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Workforce Training for Parents: What About Childcare?

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Abstract

Parents constitute a substantial share of participants in education and workforce training, yet little is known about how childcare support structures affect their success. This study examines whether childcare delivery models are associated with differences in childcare receipt and short-term outcomes among parents in the Health Professions Opportunity Grant (HPOG) 2.0 randomized evaluation (2015–2021, N=33,945 parents). Grantees offered childcare through four models: direct service provision, partnerships with providers, referrals to external providers, or combined approaches. The authors compared childcare receipt rates across models and estimated differential program impacts on certification attainment and healthcare employment 15 months post-randomization using regression-adjusted interaction models. Overall childcare receipt was low (6%) but varied by model, with highest take-up for direct provision (9.6%). While HPOG 2.0 increased certification attainment across all models, impacts were significantly larger at direct provision sites—10 to 18 percentage points greater than sites using partnerships, referrals, or mixed models. No differential employment impacts emerged at 15 months. Findings suggest that childcare models reducing administrative and coordination burdens more effectively improve childcare access and educational progress. Workforce programs should consider not only whether childcare is offered, but how it is structured to promote parent success.

Introduction

The COVID-19 pandemic brought renewed national attention to the essential role of childcare as widespread closures disrupted parents' ability to work or stay enrolled in school (Evans, 2024; Garcia & Cowan, 2022). While decades of research link childcare availability to improved labor market outcomes, particularly for mothers (Almond & Currie, 2011; Cascio & Schanzenbach, 2013; Sabol & Chase-Lansdale, 2015; Schochet & Padilla, 2022), far less is known about its role in supporting parents during education and training programs prior to labor market entry.

In an increasingly skill-based economy, many parents are enrolling in education and training programs to improve career opportunities and financial stability for their families (Chetty et al., 2017; Pressler et al., 2016). Between 30% and 70% of participants in large-scale federal workforce training programs are adults with children (Gardiner & Juras, 2019; Peck, 2022; Yates, 2024). Despite the large participation, adults with children are nearly half as likely (60%) as their peers without children (37%) to complete a postsecondary credential within six years (Gault et al., 2020). Although a range of factors influence parents' experiences in education and the labor market, accessibility and affordability of childcare is a well-documented barrier to success (Contreras-Mendez & Cruse, 2021; Freeman & Dodson, 2021; Gardner et al., 2017; Wladis et al., 2018).

Within workforce training programs, childcare can take multiple forms that vary in accessibility, coordination, and the amount of logistical work placed on families. Some programs offer direct childcare, in which the training provider coordinates or supplies childcare services—often by co-locating care with training sites or aligning hours and program components with class schedules (DeMario, 2021; Fadale & and Winter, 1991; Hess et al., 2018). Other programs

use a referral or partnership model, connecting parents to external childcare providers through resource lists or informational support. These institutional differences shape how much coordination work falls to parents, influencing the time and effort required to secure care while participating in training. Despite the prevalence of childcare supports in these programs, there is little evidence regarding how different service delivery affect parents' success in education and workforce training programs.

Theoretical Framework

Workforce training programs represent a growing model for supporting low-income adults in accessing higher-wage employment. These initiatives generally combine sector-specific education, stackable credentials, and wraparound supports that help participants navigate school, work, and caregiving demands (Hendra et al., 2023). For parents, one of the most consequential supports is childcare (Chase-Lansdale & Brooks-Gunn, 2014).

Family systems theory provides a useful lens for understanding why families operate as interdependent units. It posits that changes in one member's experiences affect others. When children are in safe, reliable, and nurturing childcare, parents are better able to focus on their education and employment goals (Duncan et al., 2010). Children's positive developmental experiences can reinforce parents' motivation to enroll, persist, and complete training programs (Chase-Lansdale & Brooks-Gunn, 2014; Sabol & Chase-Lansdale, 2015). From this perspective, childcare is foundational to parents' educational success. In fact, parents often cite their children as the primary motivation for pursuing education and training (Generation Hope, 2023; Sommer et al., 2018), yet the lack of accessible and affordable childcare remains one of the most significant barriers to staying enrolled.

However, all childcare is not created equal and can vary greatly in how and where it is provided, particularly in career pathway programs. These differences shape the level of coordination parents take on to secure care in order to participate in training programs. Administrative burden is a framework through which to understand and measure the logistical, psychological, and financial costs of interacting with public sector policies and programs (Barnes, 2021; Moynihan et al., 2015). In the context of workforce training, childcare supports can either reduce or increase these costs. For example, when childcare is coordinated by the program, logistical work is minimized. However, when parents must identify and secure care on their own, time, effort, and uncertainty may increase.

Parents in Education and Workforce Training Programs

Education and workforce training programs exist across a variety of institutional contexts, including postsecondary institutions such as community colleges, four-year universities, and for-profit colleges, as well as government funded workforce agencies and community-based organizations. In more traditional education pathways, nearly three million undergraduate students are parents of dependent children (Anderson et al., 2022). These parents face persistent challenges such as financial insecurity, time poverty, and feelings of invisibility within academic spaces (Duquaine-Watson, 2007; Goldrick-Rab et al., 2020; Miller et al., 2020). Limited access to childcare is a common thread contributing to the disproportionately high dropout rates of parents compared to nonparents (Freeman & Dodson, 2021; Gardner et al., 2017; Noll et al., 2017).

Workforce training programs are another pathway through which low-income parents can pursue education and access higher-wage employment. Some of these programs are particularly designed to serve parents receiving Temporary Assistance for Needy Families (TANF), a

program that ties continued cash assistance to participation in approved work activities. TANF typically requires recipients to meet strict work participation requirements (often 20–30 hours per week), and education or training does not always count toward those hours. As a result, parents may need to work in addition to attending training to maintain benefits or to cover basic expenses including childcare. At the same time, securing childcare that accommodates nontraditional and fluctuating schedules is a persistent challenge (Baum et al., 2021; Hahn et al., 2016, p. 201). Parents need childcare to meet both work and training demands, yet the systems that govern cash assistance, childcare support, and workforce training are often siloed rather than coordinated.

Childcare Support and Success in Education and Training Programs

For parents, success in education and training programs is typically defined by persistence, completion, and movement into higher-paying employment. In addition to benefiting families, these outcomes are important to policy initiatives that invest in workforce development. Yet, parents face structural constraints, such as including rigid participation requirements, unpredictable schedules, and limited access to childcare that make it difficult to complete training. When parents are unable to continue training, both families and programs bear the cost.

As more workforce and postsecondary programs attempt to integrate childcare supports, how childcare is delivered varies widely. Programs generally rely on one of three models: (1) direct/on-site childcare provided by the program itself, (2) formal partnerships with outside providers where some logistics are coordinated (e.g. reserved slots), (3) referrals to outside providers, typically in the form of information list, where parents must find and secure childcare independently.

Direct Models of Childcare Support

Direct childcare models refer to arrangements in which the training program takes primary responsibility for securing and coordinating childcare on behalf of participants. This can include co-locating care on site, contracts with specific providers to serve program participants, or program-managed enrollment. What distinguishes direct models is not necessarily where care takes place, but who performs the coordination work. In direct models, the program, not the parent, handles scheduling, paperwork, and enrollment logistics, substantially reducing administrative burden compared to other approaches (Long, 2017). By shifting coordination from parents to the program, direct models acknowledge that parents' ability to succeed in education and training depends on accessible and stable childcare arrangements.

A growing body of research evidences a link between direct childcare models and parent education and training success. In one career pathway program, Career*Advance*, participants received tuition-free education and career training in healthcare with coordinated childcare services through Head Start as well as with other family supports. Quasi-experimental studies of Career*Advance* demonstrated higher rates of certification received and employment in healthcare among participants compared to a comparison group, and effects were sustained three years later (Chase-Lansdale et al., 2019; Chor et al., 2023).

Efforts to provide childcare on community college campuses, like the Child Care Access Means Parents in School Program (CCAMPIS), have also been associated with parent success (Hess et al., 2018). CCAMPIS is a federal program that provides grants for on-campus, subsidized childcare. A longitudinal analysis of the Monroe Community College (MCC) in Rochester, New York—a CCAMPIS recipient—found greater retention and completion among students who used its childcare centers compared to those who did not (DeMario, 2021). Larger-scale analyses of on-campus childcare show that student parents who use campus childcare

services were significantly more likely to persist and complete degrees than comparable student parents who did not use the childcare services (Cruse et al., 2019; Fadale & and Winter, 1991). While most studies outside of Career*Advance* are descriptive, evidence suggests that reducing administrative burden may be the mechanism through which direct models support parents' success (Gault et al., 2020; White & Cruse, 2021)**.**

Partnerships With and Referrals to Childcare Providers

Other models of childcare, such as partnerships and referrals, offer an alternative approach that may increase parental choice but shift more responsibility onto parents to arrange care. Such models are often more realistic for workforce training programs, as they do not necessarily have the infrastructure, administrative capacity, or funding to provide accredited childcare to their parent participants. Yet, the empirical evidence on these provision models is limited. An experimental evaluation of an enhanced version of Early Head Start, carried out in Kansas and Missouri, offers useful insights into less intensive approaches within parent-focused workforce programs. The program, called Enhanced Early Head Start, aimed to integrate parents' employment and educational support for children within traditional Early Head Start programs. The study was an evaluation of a "light touch" approach to workforce support, in which families mainly received referrals to outside workforce and education agencies. Although the study found no effects on parental employment or economic outcomes after 42 months, it did find positive impacts on those outcomes among families who were expecting a child or who had an infant when they first entered the study (Hsueh & Farrell, 2012). Similarly, an experimental evaluation of a scaled-up version of Career*Advance,* which provided childcare support for families with children aged zero through eight through a mix of partnerships and referrals, found that participants in the treatment group were more likely to receive a certificate or associate's

degree compared to the control group after one year (Tighe et al., 2024), however it did not mimic all of the positive, longterm benefits found in the original study (Chase-Lansdale et al., 2019; Chor et al., 2023). In these studies, childcare was evaluated as part of a cluster of services, so its singular effect on parental outcomes is not known.

Outside of education and training, Childcare Resource & Referral (CCR&R) organizations help families find quality childcare through providing referrals to local providers and could provide insight into the effectiveness of such services in supporting families' access to early care and education. However, a recent review by the Office of Planning, Research, and Evaluation (OPRE) in 2024 indicated that while CCR&Rs are recognized as valuable resources, rigorous, up-to-date empirical studies assessing their direct impact on childcare outcomes remain limited (Sandstrom et al., 2024).

Overall, there is no clear consensus as to which childcare models are most effective for promoting parent success. This study is one of the first to delve into the effectiveness of different types of childcare provision, identifying the service models that have the highest associations with parent education and employment success.

Background on Health Professions Opportunities Grant and Evidence to Date

To further understand the role of childcare and the efficacy of different childcare models in education and training programs, this paper uses data from the national evaluation of the Health Professions Opportunity Grant (HPOG) 2.0. In 2010, the Affordable Care Act (ACA) established HPOG to meet increasing demand for healthcare workers. HPOG was administered by the Administration for Children and Families (ACF), and designed to help low-income adults pursue high-demand, family-sustaining careers in healthcare. Using a combination of education, employment services, and supports such as childcare, institutions across the country

implemented HPOG programming in two rounds: HPOG 1.0 (2010) and HPOG 2.0 (2015). Evaluations of HPOG 1.0 demonstrated positive short-, intermediate-, and long-term impacts in most domains across the 32 program sites.

HPOG 2.0, the focus of this study, had positive impacts on supporting the career advancement of participants (Klerman et al., 2022). Sixty-three percent of treatment group participants made educational progress, which was defined as completing training by earning a credential or being continuously enrolled in training 15 months after randomization, compared to 46% of the control group. Importantly, parents appeared to benefit more: participants with dependent children showed a 6.5 percentage point greater gain in educational progress compared to nonparents. There were also some early markers of labor force impacts: 45.1% of the treatment group was employed in the healthcare sector after 15 months, compared to 41.1% of the control group (Klerman et al., 2022). However, there were no impacts on employment in any sector (66.4% in the treatment group, compared to 66.3% in the control group).

In HPOG 2.0, program grantees delivered childcare support via four modes: (1) direct service provision, (2) partnerships with childcare providers, (3) referrals to external providers, or (4) some combination of these three modes. All providers were required to be state-approved and licensed. Although all grantees were offered child or dependent care assistance and childcare was cited as the second most common barrier to work or study by participants in the baseline survey, only 4% of participants used it (Klerman et al., 2022; Mikelson et al., 2017; Sick & Loprest, 2021). Yet to date, no studies have systematically examined how the different service delivery models of childcare shaped take-up or outcomes. This is a notable gap, especially given the demonstrated benefits for parents in the program. Understanding whether and how the structure

of childcare support, particularly in the context of administrative burden, matters is critical to improving the design of future workforce programs for families.

Current Study

Using data from the HPOG 2.0 federal education and training initiative, this study sought to better understand the experiences and successes of parents when offered childcare services during their education and training. We posed two primary research questions, with the goal of identifying the childcare delivery models that have the highest associations with parent education and employment success.

1. How do rates of childcare receipt differ across childcare models? We hypothesize that childcare directly provided by the grantee would have the highest rates of service receipt compared to partner, referral, and "more than one" (Klerman et al., 2022; Long, 2017; Loprest & Sick, 2022; Mikelson et al., 2017).
2. How does offering different models of childcare impact parents' certification and employment in healthcare? We hypothesize that the offer of childcare will improve the likelihood of parents' certification receipt and employment in healthcare, and that "direct service" will have the greatest impact on both outcomes (Chase-Lansdale et al., 2019; Chor et al., 2023; DeMario, 2017; Hsueh & Ferrell, 2012; Long, 2017; Tighe et al., 2024).

Method

The current study used data from a randomized control trial of the federal HPOG 2.0 programs (2015-2021). Twenty-seven organizations were awarded HPOG 2.0 grants between 2015: 10 higher education institutions, seven workforce agencies, six community organizations, and four state government entities. Grants varied in size (from $900,000 to $3 million annually) as well as enrollment projections (fewer than 500 participants to over 2,000) (Klerman et al.,

2022). HPOG 2.0 programs use a range of strategies to recruit participants to apply for their HPOG 2.0 programs, including referrals from local partners, social media, and print material distribution. To participate in HPOG 2.0, participants had to be TANF recipients or "other low-income individuals" (as defined by grantees[1]), and were screened for academic skills, criminal background, drug use, and motivation for a career in healthcare (N = 52,075; Roy et al., 2022).

Grantees used a lottery process to randomize participants into treatment and control groups on a rolling basis between September 2015 and August 2019. After random assignment, the treatment group had the opportunity to select a target occupation with a corresponding course of study. Thus, the treatment group experience varied based on the type and length of the training pathway (Klerman et al., 2022). The treatment group had access to HPOG 2.0 education and training services along with other supports. The control group did not have access to any HPOG 2.0 services or supports during the study period but could receive other services available in the community ("business as usual").

HPOG 2.0 grantees developed their programs to help participants prepare for and enroll in healthcare occupational training and participate in the workforce. Grantees were directed to provide support services in addition to education and training. Examples of support services include basic skills training (e.g., digital literacy), academic supports (e.g., tutoring), and personal/logistic support (e.g., child/dependent care assistance). Grantees could provide supportive services directly or through relationships with partner organizations. As previously noted, HPOG 2.0 parent participants were offered childcare through various models depending

[1] Programs had substantial discretion when establishing eligibility criteria and definitions of low-income depending on their local contexts. All sites submitted descriptions of their recruitment, referral, and eligibility processes to ACF (Klerman et al., 2022).

on their grantee: direct service, program partner, referral, or some combination of the three (i.e., "more than one type").

Data

We use HPOG 2.0 data from two sources: (1) the Participant Accomplishment and Grant Evaluation System (PAGES) and (2) short-term follow-up survey data of a subsample of participants. PAGES is a web-based management system that contains approximately 50,000 records of HPOG 2.0 study participants, which were collected by each nontribal grantee at program intake. The system contains baseline data for both treatment and control participants as well as post enrollment data for treatment participants only (i.e., control participants were not followed by the grantees). Maintained by program administrators, PAGES includes person-level demographic characteristics (e.g., race, education, employment, social assistance) and data on services offered by the grantee (e.g., training, childcare support).

A short-term follow-up survey of HPOG 2.0 participants conducted by Abt Associates was completed 15 months (on average) after random assignment. The Abt HPOG 2.0 Impact Evaluation team fielded the survey to a subsample of 13,000 participants. With a 74% response rate (77% treatment, 70% control), 9,620 survey participants provided detailed information on certification received and employment (Klerman et al., 2022). This response rate is similar to other studies with low-income populations. For example, the Head Start Impact Study reached response rates of approximately 80% for parents and children throughout the study, which was considered high (Puma et al., 2010).

Through anonymized participant ID variables, we merged grantee- and participant-level data from PAGES, such as model of childcare, childcare receipt, and participant baseline

characteristics, with participant follow-up survey data on 15-month certification and employment outcomes.

Sample

Each research question uses a different analytic sample. The first research question draws from the full parent participant sample. The second research question draws from the follow-up sample of parent participants. Figure 1 includes a breakdown of the samples for each research question.

[Insert Figure 1 here]

This study focused specifically on HPOG 2.0 participants who were parents at program intake. We defined parents as having at least one dependent child based on participants' self-report in the baseline PAGES data. Table 1 details baseline characteristics for each analytic sample, and mean differences between treatment and control group characteristics within each analytic sample.

The full parent sample (Column 1 of Table 1) consisted of 33,945 parent participants, the majority of whom were female (96%). Nine hundred and six participants who did not have information on childcare use were dropped. Given program eligibility requirements, all parents lived in low-income households, with an average household annual income of $15,352 (*SD* = $13,200). Nearly half of the parents (49%) lived below 50% of the federal poverty level (FPL), while approximately three-quarters (75%) fell below 100% of the FPL. Participants indicated receiving on average 3.3 social assistance programs (*SD* = 1.76). The most common programs that participants indicated participating in were Medicaid (79%), Supplemental Nutrition Assistance Program (SNAP; 69%), and free or reduced-priced school meals (FRPL; 59%).

Additional forms of public assistance included Temporary Assistance for Needy Families (TANF; 24%), subsidized childcare/vouchers (16%), and public housing assistance (22%).

The sample was racially and ethnically diverse with the majority as White (54%), followed by Black (36.1%), Hispanic (24%), American Indian/Alaskan Native (3%), Asian (2%), and Native Hawaiian/Pacific Islander (2%). Educational attainment among participants varied: 51% had a high school education or less, 37% had attended some college, and 12% obtained an associate's degree or higher. Roughly one third of participants previously received some form of occupational or professional training prior to data collection (35%) and/or received an occupational certificate or diploma (31%), or a professional, state, or industry certification or license (34%), and 20% were enrolled in school or training programs at baseline. Fewer than half (44%) were currently employed, and 50% have prior work experience in healthcare. The average household size was 3.68 (*SD* = 1.51) individuals, with an average of 2.04 children per household (*SD* = 1.13). Under a quarter of parents reported having a partner (21%) and 4% of participants (or their partners) were pregnant or expecting. Six percent of parents reported having a disability, and 9% had a child with special needs. As shown in Column 3 of Table 1, no baseline characteristics were significantly different across the treatment and control groups, indicating successful randomization for the full parent sample.

Of the full parent sample, 6,365 participants across the treatment and control groups completed the short-term follow-up survey. The follow-up parent sample was similar to the full parent sample in terms of most demographic, socioeconomic, and household characteristics, but there were a few notable differences (see Column 6 of Appendix Table A for standardized mean differences between the two analytic samples). In the follow-up sample (Column 5 of Table 1), 3% of parents identified as Native American/Pacific Islander, compared to 2% in the full sample

(*SMD* = −0.06, $p < 0.001$). The follow-up sample had higher educational attainment, with less individuals having less than a high school education or a GED (*SMD* = 0.07, $p < 0.001$) and more having attended some college (*SMD* = −0.05, $p < 0.001$). Additionally, a greater share of parents in the follow-up sample were currently employed (*SMD* = −0.05, $p < 0.001$) or had previously been employed in the healthcare sector (*SMD* = −0.05, $p < 0.001$). Partnered parents were also more prevalent in the follow-up parent sample compared to the full parent sample (*SMD* = −0.05, $p < 0.001$).

There are few meaningful or statistically significant differences in baseline characteristics across the treatment and control groups in the follow-up sample (Column 8 of Table 1). The treatment group had higher incomes at baseline (*SMD* = 0.07, $p = 0.017$), were less likely to

Measures

Childcare Service Delivery Model

In PAGES, grantees reported their childcare service delivery models: "direct" (i.e., direct service through the grantee), "partner" (i.e., through a program partner organization), "referral" to a non-HPOG organization, or "more than one" model of childcare. The data do not provide further specification on the "more than one" category. Grantees reported yes or no as to whether treatment participants were offered any child or dependent care as a supportive service. These four models are coded into four separate binary variables for each type of childcare model (1 = *yes* if the grantee offered that specific childcare model). For research question 2, we also used three separate binary variables that compared the direct service model to the three other models.

Certification and Employment Outcomes

All outcome measures were binary (1 = *yes*). Certification was indicated in the follow-up survey by whether the participant received any new diploma, degree, vocational certificate, or

license as of 15 months after randomization. Participants also indicated in the follow-up survey whether they were employed in the healthcare field. We also explored additional employment outcome variables in post hoc analyses, including full-time, part-time, and both full-time/part-time employment in any sector.

Baseline Covariates

All covariates were measured at baseline for treatment and control participants and include the number of people living in the household, number of children under age 18 living in the household, total household income, binary indicators for race/ethnicity, whether they have a child that has special needs, whether participant had a disability, gender, baseline employment, ever worked in healthcare, currently in school or training, eligible for programs under the Workforce Investment Act/Workforce Opportunity and Innovation Act (WIA/WIOA), partner status (1 = *married or living with unmarried partner*, 0 = *divorced, separated, or widowed*), and pregnant or expecting (1 = *participant or participant's partner pregnant and/or expectant*, 0 = *not pregnant or expecting*).

Household income relative to the FPL was determined using the U.S. Department of Health and Human Services (HHS) poverty guidelines for the year in which each participant was randomized into the study (2016–2021). Each participant reported household income is compared to the FPL threshold corresponding to their household size and randomization year. Participants were coded as at or below 50% FPL if their total household income was less than or equal to 50% of the FPL threshold for their household size and enrollment year, and at or below 100% FPL if their total household income was less than or equal to 100% of the FPL threshold. Participants with an FPL Ratio ≤ 0.50 were coded as at or below 50% FPL (1 = yes) and those with an FPL Ratio ≤ 1.00 were coded as at or below 100% FPL (1 = yes).

Covariates also included binary indicators for participation in social assistance programs at baseline (1 = *yes*), including FRPL, WIC, SNAP, TANF, Medicaid, Subsidized Childcare, Section 8/Public Housing, Low Income Home Energy Assistance Program (LIHEAP), Supplemental Security Income (SSI), and Social Security (SS) or Social Security Disability Insurance (SSDI). For parsimony, we created summary scores for social assistance receipt using the 9-program indicator. Binary indicators for previous training experience included "ever received occupational (not for college credit) training," "ever received an occupational certificate or diploma," and "ever received a professional, state, industry certification or license." We created a summary score for prior training experience using the three training indicators.

Participants were asked to report their highest level of education at time of baseline. Education was recoded to three mutually exclusive: high school degree or less, some college credit, and associate's degree or higher.

Analytic Strategy

The first research question uses treatment participants in the full parent sample in the HPOG 2.0 PAGES survey dataset (n = 22,575). Childcare take-up was only collected for the treatment group. Among the 1,355 who took-up childcare, we examined the frequency of childcare provision across the four models.

The second research question leverages the experimental design of HPOG 2.0. Participants were randomly assigned to treatment or control groups, enabling causal estimation of program impacts on educational and employment outcomes. However, because childcare use was not collected for the control group, we cannot examine childcare take-up across both groups. Instead, we use the childcare *offer*—captured through the four childcare models—as a proxy for exposure to childcare support services. This approach allows us to compare differences in

certification and employment in healthcare between the treatment and control groups after 15 months (n = 6,365). To assess the appropriateness of this strategy, we conducted several tests. First, we estimated the unconditional treatment effects of HPOG 2.0 on educational and employment outcomes across the four childcare service delivery models (direct, partner, referral, and multiple providers) and made comparisons of these treatment impacts across each childcare model. Next, we compared demographic characteristics across the four provider types within the control group to determine observable characteristics that could contribute to differences across childcare models. As expected, we found significant differences in characteristics within the control group across the four childcare models due to the endogeneity of site and childcare provider mode, including race, education, income, TANF receipt, WIA/WIOA eligibility, partner status, and children's special needs. To address the issue of endogeneity of site and childcare model, we regression-adjusted our models for these observable characteristics. This removed enough variance within the control group so that significant differences became null after the inclusion of baseline covariates between each of the childcare model comparisons (See Appendix Table B1 and B2 for regression-adjustments for the certification and employment outcomes respectively). Covariates included gender, race, education, employment, household income, poverty level, social assistance receipt, previous workforce training, pregnant/expecting, relationship status, disability status, number of children in the household, and whether the child had special needs.

We then measured adjusted treatment effects on parents' outcomes after 15 months of treatment by childcare model offered using an interacted model which regresses a parent outcome on treatment status, childcare model offered, and the interaction between the two. The

interaction terms are a nonexperimental estimate of the differential impacts of the program by the childcare model offered.

To handle missing data among baseline characteristics, we created a binary indicator for each variable with missingness, coded 1 for participants with missing data and 0 for those with observed data. These indicators were included as predictors in our regression models to retain sample size while capturing any systematic patterns in missingness (White & Thompson, 2005).

Results

How do rates of childcare receipt differ across childcare models?

To address the first research question, we calculated childcare use as the number of parent participants who used HPOG 2.0 childcare relative to all treatment parents in a grantee within a given mode. Overall, only 6% of parents took up childcare services, and take-up varied by provision model. The childcare model with the highest take-up rate was direct childcare, with 9.61% of parents across seven grantees that received this service. Referral was next, with 6.76% take up rate across three grantees. "More than one model" had a 5.48% take-up rate across 13 grantees. Finally, the partner model had the lowest take up rate of 2.98% across two grantees.

How does offering different models of childcare impact parents' certification and employment in healthcare?

For the second research question, we measured the effect of HPOG 2.0 participation on parents' certification and employment in healthcare after 15 months by comparing the direct service childcare model to the other three service models in separate regressions. The four interacted OLS regression models regressed the binary parent outcome (certification or employment in healthcare) on treatment status (1 = *treatment* , 0 = *control*), childcare model using direct service as the reference group (e.g., 1 = *direct*, 0 = *partner*; 1 = *direct*, 0 = *referral*; 1

= *direct*, 0 = *more than one*), and the interaction between the two. We found a significant impact of treatment on certification across the four regressions. As demonstrated in Table 2, the effect of treatment on certification was 16 percentage points higher for the direct model compared to the partner model ($\beta = 0.16$, $SE = 0.04$, $p < 0.001$), 18 percentage points higher compared to the referral group ($\beta = 0.18$, $SE = 0.05$, $p < 0.001$), and 10 percentage points higher compared to more than one provider type ($\beta = 0.10$, $SE = 0.03$, $p = 0.002$).

Additionally, we found no significant impact of treatment on employment in healthcare in any childcare model compared to direct service.

[Insert Table 2 here]

Post Hoc Analyses

We conducted three sets of post hoc analyses: 1) examining an additional outcome, 2) changing the reference group among childcare models, and 3) investigating differences in childcare models by grantee characteristics.

Given the non-significant impacts of treatment on employment in healthcare across the four childcare models, we conducted post hoc analyses exploring the role of childcare on employment in any sector after 15 months. Given the short follow-up period, participants in HPOG 2.0 may have greater success finding a job in any sector that also allowed more flexibility as they navigated finding new childcare after the program ended. On the other hand, sector-specific jobs may be more competitive, take longer to obtain, and have less flexibility. However, there were no significant impacts of treatment on this employment indicator.

After establishing that direct childcare sites produced significantly stronger treatment effects than the other models, we conducted post hoc comparisons among the remaining three childcare models (partner, referral, and more than one) by changing the reference category in the

regression models. These additional comparisons were statistically insignificant for certification or employment in healthcare outcomes

Given the consistently stronger treatment effects among participants in sites that provided direct childcare, we conducted post hoc descriptive analyses to explore potential explanations underlying this pattern. Specifically, we examined whether direct childcare sites differed systematically from other grantees in their participant composition, organizational structure, or state policy context.

At the grantee level, we examined the distribution of direct versus non-direct childcare models across organizational characteristics, including grantee size and grantee type (community-based organization (CBO), educational institution, workforce/state agency (WSA), or state government). We also explored whether grantees serving a larger share of parents with very young children—proxied by the percentage of participants reporting WIC receipt at baseline—were more likely to offer direct childcare. Finally, we pulled county-level geographic classifications from the U.S. Department of Agriculture's (USDA) Rural–Urban Continuum Codes (RUCC), which distinguish metropolitan counties by the population size of their metropolitan area and nonmetropolitan counties by their degree of urbanization and adjacency to metro areas. The RUCC ranges from 1 (counties in metro areas of 1 million or more) to 9 (completely rural counties not adjacent to a metro area)**.** To simplify interpretation, the RUCC variable was recoded into a binary urbanicity indicator distinguishing grantees in metro (1; RUCC codes 1-3) and non-metro (0; RUCC codes 4-9) areas.

Appendix Table C1 shows descriptive comparisons (t-tests) across direct childcare sites and non-direct childcare sites. Grantees that offered direct childcare had fewer total participants enrolled on average compared to grantees providing non-direct childcare (*SMD* = -0.931, $p <$

0.001). Direct childcare was more common among community-based organizations and state government grantees compared to non-direct childcare provision models (*SMD* = 0.248; $p < 0$ .001). Direct childcare models served a higher proportion of WIC participants (*SMD* = 1.00, $p <$ 0.001) compared to grantees providing non-direct childcare. Finally, direct childcare was more common among grantees located in urban areas compared to grantees with non-direct childcare (*SMD* = 0.507; $p < 0.001$).

Taken together, these descriptive patterns suggest that structural and contextual features of grantees may provide useful context for interpreting the stronger treatment effects observed for direct childcare sites.

Discussion

This study examines how childcare models shape the effectiveness of education and workforce training programs for participants with children. Because parents participate in training within a broader family system, children's needs and parents' educational goals are interdependent (Cox & Paley, 2003). When childcare is unstable or difficult to secure, disruptions to children's routines directly interfere with parents' ability to attend class or persist in training. For low-income parents, accessing childcare often requires navigating multiple, uncoordinated eligibility systems. These processes create administrative burden**,** or the learning, compliance, and psychological costs placed on individuals to access and keep public benefits (Herd & Moynihan, 2019). In many workforce programs, "childcare support" still places the coordination burden on parents, who must locate providers, secure subsidies, and manage billing. In contrast, direct childcare models shift these coordination tasks to the program, reducing paperwork and decision-making, freeing parents to focus on training. In fragmented policy systems, these kinds of program designs can affect accessibility, where eligible participants may

still fail to receive or benefit from services due to administrative requirements, time costs, or distrust of external providers (Allard, 2009; Herd & Moynihan, 2019). Thus, what matters is not simply whether childcare exists, but whether its structure reduces administrative burden within the family system, which may have important implications for parents' ability to succeed in education and workforce training programs. HPOG 2.0 programs provided a range of childcare models that fit within their constraints and expertise. This paper utilized this variation to directly explore what kind of childcare offering best supports parents.

Different Childcare Models of Provision are Associated with Different Take-Up

Although childcare was available to all treatment parents, only 6% of parents took up services, and take-up varied by provision model. This take-up is slightly higher than the take-up rate among the full sample of all treatment participants (4%), and emphasizes that even within just the parent sample, the take-up rate is quite low (Klerman et al., 2022). Parents at sites with direct childcare services showed the highest receipt (9.6%), while partner and referral models saw substantially lower use among participants (3–6%). This pattern likely reflects logistical and psychological barriers inherent to referral-based or partner models; navigating additional administrative processes, securing childcare slots from external providers, and trusting the quality of third-party services all introduce barriers that can deter use, particularly for low-income parents already stretched for time and resources (Herd & Moynihan, 2019). Conversely, direct childcare reduces learning, compliance, and psychological costs, making the support usable. Moreover, childcare was just one of several supportive services offered under HPOG 2.0, and variation in how these other services were delivered may have compounded the barriers participants faced, making it difficult to isolate the specific role of childcare provision alone.

Considering over 70% of participants were at or below 100% of the federal poverty level in our sample, participants likely interacted with multiple supports.

Understanding Impacts of Direct Childcare Provision on Certification and Employment

From a family systems lens, childcare and education are not parallel processes; stable childcare creates the conditions under which parents can participate in training. Direct childcare provision likely promoted certification attainment in similar ways it promoted access—by reducing administrative burdens, stabilizing parents' daily schedules, minimizing last-minute care disruptions, and reducing stress about child safety and well-being (Cruse et al., 2019). Direct childcare may have reduced learning costs by eliminating the need for parents to identify, apply for, and verify eligibility with external providers; compliance costs by reducing paperwork and recertification demands; and psychological costs by allowing parents to access childcare through trusted institutions rather than navigating complex or stigmatizing welfare systems.

These findings also mirror prior evidence from Career*Advance*, in which embedded Head Start services supported higher rates of healthcare certification (Chase-Lansdale et al., 2019; Chor et al., 2023). Parallel findings in postsecondary education further show that on-campus childcare—a form of direct, co-located support—is associated with higher graduation rates for student parents (Gault et al., 2018; Noll et al., 2017).

In contrast, referral and partner models likely shifted these administrative demands onto parents, requiring additional coordination and time—resources already scarce among low-income families balancing education, work, and caregiving. While referral-based or lightly coordinated models may have promoted parent choice, they also likely required parents to invest additional time and energy into reviewing and arranging care, potentially undermining their ability to persist in education and training programs even if they took up the service. On the other

hand, some evidence suggests that strong partnerships or well-structured referrals can be effective when implemented with fidelity (Hsueh & Farrell, 2012; Sandstrom et al., 2024; Tighe et al., 2024). Regardless, in our study, the higher take-up and stronger educational impacts observed in direct childcare sites may reflect not only greater material access to care but also reduced bureaucratic friction in obtaining it.

Direct childcare provision did not significantly impact employment across a range of employment indicators both within the healthcare sector and more broadly, compared to the other childcare models. While the HPOG 2.0 short-term impact evaluation found significant impacts of treatment on employment in healthcare across study participants, parents in particular may have a harder time finding and maintaining employment, regardless of the childcare support they may have been offered (Klerman et al., 2022). Moreover, assistance was likely only available during active program participation, potentially creating a new barrier to employment just as participants became ready to enter the labor force. Even though direct childcare may have supported credential attainment by enabling parents to complete coursework, sites may have varied in whether they provided the sustained support needed to transition into and maintain employment, particularly in healthcare roles that demand irregular hours or nontraditional shifts (Henly et al., 2006). Even when parents complete training, administrative and family demands could resurface during employment transition, where childcare must be secured again, often through new eligibility processes. The absence of significant impacts on employment echoes patterns found in similar workforce interventions, suggesting that educational gains may not immediately translate into labor market outcomes within a short follow-up window (Chase-Lansdale et al., 2019; Klerman et al., 2022; Tighe et al., 2024).

These findings suggest that short-term childcare supports, while helpful for educational persistence, may be insufficient for promoting longer-term labor market outcomes. Educational gains from training programs often precede labor market returns. Research indicates that employment effects may take longer to materialize—often beyond the typical 12- to 18-month follow-up window—especially when participants focus initially on completing coursework and earning credentials before entering or reentering the workforce (Chase-Lansdale et al., 2019; Fitzenberger et al., 2023; Klerman et al., 2022; Tighe et al., 2024).). For instance, the WorkAdvance demonstration found that significant earnings gains emerged after two years with impacts persisting through the seven-year follow-up period (Kanengiser & Schaberg, 2022). These findings underscore the importance of allowing sufficient time for participants to translate educational achievements into meaningful labor market outcomes before making conclusions on the efficacy of the intervention.

Although we conducted experimental-adjacent analyses, childcare model was not randomized so results must be interpreted cautiously. Grantees likely selected their childcare provision approach based on institutional resources, local partnerships, or funding availability, introducing potential endogeneity between childcare model and grantee context. While we adjusted for baseline participant characteristics to reduce individual-level bias (Holmberg & Andersen, 2022), unobserved site-level differences likely remain.

Unpacking Contextual Drivers of Direct Childcare Provision

To explore these potential differences and clarify the contexts in which direct childcare emerged, we conducted post hoc descriptive analyses of grantee-level characteristics. These analyses help identify the institutional and policy conditions that may make direct childcare both more feasible to implement and more effective in supporting parents' educational progress.

At the institutional level, grantees offering direct childcare tended to serve smaller participant populations and higher shares of families receiving WIC at baseline—patterns that suggest both a narrower service focus and closer ties to families with young children. These characteristics may have enabled more personalized supports and streamlined communication between staff and parents, further lowering learning and compliance costs. On the other hand, larger grantees or those serving more heterogeneous populations may have faced competing demands that limited their capacity to provide direct care. The finding that community-based organizations were more likely to provide direct childcare than non-direct childcare support this pattern as well, given their established relationships with local providers and their emphasis on family-centered service delivery.

Grantees that offered direct childcare services were also located exclusively in metropolitan areas, where organizational infrastructure, provider density, and administrative capacity are typically higher. These features likely made it more feasible to coordinate and deliver childcare directly, while grantees in suburban or rural settings, often situated in "service deserts" (Allard, 2009), may have lacked the institutional supports or resources necessary to do so. These spatial differences highlight how local service capacity intersects with administrative burden, where parents in more rural areas not only face fewer providers but also higher learning and compliance costs in identifying, applying for, and maintaining care while pursuing education and training.

As indicated above, local and institutional contexts may limit the feasibility of implementing direct childcare in workforce programs and shifting administrative burden away from participants. As such, it is important to understand alternatives to direct childcare, even though it may be the preferable option. Direct provision often requires deep organizational

expertise in early childhood care, including licensure staffing, and dedicated space, that many workforce agencies lack. In such cases, strong partnerships with established childcare providers may be a feasible alternative. While the partner model had the lowest take-up and more modest outcomes, it may still offer a practical middle ground, particularly if those partnerships are well integrated and responsive to parent needs and schedules. By contrast, referral models, which are often the lowest-cost option, may reflect a more passive approach that enables grantees to fulfill program requirements or check a box without meaningfully supporting families or reducing barriers. Administrative burden theory suggests that the question is not whether childcare exists in a program, but who (the parent or the institution) bears the coordination burden.

Our findings suggest that the type of childcare matters for parents' success in training. As future workforce initiatives are designed, program planning and proposal evaluation should reflect this evidence. Rather than simply asking applicants whether childcare will be offered, funders could require a clear plan describing how childcare services will be delivered, coordinated, and monitored. Stronger contracting language and accountability structures would discourage passive referral approaches and ensure that childcare supports are embedded meaningfully within the service model—aligning program incentives with parents' needs and improving the efficacy of training programs.

Limitations and Future Directions

Several limitations should be considered when interpreting these findings. First, because childcare receipt was not directly measured for control group participants, we relied on the offer of childcare rather than the actual childcare take-up.

Second, childcare model was determined by grantee discretion rather than random assignment and thus was endogenous to site. While baseline covariate adjustments reduce

potential bias (Holmberg & Andersen, 2022), unobservable differences in site infrastructure, funding, or program culture may remain.

Third, implementation fidelity within childcare models was not systematically captured. Not all direct service grantees may have delivered childcare with equal quality, and not all partnerships or referrals were necessarily weak; heterogeneity within childcare models could bias results toward smaller observed differences. Additionally, the "more than one" provision category was widely used by grantees, but it is difficult to interpret consistently, likely encompassing substantial variation in parental experiences. For instance, parents offered multiple childcare models may have been subject to more grantee discretion, creating uneven experiences that complicate interpretation of average effects (Henly et al., 2015).

Future work could explore cross-site variation in program characteristics, including the provision of childcare. For example, in-depth qualitative data collected by Abt associates suggested that, broadly, available childcare options were often limited, included long waitlists, or did not align with participants' schedules. Many parents indicated relying on family for childcare support, and other participants had preexisting care arrangements that were ineligible for HPOG funding (Thomas, 2022). Exploring this qualitative work further could be used to triangulate our findings to better understand the childcare experiences of parents across programs.

Finally, income outcomes were not examined. Prior evaluations of workforce training initiatives suggest that income effects may take longer to emerge than the 15-month follow-up period allows (Rutschow et al., 2024). With the recent release of the three-year follow-up data, future work can follow these parents to explore whether labor market outcomes are also positively impacted because of the childcare model provided.

This study provides a unique contribution by examining variation in models of childcare support services across the range of institutional contexts in which education and training programs operate. While childcare is often framed as a general supportive service, our findings suggest that how it is delivered can shape both access and outcomes. Understanding these dynamics is critical for strengthening programs that aim to support parents' educational and career advancement.

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Main Text Tables/Figures

Figure 1.

Sample Sizes by Research Question

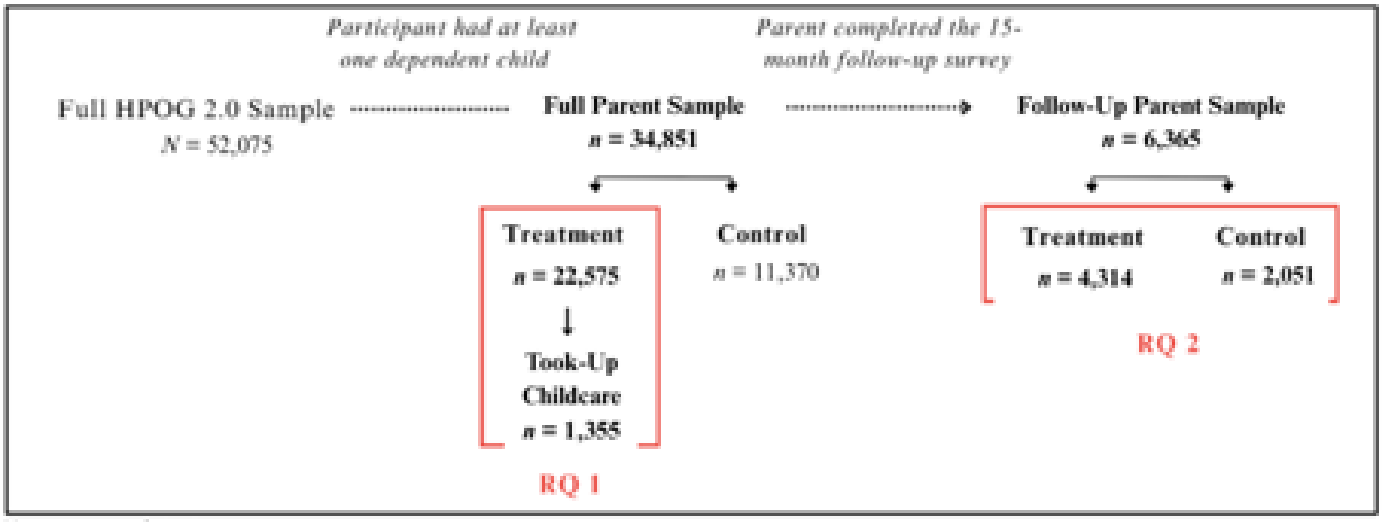


Table 1

Baseline Characteristics for the Full Parent and Follow-up Parent Samples

	Full Parent Sample				Follow-up Parent Sample			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variable	Total	Treatment	Control	Standardized Difference	Total	Treatment	Control	Standardized Difference
Female	0.96	0.96	0.96	0.01	0.95	0.95	0.96	-0.02
Race/ethnicity								
Black	0.54	0.54	0.54	0.01	0.55	0.55	0.56	-0.01
White	0.36	0.36	0.36	0.02	0.36	0.36	0.36	0.00
Other	0.07	0.07	0.07	-0.02	0.02	0.02	0.02	-0.01
Hispanic	0.24	0.24	0.25	0.01	0.24	0.23	0.25	-0.03
Education								
High school/GED or less	0.51	0.51	0.51	-0.01	0.47	0.47	0.49	-0.05
Some college credit	0.37	0.37	0.36	0.01	0.39	0.40	0.38	0.05
Associate's degree or higher	0.12	0.12	0.12	0.01	0.13	0.14	0.13	0.01
Employment								
Currently employed	0.44	0.44	0.44	0.00	0.47	0.47	0.47	0.01
Ever worked in healthcare	0.50	0.50	0.49	0.01	0.52	0.53	0.51	0.04
Income								
Income *M (SD)*	15,352 (13,200)	15,445 (13,229)	15,168 (13,141)	0.02	15,510 (12,918)	15,778 (13,069)	14,946 (12,578)	0.07*
Social assistance								
WIC	0.30	0.30	0.30	0.00	0.31	0.31	0.32	-0.02
FRPL	0.59	0.59	0.58	0.01	0.59	0.59	0.61	-0.04
SNAP	0.69	0.69	0.69	0.00	0.69	0.68	0.71	-0.05
TANF	0.24	0.24	0.25	-0.02	0.25	0.25	0.26	-0.01
Medicaid	0.79	0.79	0.79	0.01	0.79	0.78	0.80	-0.06*
SS/SSDI	0.07	0.07	0.07	0.00	0.07	0.07	0.08	-0.05*
Household characteristics								
Household number *M (SD)*	3.68 (1.51)	3.68 (1.51)	3.68 (1.52)	0.00	3.67 (1.51)	3.69 (1.52)	3.64 (1.49)	0.03

Pregnant or expecting	0.04	0.04	0.04	0.00	0.05	0.05	0.05	-0.01
Partner status	0.21	0.21	0.21	0.01	0.23	0.24	0.22	0.05
Number of children *M (SD)*	2.04 (1.13)	2.04 (1.13)	2.03 (1.14)	0.00	2.03 (1.14)	2.04 (1.14)	2.01 (1.13)	0.02
n	33,945	22,575	11,370		6,365	4,314	2,051	

Note. The full parent analytic sample includes participants with data in PAGES who had a child at baseline. The follow-up parent sample includes parents in the full parent analytic sample who completed the 15-month follow-up survey. Cell entries are mean values at baseline for treatment and control by sample. Standardized differences with p-value stars indicate significant differences in baseline characteristics between the treatment and control group in each analytic sample. All variables are coded as yes (1) and no (0) unless otherwise noted.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 2

Treatment Impact on Parent's Certification and Employment in Healthcare Across Childcare Model in the Follow-Up Parent Sample

	Certification			Employment in healthcare		
	(1) Partner	(2) Referral	(3) More than one	(4) Partner	(5) Referral	(6) More than one
Direct service	−0.00	−0.04	0.04	0.22**	0.17*	−0.13*
	(0.07)	(0.08)	(0.06)	(0.07)	(0.08)	(0.06)
Treatment	0.13***	0.11*	0.18***	0.04	−0.01	0.04*
	(0.03)	(0.04)	(0.02)	(0.03)	(0.04)	(0.02)
Treatment X direct service	0.16***	0.18***	0.10**	0.02	0.06	0.02
	(0.04)	(0.05)	(0.03)	(0.04)	(0.05)	(0.03)
Constant	0.36	0.31	0.12	0.17	0.40	−0.09
	(0.26)	(0.37)	(0.23)	(0.26)	(0.37)	(0.22)
n	2,622	1,860	4,481	2,620	1,858	4,473

Note. n = 6,365. Results show treatment effects of HPOG 2.0 participation by childcare model on parents' certification and employment in healthcare after 15 months using an interacted model. The interaction term represents the difference in the magnitude of the effect of HPOG 2.0 by the childcare model offered. The main effect of treatment status then provides an estimate of the effect of HPOG 2.0 among parents at sites who offered partner, referral, or more than one childcare model, while the sum of the main effect of treatment status and the interaction term provides an estimate of the effect of HPOG 2.0 among parents at sites who offered direct service childcare. All 6 OLS models included site fixed effects, the full set of baseline demographics as covariates, and binary missingness indicators.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Appendix

Appendix A: Comparisons of Baseline Characteristics Across Samples

Table A

Differences in Baseline Characteristics Across Samples

	Analytic sample means			Standardized differences		
	Full sample	Full parent sample	Follow-up parent sample	Full v. full parent samples	Full v. follow-up parent samples	Full parent v. follow-up parent samples
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.92	0.96	0.95	−0.16***	−0.16***	0.01
Race/ethnicity						
Black	0.52	0.54	0.55	−0.03***	−0.06***	−0.03*
White	0.37	0.36	0.36	0.02	0.02	0.01
Asian	0.03	0.02	0.02	0.03***	0.05***	0.03*
Native Hawaiian/Pacific Islander	0.02	0.02	0.03	−0.01	0.04***	−0.06***
American Indian/Alaskan Native	0.03	0.03	0.03	−0.01	0.04*	0.03*
Hispanic	0.23	0.24	0.24	−0.02**	−0.01	0.01
Education						
High school/GED or less	0.49	0.51	0.47	−0.04***	0.03*	0.07***
Some college	0.36	0.37	0.39	−0.01	−0.06***	−0.05***
Associate's or higher	0.15	0.12	0.13	0.07***	0.04**	−0.03*
Employment						
Currently employed	0.44	0.44	0.47	−0.01	−0.06***	−0.05***
Ever worked in healthcare	0.47	0.50	0.52	−0.05***	−0.10***	−0.05***
Income						
Income *M (SD)*	14,732 (12,930)	15,352 (13,200)	15,510 (12,918)	−0.05***	−0.06***	−0.01
At/below 50% of FPL	0.49	0.49	0.48	−0.01	0.01	0.02
At/below 100% of FPL	0.70	0.75	0.74	−0.11***	−0.10***	0.01
Social assistance						

Social assist sum (0–9) *M (SD)*	2.63 (1.88)	3.28 (1.76)	3.35 (1.82)	−0.35***	−0.39***	−0.04**
WIC	0.21	0.30	0.31	−0.21***	−0.24***	−0.03*
FRPL	0.40	0.59	0.59	−0.38***	−0.39***	−0.02
SNAP	0.59	0.69	0.69	−0.21***	−0.21***	0.00
TANF	0.20	0.24	0.25	−0.11***	−0.13***	−0.02
Medicaid	0.69	0.79	0.79	−0.24***	−0.23***	0.01
Subsidized childcare	0.11	0.16	0.17	−0.15***	−0.18***	−0.02
Section 8/public housing	0.19	0.22	0.24	−0.09***	−0.12***	−0.04**
LIHEAP	0.13	0.16	0.18	−0.09***	−0.13***	−0.04**
SSI	0.07	0.07	0.08	−0.02**	−0.04*	−0.01
SSDI	0.08	0.07	0.07	0.03***	0.02	−0.01
Training						
Currently in school/training	0.21	0.20	0.21	0.03***	0.00	−0.03*
WIA/WIOA eligible	0.51	0.52	0.48	−0.01	0.06***	0.08***
Prior training sum *M (SD)*	0.96 (1.13)	0.99 (1.14)	1.06 (1.15)	−0.03***	−0.09***	−0.06***
Occupational training	0.34	0.35	0.38	−0.09*	−0.09***	−0.08***
Occupational cert/dipl	0.30	0.31	0.32	−0.03***	−0.06***	−0.03
Prof, state, industry cert/license	0.33	0.34	0.35	−0.06***	−0.06***	−0.03*
Household characteristics						
Household number *M (SD)*	3.09 (1.67)	3.68 (1.51)	3.67 (1.51)	−0.37***	−0.37***	0.01
Pregnant or expecting	0.04	0.04	0.05	0.01	−0.03**	−0.02
Partner status	0.20	0.21	0.23	−0.04***	−0.09***	−0.05***
Number of children *M (SD)*	1.38 (1.33)	2.04 (1.13)	2.03 (1.14)	−0.53***	−0.53***	0.00
Parent has disability	0.09	0.07	0.07	0.10***	0.08	−0.02
Child has special needs	0.06	0.09	0.09	−0.10***	−0.11	−0.01
n	52,075	33,945	6,365			

Note. The full sample includes the original HPOG 2.0 sample in the PAGES dataset. The full parent sample includes participants with data in PAGES who had a child at baseline. The follow-up parent sample includes parents in the full parent analytic sample who completed the 15-month follow-up survey. Cell entries under analytic sample are mean values at baseline by sample. Standardized mean differences with p-value stars indicate significant differences in baseline characteristics between each analytic sample. All variables are coded as yes (1) and no (0) unless otherwise noted.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Appendix B: Tests for Control Group Comparability

Table B1
Control Group Unadjusted and Regression-Adjusted Models: Certification and Childcare Model

	Direct vs. partner		Direct vs. referral		Direct v. more than one	
	(1)	(2)	(3)	(4)	(5)	(6)
	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model
Education *β (SE)*	−0.03 (0.03)	−0.02 (0.04)	−0.11 (0.04)**	−0.06 (0.06)	−0.06 (0.03)*	−0.05 (0.03)
Demographics *β (SE)*						
Female	–	0.14 (0.12)	–	0.15 (0.15)	–	−0.02 (0.08)
Race/ethnicity						
Black	–	0.20 (0.18)	–	0.17 (0.20)	–	−0.04 (0.13)
White	–	0.04 (0.07)	–	0.10 (0.08)	–	−0.06 (0.05)
Asian	–	0.14 (0.16)	–	0.12 (0.19)	–	0.10 (0.09)
Native Hawaiian	–	0.03 (0.18)	–	0.03 (0.20)	–	0.12 (0.08)
American Indian/Alaskan Native	–	−0.20 (0.12)	–	−0.05 (0.15)	–	−0.05 (0.09)
Hispanic	–	−0.08 (0.10)	–	0.06 (0.11)	–	−0.09 (0.06)
Education						
High school/GED or less	–	−0.43 (0.37)	–	−0.92 (0.70)	–	−0.37 (0.38)
Some college	–	−0.43 (0.37)	–	−0.84 (0.70)	–	−0.33 (0.38)
Associate's degree or higher	–	−0.51 (0.37)	–	−0.97 (0.70)	–	−0.38 (0.38)
Employment						
Employed at baseline	–	−0.05 (0.04)	–	−0.04 (0.05)	–	−0.03 (0.03)
Ever worked in healthcare	–	0.09 (0.04)*	–	0.01 (0.05)	–	−0.06 (0.03)

Income						
At/below 50% of FPL	–	0.01 (0.04)	–	0.06 (0.05)	–	−0.01 (0.04)
At/below 100% of FPL	–	−0.12 (0.05)*	–	−0.07 (0.06)	–	−0.07 (0.05)
Social assistance sum (0–9) *M (SD)*		−0.01 (0.01)	–	0.01 (0.01)	–	−0.01 (0.01)
Training						
Currently in school/training	–	0.20 (0.33)	–	−0.11 (0.29)	–	0.19 (0.20)
WIA/WIOA eligible	–	0.23 (0.05)***	–	0.12 (0.08)	–	0.03 (0.04)
Training history sum (0–3) *M (SD)*	–	−0.01 (0.02)	–	0.01 (0.02)	–	0.00 (0.01)
Household characteristics						
Pregnant/expecting	–	−0.12 (0.07)	–	−0.08 (0.09)	–	−0.10 (0.06)
Partnered	–	0.05 (0.06)	–	−0.02 (0.07)	–	0.08 (0.04)*
Number of children *M (SD)*	–	0.01 (0.02)	–	−0.03 (0.02)	–	−0.01 (0.01)
Has a disability	–	0.12 (0.08)	–	0.04 (0.10)	–	−0.05 (0.07)
Child has special needs	–	−0.06 (0.06)	–	−0.01 (0.09)	–	−0.01 (0.05)
Interactions						
Black X female	–	−0.27 (0.17)	–	−0.22 (0.20)	–	0.03 (0.13)
Black X some college credit	–	0.04 (0.12)	–	0.10 (0.14)	–	−0.01 (0.05)
Hispanic X at/below 100% of FPL	–	0.14 (0.11)		0.00 (0.12)		0.08 (0.07)
Employed at baseline X partnered	–	−0.09 (0.08)		0.03 (0.11)		−0.10 (0.06)
R^2	0.00	0.10	0.01	0.08	0.00	0.05
F test	0.39	0.00	0.01	0.23	0.04	0.01
n	841	841	601	601	1,461	1,461

Note. Each column shows the treatment impact of the offer of direct childcare compared to the remaining three childcare models on education progress after 15 months for the control group. Within each comparison, the two adjacent columns include the unadjusted and adjusted (using set of baseline covariates) regression models. These two columns show how the significance of the treatment impact of direct childcare disappears with the addition of covariate adjustments.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table B2

Control Group Unadjusted and Regression-Adjusted Models: Employment in Healthcare and Childcare Model

	Direct vs. partner		Direct vs. referral		Direct v. more than one	
	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model	Unadjusted model	Adjusted model
Employment in healthcare *β (SE)*	−0.061 (0.034)	−0.05 (0.04)	−0.04 (0.04)	−0.03 (0.05)	−0.022 (0.028)	−0.06 (0.03)
Covariates *β (SE)*						
Female	–	0.14 (0.12)	–	0.01 (0.14)	–	0.16 (0.08) *
Race/ethnicity						
Black	–	0.09 (0.17)	–	−0.21 (0.20)	–	0.02 (0.13)
White	–	−0.07 (0.06)	–	−0.10 (0.08)	–	−0.13 (0.04)**
Asian	–	−0.04 (0.15)	–	−0.16 (0.19)	–	−0.11 (0.09)
Native Hawaiian	–	−0.01 (0.18)	–	−0.07 (0.19)	–	0.10 (0.08)
American Indian/Alaskan Native	–	−0.01 (0.12)	–	−0.01 (0.14)	–	0.02 (0.09)
Hispanic	–	−0.07 (0.56)	–	−0.01 (0.06)	–	−0.01 (0.03)
Education						
High school/GED or less	–	−0.27 (0.37)		0.06 (0.68)		−0.23 (0.37)
Some college credit	–	−0.29 (0.37)		0.05 (0.68)		−0.24 (0.38)
Associate's degree or higher	–	−0.25 (0.37)		0.07 (0.68)		−0.22 (0.37)
Employment						
Employed at baseline	–	0.16 (0.04)***	–	0.19 (0.04)***	–	
Ever worked in healthcare	–	0.23 (0.04)***	–	0.21 (0.05)***	–	
Income						
At/below 50% of FPL	–	−0.07 (0.04)	–	−0.04 (0.05)	–	−0.06 (0.03)
At/below 100% of FPL	–	−0.05 (0.05)	–	−0.05 (0.06)	–	0.02 (0.04)

Social assistance sum (0–9) *M (SD)*	–	−0.01 (0.01)	–	−0.00 (.012)	–	−0.02 (0.01)**
Training						
Currently in school/training	–	0.50 (0.33)	–	0.06 (0.28)	–	0.21 (0.20)
WIA/WIOA eligible	–	0.06 (0.05)	–	0.17 (0.08)*	–	0.01 (0.04)
Training history sum (0–3) *M (SD)*	–	0.02 (0.02)	–	0.04 (0.02)*	–	0.03 (0.01)*
Household characteristics						
Pregnant/expecting	–	−0.11 (0.07)	–	−0.08 (0.09)	–	−0.05 (0.06)
Partnered	–	0.03 (0.01)	–	0.01 (0.02)	–	0.01 (0.01)
Number of children *M (SD)*	–	−0.04 (0.04)	–	0.03 (0.05)	–	−0.01 (0.03)
Has a disability	–	−0.11 (0.08)	–	0.05 (0.10)	–	−0.06 (0.07)
Child has special needs	–	−0.06 (0.06)	–	−0.20 (0.08)	–	−0.03 (0.05)
Interactions						
Black X female	–	−0.18 (0.17)	–	0.16 (0.19)	–	−0.03 (0.12)
Black X some college credit	–	−0.04 (0.07)	–	−0.01 (0.08)	–	−0.03 (0.05)
Hispanic X at/below 100% of FPL		−0.00 (0.12)		−0.07 (0.12)		0.04 (0.07)
Employed at baseline X partnered		−0.03 (0.08)		0.01 (0.10)		0.01 (0.06)
R^2	0.00	0.19	0.00	0.20	0.00	0.11
F-test	0.07	0.00	0.43	0.00	0.45	0.00
n	841	841	601	601	1,460	1,460

Note. Each column shows the treatment impact of the offer of direct childcare compared to the remaining three childcare models on employment in healthcare after 15 months for the control group. Within each comparison, the two adjacent columns include the unadjusted and adjusted (using set of baseline covariates) regression models. These two columns show how the significance of the treatment impact of direct childcare disappears with the addition of covariate adjustments.
*$p < 0.05$, **$p < 0.01$,***$p < 0.001$.

Appendix C: Grantee-level Post Hoc Analysis

Table C

Mean differences in grantee-level characteristics across grantees with direct and non-direct childcare

Grantee-level characteristics	Childcare Model		Standardized Difference
	Direct	Non-Direct	
Grantee size *M (SD)*	212.62 (71.83)	304.39 (119.45)	-0.93***
Grantee Type: CBO *(yes/no)*	0.33	0.22	0.25***
Grantee Type: Educational institution *(yes/no)*	0.31	0.43	0.26***
Grantee Type: Workforce agency *(yes/no)*	0.18	0.19	-0.03
Grantee Type: State government *(yes/no)*	0.18	0.16	0.07*
Percent WIC at baseline *M (SD)*	0.36 (0.01)	0.30 (0.01)	1.00***
Urbanicity *(yes/no*)	1.00	0.89	0.51***
n	1299	5066	6365

Note. Grantee-level characteristics were drawn from the HPOG 2.0 PAGES parent survey. Grantee size reflects the number of individuals enrolled at each site. The percentage of participants receiving WIC at baseline serves as a proxy for the share of families with young children at each site. Four separate binary indicators were created for each grantee type. Urbanicity was determined by matching each grantee's county-level information to the U.S. Department of Agriculture's Rural–Urban Continuum Codes (1–9), which were then recoded into a binary measure where 1 = *metro* (codes 1–3) and 0 = *non-metro* (codes 4–9). Standardized differences with p-value stars indicate significant differences in characteristics between grantees with direct and non-direct childcare provision.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$