Compensation, Turnover, and Quality in Virginia Child Care Centers

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Early care and education (ECE) experiences can have positive lasting impacts on children's learning and development.[1] However, there is growing concern that the low wages and high turnover rates common in child care settings compromise quality, and in turn, limit the benefits of ECE.[2] Due to data limitations, we have not previously had good evidence of the extent to which wages and turnover relate to quality in child care settings.[3]

In this brief, we ask:

1. Do centers that pay their teachers more display higher levels of quality?
2. To what extent do child care centers with higher turnover have lower quality ratings?

SUMMARY

- This brief examines whether teacher pay and turnover are associated with quality ratings at 1,130 publicly funded child care centers.
- Centers with higher hourly wages had higher average quality scores; those paying more than $19.50 scored 38.8 points higher (77% of a standard deviation) than centers paying $14.00 or less.
- Centers with high turnover rates had considerably lower quality scores, with scores 27.3 points lower (54% of a standard deviation) than centers with low turnover.

Data and Sample

We use data collected through Virginia's unique ECE data system, LinkB5, from fall 2023, spring 2024, and fall 2024.[4] LinkB5 contains longitudinal data on the universe of publicly funded ECE programs.[5] We focus on 1,130 publicly funded child care centers with information on teacher wages, turnover, and quality in LinkB5.[6] We only consider information from lead teachers (N=9,777) to create three site-level variables.

Quality scores are based on the classroom observations conducted during fall 2023 and spring 2024 using the Infant, Toddler, and Pre-K Classroom Assessment Scoring System (CLASS).[7] In Virginia, each full-time classroom[8] at a publicly funded site receives two CLASS observations

annually, one in fall and one in spring, as part of the state's ECE quality rating and improvement initiative. The Virginia Department of Education combines these scores to calculate sites' overall "interaction points" for the year.[9] Interaction points can range from 100 to 700, with higher scores corresponding to higher CLASS scores and levels of interaction quality. We divide sites into quintiles (i.e., five equal parts) based on their interaction points. The first quintile includes the lowest 20% of quality scores (below 454), and the top quintile contains the highest 20% of quality scores (above 534).

Hourly wage corresponds to the average of lead teachers' hourly wages reported by site leaders. In fall 2023, site leaders reported the average hourly compensation of lead teachers at their site by selecting a value on a slider ranging from $0 to $40 or more.[10]

Turnover rates reflect the percentage of lead teachers employed at a given site in fall 2023 who no longer worked at the site as of fall 2024. Sites are classified into three categories according to the percentage of teachers who left during the school year: low turnover (less than 20%), medium turnover (20–50%), and high turnover (greater than 50%).[11]

Table 1 provides descriptive statistics for all sites in our sample. Sites had an average quality score of 493.4 points. The range of scores varied considerably, with a standard deviation of 50.1 and values ranging from 306 to 641. Sites paid lead teachers an average of $16.86 per hour. Looking at wage ranges by quintile, we find centers in the lowest quintile paid $14.00 or less on average, while those in the highest quintile paid $19.50 or more. Lastly, sites lost, on average, 35.3% of their lead teachers from 2023 to 2024. About 27% of sites experienced low turnover (fewer than 20% of teachers left), 50.7% experienced medium turnover (20–50% left), and the remaining 22.3% had high turnover (more than 50% of teachers left).

Table 1. Descriptive statistics

Variable	Mean/percent	SD	Min	Max
Interaction Points	493.4	50.1	306.0	641.0
Average lead teacher wage at site	16.86	4.04	12.00	40.00
Less than or equal to $14.00	27.4%			
> $14.00 & <= $15.50	18.3%			
> $15.50 & <= $17.00	19.6%			
> $17.00 & <= $19.50	14.3%			
More than $19.50	20.3%			
Turnover rate	35.3%	25.6%	0.0%	100.0%
Low (<20%)	27.0%			
Medium (>=20 & <= 50%)	50.7%			
High (>50%)	22.3%			

Note: *N* = 1,130 sites.

Findings

Quality scores are higher in sites with higher pay

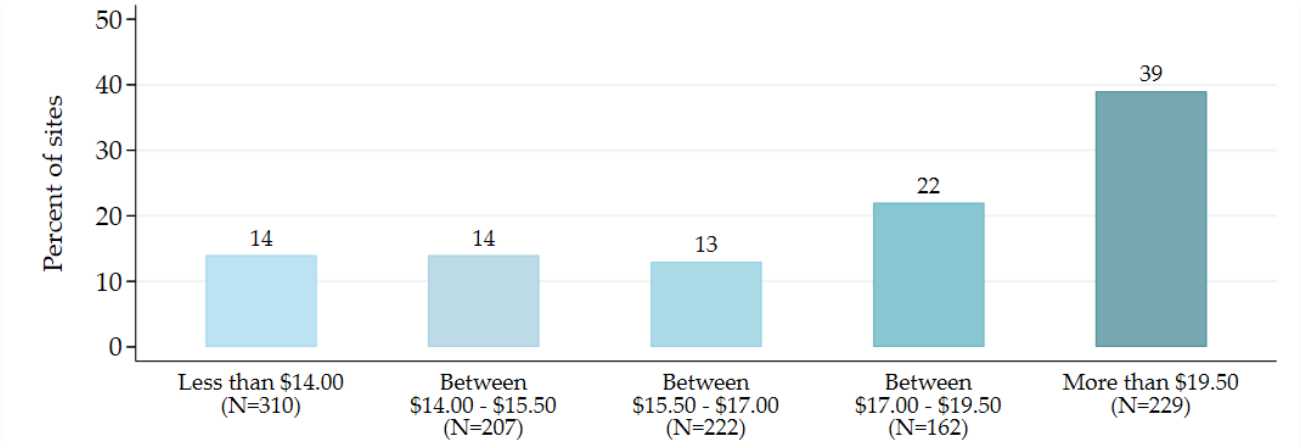
Sites with higher hourly wages had higher average quality scores (Table 2). Comparing the highest and lowest quintiles: sites paying wages above $19.50 had quality scores that were 38.8 points higher than those paying $14.00 or less. This corresponds to 77% of a standard deviation. Figure 1 shows the percentile of sites who were in the top quintile for quality. Sites with the lowest average wages were far less likely to be in the top quintile of quality scores: 39% of sites paying more than $19.50 per hour were in the top quintile of quality compared to only 14% of sites paying $14.00 or less.

Table 2. Average interaction points by wage and turnover

Variable	N	Mean
Wage		
Less than or equal to $14	310	478.1
> $14 & <= $15.5	207	486.8
> $15.5 & <= $17	222	491.6
> $17 & <= $19.5	162	500.4
More than $19.5	229	517.0
Turnover		
Low (<20%)	305	506.6
Medium (>=20 & <= 50%)	573	492.7
High (>50%)	252	479.3

Note: N = 1,130 sites.

Figure 1. Share of sites that are in the top quintile of quality scores, by site average wage

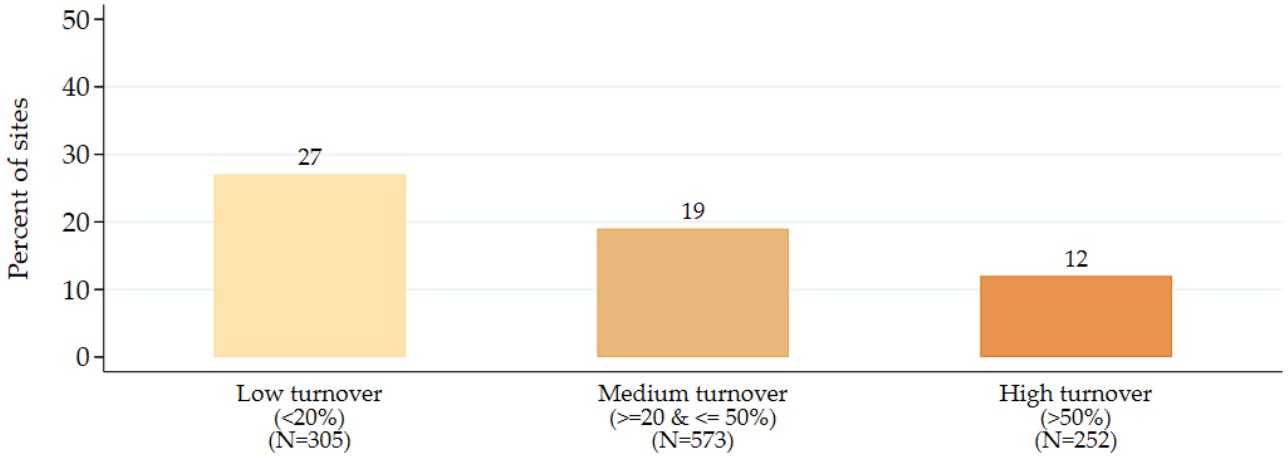


Note: Based on information from 1,130 sites. The quality scores among sites that are in the top quintile range from 534 to 641.

Quality scores are considerably lower in sites with high turnover

Sites with high turnover rates had lower quality scores than those with medium or low turnover. On average, their scores were 479.3—13.7 and 27.3 points lower than sites with medium and low turnover, respectively (Table 2). These differences correspond to 28% and 54% of a standard deviation. Similarly, high-turnover centers were less likely to be in the top quintile of quality scores: only 12% reached the top 20%, compared with 19% of medium-turnover centers and 27% of low-turnover centers (Figure 2).

Figure 2. Share of sites that are in the top quintile of quality scores, by site turnover



Note: Based on information from 1,130 sites. The quality scores among sites that are in the top quintile range from 534 to 641.

Policy Implications

There is a clear relationship between teacher wages, turnover, and quality. Sites that paid their teachers less tended to have lower levels of quality. Similarly, sites with more teacher instability also had lower quality ratings. This suggests that improved pay and improved stability may be useful strategies for improving quality. Of course, the results do not confirm that low pay or high turnover *cause* the low quality, though this is a plausible explanation. Low pay may impact the candidates who apply for jobs; it may also lead to stress for teachers, which in turn impacts the children they serve. Sites with high turnover may moreover lack experienced or well-trained teachers.

These results suggest that investments in quality improvement that do not simultaneously serve to stabilize the workforce may yield limited results. For instance, investments in teacher professional development may yield limited returns if a substantial proportion of the workforce receiving those supports leave their program.

ENDNOTES

[1] Araujo, M. C., Carneiro, P., Cruz-Aguayo, Y., & Schady, N. (2016). Teacher Quality and Learning Outcomes in Kindergarten*. *The Quarterly Journal of Economics*, *131*(3), 1415–1453. https://doi.org/10.1093/qje/qjw016; Burchinal, M. (2018). Measuring Early Care and Education Quality. *Child Development Perspectives*, *12*(1), 3–9. https://doi.org/10.1111/cdep.12260; Hamre, B., Hatfield, B., Pianta, R. C., & Jamil, F. (2013). *Evidence for General and Domain-Specific Elements of Teacher–Child Interactions: Associations With Preschool Children's Development*. *85*(3), 1257–1274. https://doi.org/10.1111/cdev.12184

[2] Bassok, D., Markowitz, A. J., Bellows, L., & Sadowski, K. (2021). New Evidence on Teacher Turnover in Early Childhood. *Educational Evaluation and Policy Analysis*, *43*(1), 172–180. https://doi.org/10.3102/0162373720985340; Markowitz, A. J. (2024). Within-Year Teacher Turnover in Head Start and Children's School Readiness. *AERA Open*, *10*, 23328584241245094. https://doi.org/10.1177/23328584241245094; McLean, C., Austin, L. J. E., Powell, A., Jaggi, S., Kim, Y., Knight, J., Muñoz, S., & Schlieber, M. (2024). *Early Childhood Workforce Index – 2024*. Center for the Study of Child Care Employment, University of California. https://cscce.berkeley.edu/workforce-index-2024/

[3] Whitebook, M., McLean, C., & Austin, L. J. E. (2018). *The Workforce Data Deficit*. Institute for Research on Labor and Employment, UC Berkeley. https://escholarship.org/content/qt1tj0w0gh/qt1tj0w0gh_noSplash_5b63ae3af6e401e112901c0b81de4191.pdf

[4] Sites that were licensed or registered through the Virginia Department of Education and served children of a minimum age of less than 2 months or more than 4 years were not required to participate. In fall 2023, these criteria excluded 143 sites.

[5] Publicly funded centers are defined as those receiving financial support from at least one of the following sources: the Virginia Child Care Subsidy Program, Child Care Access Means Parents in School, Mixed Delivery grants, Department of Defense Military Child Care Fee Assistance, local government child care assistance, Head Start, Early Head Start, the Virginia Preschool Initiative, Early Childhood Special Education or IDEA Part B, or Title I.

[6] These centers represent about 86% of non-Head Start centers. For this analysis, we excluded Head Start and Early Head Start centers as they face different regulations related to teacher credentials, teacher pay scale, curriculum, and assessments.

[7] CLASS is a well-validated and widely used observational instrument that measures the quality of teacher-child interactions in the classroom. It is administered by age group—Infant (birth–15 months), Toddler (16–35 months), and Pre-K (3–5 years)—and evaluates multiple dimensions. Observations are typically conducted in four 30-minute cycles, consisting of 20 minutes of observation and 10 minutes of coding, during which interactions are rated on a 1–7 scale. For more information, see: Pianta, R. C., La Paro, K. M., & Hamre, B. (2008). *Classroom Assessment Scoring System™: Manual K-3*. Brookes Publishing Co.

[8] Full-time refers to a classroom that runs at least four days per week, for a minimum of 128 days per year, with daily sessions lasting at least three hours.

[9] Each classroom receives total CLASS scores in the fall and spring for the appropriate age level, calculated as the average across all dimensions for that tool. Site-level interaction scores are then computed as the simple average of these classroom-level, age-specific CLASS scores (which themselves are averages of the fall and spring scores), multiplied by 100. In other words, the site-level score represents the average of averages, first across time (fall and spring) within classrooms, and then across classrooms within a site—with the final value multiplied by 100. For more details, please review this document.

[10] Seventeen sites with average hourly wages below $12 (the minimum wage in Virginia in 2023) were treated as missing.

[11] The literature does not provide specific guidance on how to operationalize categories of teacher turnover. We therefore follow Doromal et al. (2022) to define high turnover, while the low and medium categories are determined by the distribution in our sample. For more information, see: Doromal, J. B., Bassok, D., Bellows, L., & Markowitz, A. J. (2022). Hard-to-staff centers: Exploring center-level variation in the persistence of child care teacher turnover. *Early Childhood Research Quarterly*, *61*, 170–178. https://doi.org/10.1016/j.ecresq.2022.07.007.