we consider only the strongest studies to be part of the evidence base for accurately assessing policy effectiveness. A strong study has a sufficiently large, representative sample, has been subjected to methodologically rigorous analyses, and has a well-executed research design allowing for causal inference—in other words, it demonstrates that changes in the outcome of interest were likely caused by the policy being studied.

The study design considered most reliable for establishing causality is a randomized control trial (RCT), an approach in which an intervention is applied to a randomly assigned subset of people. This approach is rare in policy evaluation because policies typically affect entire populations; application of a policy only to a subset of people is ethically and logistically prohibitive under most circumstances. However, when available, randomized control trials are an integral part of a policy's evidence base and an invaluable resource for understanding policy effectiveness.

The strongest designs typically used for studying policy impacts are quasi-experimental designs (QEDs) and longitudinal studies with adequate controls for internal validity (for example, using statistical methods to ensure that the policy, rather than some other variable, is the most likely cause of any changes in the outcomes of interest). Our conclusions are informed largely by these types of studies, which employ sophisticated techniques to identify causal relationships between policies and outcomes. Rigorous meta-analyses with sufficient numbers of studies, when available, also inform our conclusions.

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