



Hard-to-Staff Centers: Exploring Center-Level Variation in the Persistence of Child Care Teacher Turnover

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High rates of teacher turnover in child care settings have negative implications for young children's learning experiences and for efforts to improve child care quality. Prior research has explored the prevalence and predictors of turnover at the individual teacher level, but less is known about turnover at the center level – specifically, how turnover varies across child care centers or whether staffing challenges persist year after year for some centers. This study tracks annual turnover rates for all publicly funded child care centers that were continuously operating in Louisiana from the 2015-16 to 2018-19 school years (n=575 centers). We document high and variable turnover rates across centers throughout the state: The annual mean turnover rate was 40%, and each year nearly one-third of centers experienced high turnover, that is, lost more than half of their teachers. About 27% of centers experienced high turnover for multiple years in our panel, while 44% of centers did not experience high turnover in any year. Our findings underscore concerns that sustained staffing challenges may hinder efforts to provide high-quality child care.

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Abstract

High rates of teacher turnover in child care settings have negative implications for young children's learning experiences and for efforts to improve child care quality. Prior research has explored the prevalence and predictors of turnover at the individual teacher level, but less is known about turnover at the center level – specifically, how turnover varies across child care centers or whether staffing challenges persist year after year for some centers. This study tracks annual turnover rates for all publicly funded child care centers that were continuously operating in Louisiana from the 2015-16 to 2018-19 school years (n=575 centers). We document high and variable turnover rates across centers throughout the state: The annual mean turnover rate was 40%, and each year nearly one-third of centers experienced high turnover, that is, lost more than half of their teachers. About 27% of centers experienced high turnover for multiple years in our panel, while 44% of centers did not experience high turnover in any year. Our findings underscore concerns that sustained staffing challenges may hinder efforts to provide high-quality child care.

Keywords: child care, early care and education, teacher turnover, teacher retention

Introduction

Early childhood education (ECE) programs have the potential to improve children's school readiness and long-term developmental outcomes, primarily through the consistent and responsive interactions children have with teachers in these settings (Institute of Medicine & National Research Council, 2015). ECE programs also offer families with a critical work support that allows them to pursue employment and educational opportunities. Much of publicly-funded ECE opportunities in the United States occur in center-based settings, and for the majority of young children in center-based care—especially infants, toddlers, and children of families depending on subsidized care—these ECE experiences occur in independently managed child care centers, many of which operate as small businesses (NSECE Research Team, 2014).

Unfortunately, child care centers often struggle with teacher turnover (Whitebook et al., 2014), which in this study is defined as teachers' departure from the center. For instance, in Louisiana, the context for the current study, slightly under half of child care teachers left their center from one year to the next (Bassok et al., 2021).

High turnover among the child care teaching workforce poses a number of challenges for the ECE field, both because turnover disrupts the stable relationships needed to foster children's development (Bratsch-Hines et al., 2020; Howes et al., 1998), and because policymakers' investments in ECE quality are compromised when the teachers leave at high rates (Institute of Medicine & National Research Council, 2015). High turnover may also pose a number of organizational challenges: leaders at centers with high levels of turnover may have to focus more of their attention on recruiting new staff, rather than improving quality, and remaining teachers may have to pick up additional duties when colleagues leave, or adjust to a continually rotating group of colleagues (Doromal et al., 2022; Whitebook & Sakai, 2004).

Despite concerns about high rates of turnover compromising centers' ability to provide high quality care, the existing research on teacher turnover, both in child care and across the broader ECE landscape, has focused on measuring teacher- rather than center-level turnover rates (Bassok et al., 2021; Grant et al., 2019; Manlove & Guzell, 1997; Schaack et al., 2020; Wells, 2015). In other words, studies document how common it is on average for early educators to leave their jobs, but with very few exceptions (Caven et al., 2021), there has been little research on center-level variability in turnover.

Existing studies do theorize that the availability of work resources or supports (e.g., social supports like work climate and leader support, financial supports like compensation and benefits) can buffer the demands of teaching and thereby mitigate teacher burnout and intentions to leave (Demerouti et al., 2001; Schaack et al., 2020). This likely explains why teacher turnover rates in child care centers far exceed those in other types of ECE programs like Head Start or school-based pre-kindergarten (pre-k) (Bellows et al., 2021; Phillips et al., 2019) as well as K-12 schools (Redding & Henry, 2019), where teachers receive much higher levels of compensation and professional supports.

In child care, compensation and other supports are likely to be salient for teachers' retention (Manlove & Guzell, 1997; McDonald et al., 2018; Schaack et al., 2020) and are determined at the center level. For these reasons, teacher turnover is likely to vary across child care centers. To date however, there has been little research exploring whether turnover challenges are similar across child care centers or if some centers retain teachers at high rates while others struggle. Similarly, no studies examine whether there are centers that experience high turnover year after year. Understanding the nature of center-level turnover is important for targeting policy interventions. If centers vary little in how much teacher turnover they

experience, then policy interventions need to address the structural issues that impact all centers. If, on the other hand, centers vary in how frequently they experience high turnover rates, then there may be both center-level determinants of turnover worthy of further study and some centers that would benefit from targeted supports.

This study provides the first statewide look at center-level teacher turnover in child care. We use administrative data on all publicly funded child care centers in Louisiana continuously operating over a four-year period to describe the variation in teacher turnover across centers. We both document how centers' turnover rates vary within each academic year and describe the extent to which some centers experience high turnover across multiple years. Finally, to put our findings into perspective, we also compare the prevalence of high and persistently high turnover rates in child care centers to their prevalence in other ECE sectors (Head Start and school-based pre-k), sectors where work resources and supports (e.g., pay, benefits, training) are significantly higher.

An Organizational Perspective on Teacher Turnover in Child Care

Research has highlighted the numerous challenges teacher turnover creates for the ECE field. For instance, disruptions resulting from sudden or frequent teacher departures have been linked to negative social and behavioral outcomes for children (Markowitz, 2019; Tran & Winsler, 2011). In addition to its direct impact on children, teacher turnover creates challenges for policymakers and practitioners working to strengthen the ECE workforce over time (IOM & NRC, 2015). Many quality improvement efforts involve investments in teachers' professional development through coaching or coursework (Early et al., 2017; Hamre et al., 2017). When teachers leave at high rates, returns on these quality improvement investments are compromised.

While the bulk of prior research has focused on teacher-level turnover, far less has

considered how turnover manifests across centers. Findings from the organizational management literature (e.g., Dess & Shaw, 2001; Park & Shaw, 2013) support the notion that child care centers facing struggles retaining their teachers are also likely to struggle with other aspects of their functioning, including the quality of care they provide to families. One meta-analysis exploring turnover across a range of industries and geographies confirmed a negative relationship between organizations' employee turnover rate and organizational performance outcomes (Park & Shaw, 2013). The authors further found that this relationship was strongest in human services organizations and small businesses, both of which characterize center-based child care (NSECE Research Team, 2014).

The small but growing body of research suggests that high levels of teacher turnover at the center level could impede centers' ability to provide high-quality services to children and families. Qualitative research has documented the negative impacts of turnover for parents, teachers, and child care center directors (Cassidy et al., 2011; Whitebook & Sakai, 2004). Parents reported they were concerned that frequent turnover meant that no one at their center knew their child or their developmental progress; teachers reported feeling overwhelmed when other teachers left the center; and directors described frequent teacher departures straining their ability to maintain and support a highly qualified teaching staff and improve the center's quality (Cassidy et al., 2011). These findings also echo a more robust literature from K-12 schools, which has found that teacher turnover places burdens on the schools from which teachers depart, particularly when schools face high levels of teacher instability year after year (Grissom et al., 2016; Holme et al., 2017; Sorensen & Ladd, 2020). The organizational effects of turnover may accrue regardless of whether turnover occurs within or between years.

Despite this compelling evidence, surprisingly little information is available about center-

level turnover in child care. Even basic information about *whether* and *to what extent* turnover varies across centers is lacking. Child care teacher turnover is often described as a systemic issue requiring transformative system-level solutions. It is widely recognized that teacher turnover is much lower in other ECE sectors like Head Start and school-based pre-k programs (Totenhagen et al., 2016), and increasingly there have been calls to improve the funding for the child care sector. While addressing cross-sector differences is important, there may also be important variation in turnover rates *within* the child care sector. Little is known about just how much of the sector experiences particularly high levels of teacher turnover. Studying child care teacher turnover at the center level could clarify both the variability in centers' experiences with teacher turnover within the child care sector and the extent to which turnover challenges are rooted in the systemic issues faced by this sector.

Of course, as is true in many other industries, teachers leave their job for a host of reasons (Manlove & Guzell, 1997; Sandstrom et al., 2022), some of which may be related to their job or the profession (e.g., fit with the profession broadly, issues with their specific employer), and some of which may be personal. In fact, some teacher turnover is to be expected, and may even be desired depending on the nature of the departure (Dess & Shaw, 2001; Park & Shaw, 2013). Nonetheless, too much turnover could negatively impact centers' functioning and, as a result, the care and education children receive. A center-level perspective on turnover, and in particular understanding whether centers experience high levels of turnover, is critical, both because of its influence on center-level outcomes and because many of the teacher and child-level consequences of turnover may be more acute in environments with higher teacher turnover.

A Longitudinal Perspective on Child Care Centers' Turnover Rates

With very few exceptions, prior research has estimated teachers' intended or actual

turnover using cross-sectional data, meaning turnover is typically measured over a short time period (e.g., after just one year). One challenge this poses is that it is difficult to say whether a center that experiences high turnover within one year indeed faces challenges supporting and keeping teachers, or is instead experiencing a blip resulting from many teachers leaving their center during the same year for unrelated reasons. Longitudinal data would allow researchers to assess whether the high turnover observed in one year is anomalous or part of a pattern signaling persistent problems. Similarly, a longitudinal analysis could show whether there are centers that rarely experience high levels of turnover.

The few studies that have looked at teacher turnover patterns longitudinally (e.g., Bellows et al., 2021; Whitebook & Sakai, 2003) have established the importance of having additional years of data to better understand workforce instability. For example, Bellows et al. (2021) found that while 32% of ECE teachers left their center after just one year, by three years nearly twice that amount (61%) had left. They also found that teacher attrition over time was far more pronounced in child care, relative to teachers in other ECE sectors who stayed at their jobs longer.

Existing longitudinal studies have not examined how *centers* vary in turnover rates from one year to the next, either in child care or across the broader ECE landscape. This study aims to fill this gap by following a statewide sample of centers over time and tracking the stability of centers' teaching workforce. We compare the incidence of persistent turnover issues in child care to that of other ECE sectors, including Head Start and school-based pre-k. As noted above, teacher turnover is more likely to occur in child care relative to other sectors, and oftentimes these patterns are ascribed to differential resources and supports as well as structural inequities across sectors (Whitebook et al., 2014). If persistently high turnover is more common in child

care than in Head Start or school-based pre-k, it would support this hypothesis. This study explores this possibility.

Data Scarcity as a Barrier to Understanding Variability in Centers' Turnover Rates

The limited evidence on center-level teacher turnover, either cross-sectionally or longitudinally, is due in part to the scarcity of ECE workforce data (Whitebook, McLean, & Austin, 2018). While the rise in K-12 education state data systems over the last several decades has given researchers the ability to track teachers' entries, exits, and transfers throughout the K-12 public school system, no analogous system exists in ECE. The deeper understanding of K-12 teacher turnover, facilitated by these data, has clarified the ways teacher turnover is distributed across schools (Holme et al., 2017; Redding & Henry, 2019; Sorensen & Ladd, 2020). For example, Holme et al. (2017) use a ten-year panel of administrative data on Texas public schools to explore whether some schools experience persistently high turnover. They define high turnover as schools with a turnover rate of at least 30% and find that 60% of schools had high turnover for at least one year in the panel. Only 4% of schools *persistently* had this level of turnover, which they define as having high turnover for at least seven years (i.e., about two-thirds of the years in the panel).

The absence of comparable datasets in ECE to date has prevented this type of exploration in child care specifically, as well as comparison of such turnover across sectors. Some researchers have circumvented these issues by using national census data, which can capture teachers' exits out of the child care sector altogether (e.g., Bassok et al., 2013; Brown & Herbst, 2021); but, because those data cannot link teacher departures to specific centers or sectors, they cannot answer core questions about center-level turnover. Other researchers have turned to collecting their own data through workforce surveys (e.g., Manlove & Guzell, 1997; Schaack et

al., 2020). However, these studies typically sample too few teachers within a center to estimate center-level turnover rates, and are limited to a single ECE sector. A small set of studies have tracked teachers over time (e.g., Whitebook & Sakai, 2003). However, these studies are dated, as the ECE landscape has changed substantially over the last several decades, and they use relatively small samples that may not be representative.

Perhaps the best estimates of center-level turnover rates come from studies using the National Study of Early Care and Education (NSECE), which provides a nationally representative snapshot of ECE providers (Caven et al., 2021; Phillips et al., 2019). Caven et al. (2021) found using 2012 NSECE that most ECE directors reported turnover rates that were less than 20%. These estimates are not limited to child care centers: they include Head Start centers and school-based pre-k programs, where individual-level turnover is considerably lower than in child care centers (Bassok et al., 2021; Whitebook et al., 2014), and do not disaggregate by sector. Moreover, the NSECE relies on directors' retrospective recollection of turnover. These data may be difficult to interpret due to individual differences in how directors respond (e.g., interpretation of who counts as a lead teacher, recordkeeping practices that facilitate an accurate count of departures). Finally, another limitation of existing ECE workforce data, including the NSECE, is that it is cross-sectional, providing only a point-in-time snapshot of turnover rates.

In sum, data availability issues have made it challenging to document both the extent to which teacher turnover is systematically clustered at specific centers and the extent that high levels of turnover persist over time for some centers. It has not allowed for comparison across sectors. The present study aims to overcome these limitations using novel panel data on all lead teachers across all ECE sites, including child care, Head Start, and school-based pre-k, receiving public funds in one state.

Present Study

The main focus of this paper was to document center-level variability in teacher turnover in child care and the extent to which high turnover persists over time for some centers. We did so by using panel data tracking all lead teachers working in toddler (15- to 36-months old) and preschool-aged (3- to 5-years old) classrooms in all publicly funded child care centers continuously operating in Louisiana between the 2015-16 and 2018-19 academic years. We then compared these results to trends in other ECE sectors—namely, Head Start and school-based pre-k programs in Louisiana—to explore whether child care centers, where organizational supports are considerably lower, are especially prone to high and persistent levels of turnover.

Specifically, we asked the following research questions:

1. On average, what proportion of teachers at publicly funded child care centers left their center each year, and to what extent did this turnover rate vary across centers?
2. How do centers' turnover rates compare from one year to the next? That is, how common is it for centers to persistently experience high levels of turnover, and conversely, how common is it for centers to not experience high turnover at all?
3. How does the variability in turnover rates across child care centers and over time compare to the variation observed among Head Start centers and school-based pre-k programs in Louisiana?

We hypothesized that, consistent with data from teacher-level studies, centers would on average experience high levels of turnover; however, we also expected substantial variation in turnover rates across centers. We expected that some centers would exhibit high levels of turnover for multiple years, and that others might not have high turnover at all; however, we did not have prior expectations as to the number of centers that would meet each of these categories. Finally,

given that teachers earn higher incomes and receive more professional supports in Head Start and school-based pre-k as compared to child care, we expected that high turnover rates and the persistence of high turnover over time would be more salient in child care.

Method

We used data from Louisiana's Quality Rating and Improvement System (QRIS). Beginning in the 2015-16 academic year, all publicly funded ECE programs – including child care centers receiving public funds, Head Start, and school-based pre-k – were required to participate in Louisiana's statewide QRIS. Currently, about two-thirds of all licensed child care centers across the state participate in the QRIS.

As part of the QRIS, all classrooms at these centers are observed at least twice per year by a local observer who, as part of the observation, recorded the name of the lead teacher in the classroom. Only lead teachers were recorded (i.e., instructional aides and/or paraprofessionals were not recorded), and, for the years under study, only toddler and preschool-age classrooms were observed (i.e., data on infant classrooms are not available).

Although these data were collected to track observational measures of classroom quality, an unintended benefit is that they provide an opportunity to identify the lead teacher in every classroom in all publicly funded ECE programs in Louisiana. Linking these data over time allowed us to track which teachers remained at their center and which turned over. We were then able to aggregate the data on individual teachers' departures to the center level to measure the amount of turnover each program experienced annually. We limited the sample to those centers continuously operating between the 2015-16 and the 2018-19 academic years (i.e., we omit programs that were closed at any point in our panel). This allowed us to track teacher departures from each center over three years (i.e., the turnover from 2015-16 to 2016-17 through that from

2017-18 to 2018-19) and ensured each center had the same number of years for which we could estimate annual turnover rates.

Our main analyses, which focused on Louisiana's publicly funded child care centers, included 575 centers, representing 76% of centers observed in 2015-16. We included Head Start and school-based pre-k programs for our third research question with the same sample restrictions (i.e., they must be continuously operating for all years in the panel).

Our focus on continuously operating centers helped to ensure changes in center-level turnover rates reflected staffing fluctuations an operational center might be experiencing. This does mean, however, that we excluded the most unstable centers, that is, the centers destined to shut down. In Table A1 in the appendix, we compared the child care centers that were included and not included in the study. On average, excluded centers were smaller in size and were more likely to have high turnover than centers included in this study. We return to these generalizability points in the discussion.

Defining Center-Level Turnover Rates

To compute center turnover rates, we first took teachers observed in the academic year (e.g., 2015-16) and created an indicator variable equal to 1 if the teacher was not observed in a teaching role at the center the following academic year (e.g., in 2016-17), and 0 if the teacher stayed as a teacher at the same center (the matching of teachers over time is described in greater detail in Appendix B). This measure captured both the within-year turnover likely to matter most for children's development as well as end-of-year turnover. Next, we computed the average of this variable across all teachers at each center; this represents the proportion of a center's lead teachers lost in the first year of our panel (e.g., the turnover rate for 2015-16). We then calculated this same statistic for each of the remaining years (e.g., a center's turnover rate of

2016-17 is the percentage of teachers observed in 2016-17 who are no longer teaching by 2017-18, irrespective of whether teachers were also observed at that center in prior years). We used these continuous measures in assessing the variability of turnover across centers.

Identifying Centers with High and Persistently High Turnover

“High turnover” and “persistently high turnover” were defined using centers’ annual turnover rates. As noted previously, there is no theoretical or empirical guidance from the literature on how high turnover should be operationalized in ECE research. In the K-12 context, Holme et al. (2017) used 30% as a threshold for classifying schools with high turnover (with the average school in their data having roughly 20% turnover in any given year); however, these authors also note the absence of clear guidance for defining high turnover. Even in the broader organizational management literature, although studies have established a negative relationship between turnover levels and metrics of organization performance (Park & Shaw, 2013), specific thresholds at which turnover rates become “bad” for organizations have not been established.

In the present study, we defined a child care center as having high turnover if it lost more than half of its lead teachers in a year. We selected this threshold for ease in interpretation and because it represents an “above average” threshold relative to turnover rates observed in our data (similar to Holmes et al. (2017), who use an absolute threshold slightly above the mean turnover rates in their data). We examined the robustness of our findings to both less and more restrictive definitions (see Table A2 in the appendix).

We defined a center as having persistently high turnover if it exceeded our high turnover threshold (50%) for at least two years in our panel. This definition (i.e., centers having high turnover for two-thirds of the years under study) followed that used by Holme et al. (2017).

Analysis Plan

This paper had three aims: (1) document center-level variability in annual turnover rates; (2) document the longitudinal nature, or persistence, of centers' turnover rates; and (3) explore the extent to which these issues were unique to child care or instead similar to the experiences of other center-based ECE programs in the state (i.e., Head Start and school-based state pre-k).

To document center-level variability in annual turnover rates, we computed each center's turnover rate and summarized these rates for each year of the panel. We then explored variability in centers' turnover rates by reporting for each year (a) the proportion of centers that had no teacher turnover at all, and (b) the proportion of the sample losing more than half their teachers (i.e., high turnover).

Next, to understand the persistence of high turnover at centers over time, we began by documenting the pairwise correlations between centers' turnover rates from one year to the next. Correlations that were not statistically different from zero would indicate that centers' turnover rates were not consistent from one year to the next (e.g., low one year but high the next). Moderate to high correlations would suggest that some centers consistently struggle with high rates of turnover, or inversely, that some centers consistently experience relatively little turnover.

We also calculated the percentage of centers that had high turnover never, once, twice, or in all three years of the panel. A single year of high turnover may be anomalous, whereas multiple years of high turnover may reflect more persistent center-level challenges. Similarly, centers without high turnover in any year may be particularly successful in maintaining a stable teaching staff.

Of course, it is possible for centers to demonstrate high or persistently high turnover simply by chance or bad luck (e.g., many teachers leaving a center for personal reasons but coincidentally at the same time). This possibility is especially likely given systemic issues facing

the child care sector and the overall high levels of teacher turnover even within a single year (Bassok et al., 2021; Whitebook, McLean, Austin, et al., 2018).

To get at this concern, we conducted a set of simulations where we kept the state-level rates of annual turnover as they were, but randomly assigned this turnover to teachers across the sample within each year. For instance, if 40% of teachers across the state were observed to have turned over in a given year, in our simulation we randomly assigned 40% of teachers to turn over. Note that it was not necessarily the case that each center would have the same turnover rate, because teacher turnover was designed to be independent of centers. Some centers would have lower turnover rates, and others higher. However, the variability we observed in this simulation would not be due to some underlying challenge facing these centers: it was definitionally random which teachers left and which stayed. Thus, any clustering we observed in this scenario provided a sense of how much variability we might expect to observe if turnover problems were not concentrated at specific centers. We compared the proportions of centers with high and persistently high turnover averaged across 1,000 such simulations to the proportion of centers we observed in the data. This comparison offered a perspective on how much our results are explained by chance versus clustering of staffing challenges among a subset of centers.

Finally, to address the study's third goal, we examined the extent to which both high turnover and persistently high turnover patterns were issues particularly salient for child care centers. To do this, we compared rates of high turnover and persistently high turnover in child care centers to that in other ECE sectors in Louisiana during the same period (i.e., Head Start and school-based pre-k). Comparing the overall rates of high-turnover centers and the prevalence of persistently high turnover across child care centers to those observed in other sectors served as a useful benchmark for understanding the extent to which high turnover is a shared experience

across the ECE system versus a challenge uniquely experienced in the child care sector (e.g., due at least in part to structural differences that also manifest across sectors).

Results

In all years examined, about 45% of child care teachers were no longer at their center by the next year. Our results explored how this turnover was distributed across centers and over time.

Variation in Child Care Centers' Turnover Rates and the Prevalence of High Turnover

As shown in Table 1, on average, child care centers in our sample lost 39% to 42% of their teachers annually. Within each year, there was considerable variability in turnover rates. For instance, the average center lost 40% of its lead teachers from 2017-18 to 2018-19, but 22% of centers experienced no turnover, and 30% experienced high turnover (i.e., they lost more than half their teachers).

Prevalence of Persistently High Teacher Turnover in Child Care

Average turnover rates were relatively similar across the years included in our panel. This does not necessarily imply that the same centers persistently experienced high turnover over the years in our panel. The rightmost columns of Table 1 show pairwise correlations between centers' turnover rates for each year of the study period. They provide evidence that turnover rates were modestly, but not strongly, correlated from one year to the next (r ranges from .31 to .36).

Figure 1 shows the number of years centers experienced high turnover (i.e., greater than half of their teachers leaving). In our data 44% of the full sample did not experience high turnover in *any* of the years under study, meaning they never had greater than half of their teachers leave from one year to the next. This suggests the majority of centers (56%) experienced

high turnover for at least one of the three years. However, for many centers (29%), we observed high turnover only in a single year. The remaining 27% demonstrated persistently high levels (18% experienced high turnover in two of three years of our data and 9% experienced high turnover in all three years).

As noted above, given the high prevalence of turnover among child care teachers in Louisiana, some centers could show persistently high levels of turnover even if the likelihood of teacher turnover had nothing to do with the specific center where teachers were employed. Figure 2 explores this possibility, plotting the proportion of centers observed in our data by the number of years they experienced high turnover (dashed vertical lines) against results from 1,000 simulations under a scenario in which turnover was randomly assigned to teachers, irrespective of where they were employed.

Relative to our simulations, centers in our data were both more likely to have no years of high turnover *and* to have three years of high turnover. For instance, if turnover was randomly assigned to teachers across the state (such that teachers who turned over were effectively distributed randomly across centers), 3% of programs would have had three years of high turnover. The rate we observed is three times higher. Similarly, in the simulation, 33% of centers would have had no years of high teacher turnover, but in our data this rate was 44%. In other words, both persistently high turnover centers and centers without any high turnover appear more than we would expect if turnover patterns were not clustered in particular centers. The simulations provide compelling evidence that, at least in Louisiana, some centers struggled more than others whereas other centers have found ways to retain their teachers year after year.

High and Persistently High Turnover Patterns Relative to Head Start and Pre-K

Our third research question compares variation in turnover rates across centers and over time with variability observed in other ECE sectors in Louisiana during the same period. Table 2 presents these results. The first column indicates that child care centers experienced higher rates of turnover relative to Head Start and pre-k. For instance, in 2017-18, the mean center-level turnover rate was 40% for child care, 34% for Head Start, and 25% for school-based pre-k. These mean differences are striking and also echo prior research documenting differences in the prevalence of teacher turnover across sectors (Phillips et al., 2019).

However, Table 2 also reveals noticeable differences in the *variability* of centers' turnover rates across sectors. School-based pre-k programs, in particular, were twice as likely as child care centers to experience no turnover at all in a given year, and they were also far less likely to experience high turnover. These sector differences are even more pronounced when looking at the prevalence of high turnover over time. While over one-quarter of child care centers had high turnover for two or more years, this was only the case in 11% of Head Start programs and 6% of school-based state pre-k programs. Just 2% of Head Start programs and 1% of pre-k programs had this level of turnover for all three years, compared to 9% of child care centers. Similarly, 44% of centers did not have high turnover in any year compared to 58% of Head Start programs and 71% of pre-k programs.

Robustness Checks

We conducted a set of checks to assess the robustness of our results to two decisions with the potential to influence our estimates of high and persistently high turnover: (a) the threshold at which we designate a center as experiencing high turnover, and (b) the sensitivity of our results to centers with only 1 or 2 teachers, which would require the departure of just one teacher to be classified as high turnover. As summarized in Appendix Table A2, our results are not sensitive to

different threshold definitions for high turnover; in fact, estimates for persistently high turnover hold when we use a more stringent threshold, losing two-thirds of teachers, to define high turnover. Our estimates are also not sensitive to the exclusion of centers with just 1 or 2 teachers. When these centers are excluded, the prevalence of persistently high turnover is largely the same, with some slightly higher point estimates. In all cases however, we find that there are more centers which do not experience any years of high turnover, as well as more centers experiencing three years of high turnover, than would be expected by chance through the simulation results. This suggests that our key finding—that teacher turnover is clustered in specific centers—is robust to these study decisions.

Discussion

Teachers play a critical role in child care centers' ability to meet two key goals – supporting young children's learning and development and providing safe and reliable care so families can pursue employment and education opportunities. The child care sector has long struggled with finding and retaining teachers (Bassok et al., 2021; Whitebook, McLean, Austin, et al., 2018), and these challenges have implications for both children (Markowitz, 2019; Tran & Winsler, 2011) and the teachers and leaders left behind (Cassidy et al., 2011; Doromal et al., 2022; Whitebook & Sakai, 2004). Prior analyses on teacher turnover, both in child care and ECE more broadly, are typically cross-sectional and focused at the individual teacher level. Studies seldom examine how turnover is distributed across centers or whether this turnover is clustered at the same centers over time, limiting our understanding of this phenomenon at a key level for policy intervention.

This paper explored child care teacher turnover in a large sample of publicly funded ECE sites across a single state with two new foci relative to prior literature. First, it emphasized the

importance of examining issues of child care teacher turnover at the center level. Both K-12 research (Holme et al., 2017; Sorensen & Ladd, 2020) and a broader literature on employee turnover in human service industries (Dess & Shaw, 2001; Shaw, 2011) have sought to understand how turnover impacts organizations and the services organizations provide; yet, the child care literature has not assessed how turnover may be concentrated at specific centers (for exceptions, see Caven et al., 2021). Second, this paper considered staffing challenges as something child care centers could be experiencing year after year. Our access to unique panel data capturing all publicly funded child care programs throughout Louisiana from 2015-16 to 2018-19 afforded us the opportunity to answer these new questions.

We have three key findings. First, teacher turnover varied substantially across centers. On average, centers lost about 40% of their lead teachers from one year to the next – high relative to turnover rates documented in other ECE sectors and among K-12 teachers (Phillips et al., 2019; Redding & Henry, 2019). Yet, within each of the years under study, about one-quarter of centers across the state experienced no turnover at all, while about one-third of the centers lost 50% or more of their lead teachers (Table 1). Oftentimes, teacher turnover solutions in ECE focus either on individual teachers (e.g., provide better pre-service and in-service training), or on systemic challenges (e.g., increase public investments) (Bridges et al., 2011; Cassidy et al., 2011; Grant et al., 2019; Manlove & Guzella, 1997; McDonald et al., 2018; Schaack et al., 2020; Totenhagen et al., 2016; Whitebook & Sakai, 2004). While both of these types of supports are needed, our findings suggest that policies targeted at centers may be useful as well.

Second, for a non-trivial portion of centers, high levels of turnover were experienced year after year. In our data, 27% of centers lost more than half of their teachers for at least two of the three years observed, and 9% of the sample had this level of turnover in all three years (Figure

1). We further showed that these rates of persistently high turnover were greater than what we might expect if the teachers who turned over were randomly distributed across centers throughout the state (Figure 2).

That the child care sector has struggled with maintaining a stable workforce is not new or surprising: for several decades advocates and media accounts have sought to uncover and highlight the considerable volatility undermining the child care industry (Whitebook et al., 1993, 2014). One contribution of our study is that it shows the clustering of this turnover at specific centers and reveals the time-persistent nature of staffing challenges for many centers. It is concerning that so many centers across Louisiana must rehire more than half of their lead teachers year after year, making meaningful improvements to work climate, organizational culture, and center quality difficult to sustain. These persistently high turnover sites may be most likely to benefit from direct center-level supports more so than those centers for which high turnover appeared to be a one-time blip.

Finally, aligned with prior studies (Bassok et al., 2021; Phillips et al., 2019), we find that staffing challenges appeared to be particularly pronounced for child care: other ECE sectors like Head Start and school-based pre-k were far less likely to have high levels of turnover within any one year (Table 2). Differences across sectors in annual turnover rates are not surprising given the documented disparities in funding and regulations, which in turn influence teachers' compensation and access to professional supports. However, the differences across sector in levels of persistently high turnover are a novel contribution of our work, and it is striking to see how the sector differences are even more apparent when examining centers' turnover issues longitudinally. These between-sector comparisons capture the large structural differences in resources across ECE sectors and provide suggestive evidence that such differences explain the

high levels of instability facing child care centers in particular.

While low levels of public supports for child care relative to the other sectors likely contribute to the large mean differences in turnover, our study shows that there remains considerable heterogeneity within the child care sector. In our data, a greater proportion of centers did not experience *any* high turnover during the years under study compared to what would be expected if teacher turnover occurred randomly across centers. Understanding factors that could explain this variance is an important next step for research. Encouragingly, a growing body of research has begun to consider organization-level variables as one such factor, including work climate and the provision of higher wages and benefits (Caven et al., 2021; Grant et al., 2019; Schaack et al., 2020; Wells, 2017). Still, more research is needed on the extent to which these efforts give centers relief from teacher turnover issues, particularly those centers that persistently lose the majority of their teaching staff year after year.

Limitations

Although our study provides important new insights on teacher turnover, it has a few caveats that limit its generalizability. Notably, our findings likely *understate* the overall prevalence of high turnover among the universe of child care centers serving children in Louisiana during this period. We focus on only the centers that remained operational throughout our entire study period. This allowed us to better understand the longitudinal nature of center-level turnover; yet centers that were open in 2015-16 but closed before 2018-19 were more likely to demonstrate high levels of turnover relative to centers that remained open (Appendix Table A1). As teachers are a vital component of the operations of child care centers, it is plausible that high teacher turnover could contribute to difficulties in keeping a center open. Further research might examine the extent to which turnover relates to centers' eventual closure decisions.

A second limitation is that, although our data were uniquely able to identify and track teachers across publicly funded child care centers in Louisiana, they did not include key information that could further deepen our understanding of center-level turnover. This includes both *why* teachers leave and a richer set of center characteristics that could be used to identify correlates with high center-level departure rates (e.g., wages and benefits; professional supports). Our study's key contribution is demonstrating how turnover is concentrated at specific centers; the availability of these variables in future research would further extend these findings.

Future Directions, Policy Implications, and Conclusion

Using statewide data on publicly funded child care centers in Louisiana, we found high rates of teacher turnover that varied systematically across centers and persisted for some centers across multiple years. A question researchers and policymakers should continue to think about is the potential influence of centers' high and persistently high turnover for children and families. One way that researchers could do this is to investigate whether high or persistently high turnover is correlated with community-level factors. In particular, it may be important to identify whether there are particular groups of children and families that are more likely to be served by these high and persistently high turnover centers. Researchers should be particularly attentive to equity implications when examining community-level correlates, especially given that other research documents structural inequities along socioeconomic status and by race and ethnicity in who has access to safe and high-quality ECE programs (Hatfield et al., 2015).

Policymakers should also recognize there are many factors likely driving the clustering of turnover at specific centers, including community- or system-level factors that influence how centers are able to staff (e.g., navigating resource constraints in an underfunded child care system) and features of centers themselves (e.g., work environments or how those centers are

managed). As noted above, many data systems do not have this information available, but where feasible this work could provide actionable insights for stabilizing the workforce. For instance, providing center directors at centers with persistently high turnover with explicit training on how to manage an effective center and lead a collaborative team of teachers may be effective, as could targeting additional financial supports to centers where labor market conditions make it particularly difficult to retain teachers. Researchers might also consider ways to study these initiatives to determine whether efforts targeting these drivers ultimately give centers greater workforce stability.

At the same time, broader solutions are also needed. While our key finding—that there is considerable variation in turnover across centers—is the study’s most novel contribution, the study also adds to the growing body of research demonstrating that overall, turnover rates in child care settings are very high, even relative to other ECE sectors in Louisiana. Four-fifths of centers each year experienced at least some teacher turnover, and on average centers are losing 2 in 5 teachers each year. Addressing these bigger systemic issues – including the historical lack of public funding for the system – will be critical. For example, in Louisiana, where this study was conducted, the average child care lead teacher earned about \$9.50 per hour in 2018 (Bassok et al., 2019), about half of the wage rate of lead teachers in school-based pre-k classrooms, which could be one potential explanation why persistently high turnover is more salient in child care relative to other ECE sectors.

The calls for heightened public investment in child care following COVID-19 present a novel opportunity for policymakers to innovate and invest in these strategies for supporting the child care workforce. This period is thus also an important opportunity to learn how to support this sector over the long-term by studying current policy actions. Ensuring the availability of

data, and potentially collecting new information as part of these policy rollouts, will be essential for helping policymakers understand the impact of their investments and ensuring the returns for teachers, centers, and child development.

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TABLE 1
Turnover Rates for Centers in Study Sample

	Summary statistics			Year-to-year correlations		
	Mean center-level turnover rate	% of sample with no turnover	% of sample with high turnover	2015-16	2016-17	2017-18
2015-16	42%	22%	33%	1.00		
2016-17	39%	26%	29%	0.31	1.00	
2017-18	40%	22%	30%	0.21	0.36	1.00

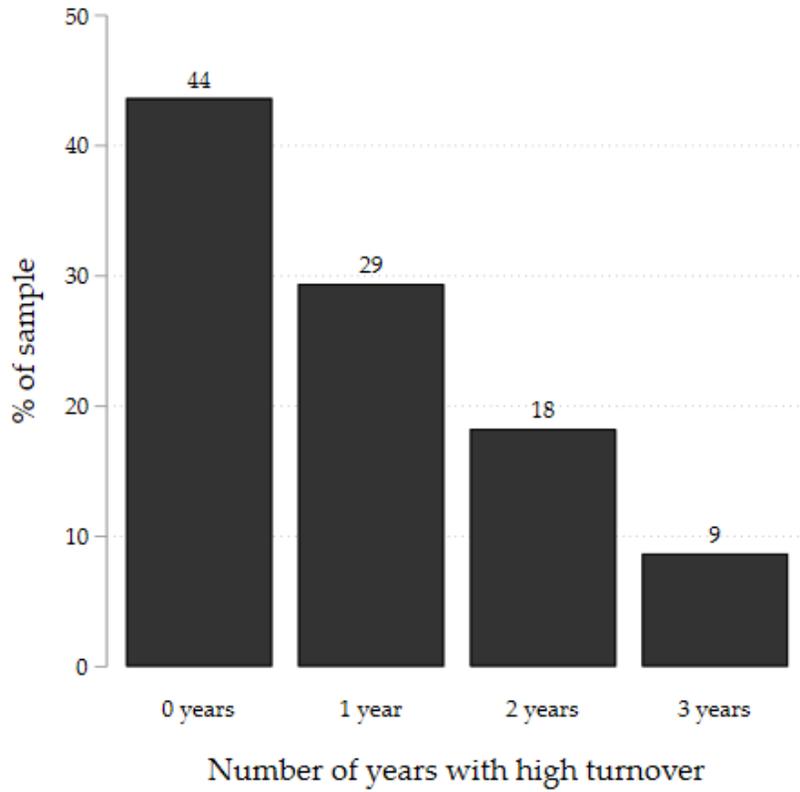
Notes: Based on 575 centers in study sample. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next.

TABLE 2
Prevalence of High and Persistently High Turnover Centers, by ECE Sector

	Turnover rates by year			% of sample by number of years with high turnover			
	Mean center-level turnover rate	% of sample with no turnover	% of sample with high turnover	0 years	1 year	2 years	3 years
Child Care				44%	29%	18%	9%
2015-16	42%	22%	33%				
2016-17	39%	26%	29%				
2017-18	40%	22%	30%				
Head Start				58%	31%	9%	2%
2015-16	29%	33%	14%				
2016-17	26%	36%	16%				
2017-18	34%	27%	24%				
Pre-K				71%	23%	5%	1%
2015-16	21%	57%	11%				
2016-17	24%	49%	11%				
2017-18	25%	48%	13%				

Notes: Based on 575 child care centers, 184 Head Start centers, and 630 school-based pre-k programs. All programs were continuously operational in Louisiana between the 2015-16 and 2018-19 academic years. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next. Persistently high turnover centers are those with at least two years with high teacher turnover.

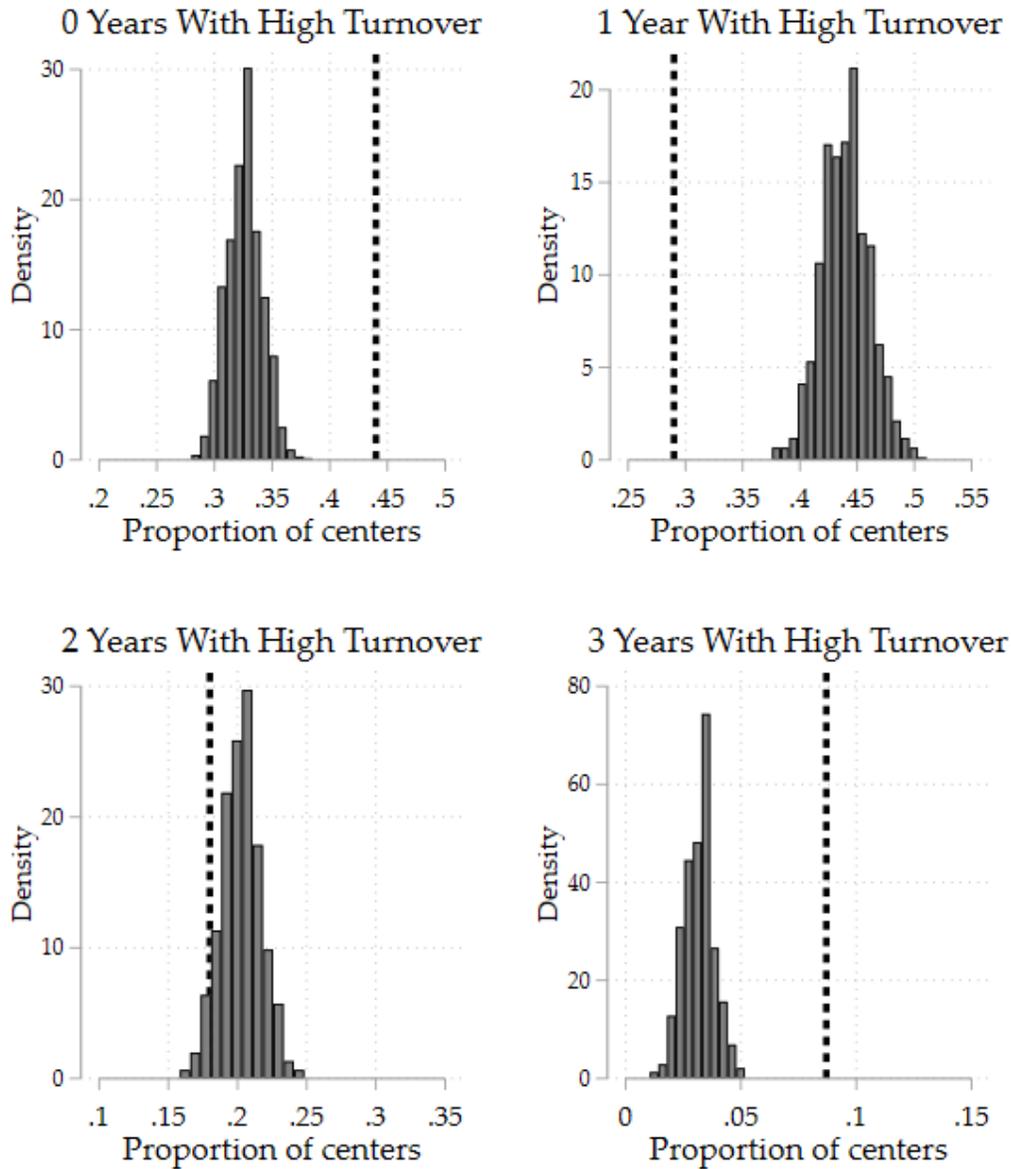
FIGURE 1
Prevalence of Persistently High Teacher Turnover Among Centers in Study Sample



Notes: Based on 575 centers in study sample. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next; persistently high turnover is defined as centers with at least 2 years of high turnover. By sample construction, all centers were open for all three years. See Table A1 in the appendix for additional information.

FIGURE 2

Comparison of Observed Proportion and Simulated Distributions of Persistently High Teacher Turnover



Notes: The figure above summarizes 1,000 simulations, where we fix the likelihood of individual teachers' turnover but randomly assign turnover to teachers such that turnover is uncorrelated with center characteristics. The vertical dashed line represents the observed proportion in our data; this allows us to examine whether the prevalence of centers with persistently high turnover in our data (or even the lack of high turnover) is different from what we might expect to observe were teacher turnover distributed randomly across centers.

APPENDIX A: SUPPLEMENTAL TABLES

TABLE A1

Comparison of Child Care Centers Included in and Excluded from the Study, as Observed in 2015-16

	Included in Study (n=575)	Excluded from Study (n=183)
Center size (mean # of lead teachers)	4.01	2.92
% of sample with high teacher turnover	33%	42%*

Notes. Table describes the 758 centers observed in 2015-16 across key study variables. The first column describes centers included in our study sample, which we define as centers continuously open for all years between the 2015-16 and 2018-19 school years. The second column describes centers that were open in 2015-16 but dropped out of the data prior to the last year of the panel (e.g., due to center closure). Note that in our four-year panel, there were an additional 138 centers that were not open in 2015-16 but observed in at least one subsequent year; these centers are not represented in the table above. In all, the 575 centers in the study represent 76% of all centers observed in 2015-16. High turnover is defined as a center losing more than 50% of its lead teachers from one year to the next; note that turnover rates could be estimated for only 83 of the 183 excluded centers, as the remaining 100 were not observed in 2016-17.

TABLE A2

Sensitivity to Definitions of “High Turnover” and to Center Size

	% of sample, by number of years meeting high turnover definition							
	All Centers (n=575)				Excluding Smaller Centers (n=411)			
	0 years	1 year	2 years	3 years	0 years	1 year	2 years	3 years
Definition 1: >40% turnover								
Observed distribution	19%	27%	31%	23%	18%	25%	31%	26%
Simulated distribution	8%	31%	42%	19%	7%	30%	42%	21%
Definition 2: >50% turnover								
Observed distribution	44%	29%	18%	9%	39%	30%	20%	11%
Simulated distribution	33%	44%	20%	3%	29%	44%	23%	4%
Definition 3: >66.7% turnover								
Observed distribution	52%	29%	14%	5%	50%	29%	15%	6%
Simulated distribution	44%	40%	14%	2%	44%	40%	14%	2%
Definition 4: 100% turnover								
Observed distribution	85%	13%	2%	0%	90%	9%	1%	0%
Simulated distribution	76%	19%	4%	1%	86%	13%	1%	0%

Notes: Table describes the robustness of our persistently high turnover findings to how high turnover is defined. Definition 1 is based on the sample average. Definitions 2 and 4 use intuitive quantities of teachers lost (i.e., half and all, respectively); and Definition 3 roughly defines the threshold for the uppermost quartile on the distribution of turnover rates in 2015-16. “Observed distribution” is the distribution of centers in our data, according to how many years they meet or exceed the given high turnover threshold definition. “Simulated distribution” averages the distribution of centers across 1,000 simulations, where we fix the likelihood of individual teachers’ turnover but randomly assign turnover to teachers such that turnover is uncorrelated with center characteristics. The results under the “Excluding Smaller Centers” columns drop centers with 1-2 teachers, given we expected estimates to be noisiest for these centers that required only one teacher departure to be identified as a “high turnover” center.

APPENDIX B: DATA AND MATCHING PROCESS

Administrative data include lead teachers observed at all classrooms in all publicly funded programs in Louisiana from the 2015-16 to the 2018-19 academic year. These data come from the state's QRIS, where lead teachers' names are recorded in semesterly observations. Notably, there are no teacher IDs in the source dataset, meaning that identifying and tracking teachers over time required name matching. This process is described below; for a full description of this process, see [AUTHORS BLINDED FOR REVIEW] (2021).

We matched teachers across time points using their names, as reported by the observer conducting the observation. Teacher names sometimes had different spellings across time points. Additionally, teachers may also use slightly different first names from year-to-year or change last names (e.g., upon marriage). We used fuzzy matching algorithms to account for typos and different spellings. We used matching algorithms (`-matchit-` and `-reclink-` in Stata) and self-created commands to account for typos and different spellings.

We first matched names within a school year (i.e., fall and spring observations). If we observed a teacher within the same classroom and year that had the same first name but different last name (or the same last name but different first names), we considered this teacher a match. We then used *both* versions of the teacher's name when conducting the year-to-year match, which is the focus of the current analysis. These rules were designed to avoid overstating teacher turnover.

To create our main measures of turnover, we first matched teachers within programs. If we observed a teacher with the same name (or accepted variants as described above) at a center from one academic year to the next (in either fall or spring), we defined that teacher as not leaving their program, even if the same name also appears outside of the program. A teacher is

thus classified as having turned over if their name does not appear in any classroom observations the following academic year, even if that teacher later returns to the center in future years.

Limitations of Match Process

LDOE policy directs classroom observers to observe the classroom's lead teacher and observers are asked to enter the name of the lead teacher in the classroom. Occasionally they enter two names, which *may* represent two co-lead teachers in the same class but may also represent a lead and assistant teacher combination. We are unable to detect whether a name included in the dataset represents a lead or assistant teacher and assume all entered names are lead teachers. This assumption introduces some error to our turnover estimates because assistant teachers may be more mobile than lead teachers; however, we expect the magnitude of this error to be small.

Because the data focuses on lead teachers in the classroom, it is possible that some teachers we classified as turning over may not have left their program, if these teachers move into a non-teaching position (to assistant director, for example) or to an infant classroom. These teachers would inadvertently be classified as having turned over, because we would no longer see the teacher in the classroom observation records.