Inequities in Access to Quality Early Care and Education:

Associations with Funding and Community Context

Bridget E. Hatfield[*a], Joanna K. Lower[b], Deborah J. Cassidy[c], & Richard A. Faldowski[d]

Early Childhood Research Quarterly, 2014

[*]Corresponding author

[a] Oregon State University
College of Public Health and Human Sciences
School of Social and Behavioral Health Sciences
401 Waldo Hall
Corvallis, Oregon 97331
541-737-6438
bridget.hatfield@oregonstate.edu

[b] Lower & Company
507 N. Mendenhall St.
Greensboro, NC 27401
jklower@gmail.com

[c] The University of North Carolina at Greensboro
Department of Human Development and Family Studies
P.O. Box 26170
University of North Carolina at Greensboro
Greensboro, NC 27402-6170
djcassid@uncg.edu

[d] The University of North Carolina at Chapel Hill
Department of Allied Health Sciences
Office of Research
3004 Bondurant Hall; CB# 7122
Chapel Hill, NC. 27599-7122
rafaldow@med.unc.edu

This research was supported in part by Grant Number 90YE0109 from the Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services to the second author. It was also supported by a Postdoctoral Fellowship

provided by the Institute of Education Sciences through the Center for Advanced Study of Teaching and Learning, University of Virginia, to the first author. The contents of this research are solely the responsibility of the authors and do not necessarily represent the official views of the Office of Planning, Research and Evaluation, the Administration for Children and Families, or the U.S. Department of Health and Human nor the Institute of Education Services or the University of Virginia.

Abstract

The purpose of the current study was to examine program- and community-level characteristics related to total points earned by early care and education programs in North Carolina's Tiered Quality Rating and Improvement System (TQRIS). Multiple statewide data sources, program- and community-level characteristics were combined to better understand associations with total points awarded in the TQRIS. The concentration of state and federal funding at the program level, and the socioeconomics of the Q3 communities that programs resided were related to program quality. The current study demonstrated that there are inequities within the system where the highest quality early care and education programs are differentially available based on program funding characteristics, community socioeconomics, and interactions among the program and community variables. Future research and policy implications are discussed.

Availability of high-quality early care and education programs for children and families living in and near poverty is a social priority in closing the achievement gap and preventing intergenerational poverty. Helburn and Bergmann (2002) contend, "There is a public interest in good quality child care" (p. 161). In addition to navigating the social and economic disparities associated with poverty, families must also navigate a multi-tiered early care and education system that intersects with market constraints and politics. Consequently, a system with tiered standards via quality ratings results in differential experiences for children and families. This begs the question, who is privileged by a system that allows children to be cared for and educated in programs at varying levels of quality?

Exposing potential differences in access within the early care and education system is critical as states develop and refine Tiered Quality Rating and Improvement Systems (TQRIS; or Quality Rating and Improvement Systems, QRIS). In North Carolina, the TQRIS informs families and the early care and education market of program quality. It is also connected to incentives such as tiered reimbursement rates for subsidy payments and quality enhancement initiatives to assist programs in meeting or maintaining higher-quality standards. It is important to understand the current contexts of these efforts, their strengths, and where they may fall short in meeting the needs of constituents. Consequently, the current study examines earned TQRIS points in relation to community contexts and sources of funding to support evidence-based decisions that promote equitable access to high-quality early care and education.

Distinct from many TQRISs in the nation, all licensed early care and education programs in North Carolina are required to participate in the 5-star rating system, at least at the 1-star level. The term early care and education is used in the current study to describe licensed centers and family child care homes and is interchangeable with the term child care. Programs may earn 2-5

stars by voluntarily meeting higher standards. In the 14-year history of North Carolina's TQRIS, programs have demonstrated positive movement in star ratings (see Gable, 2013 for complete history). Since 2001 nearly 2,500 centers and 1,800 family child care homes have achieved a higher star rating. Given North Carolina's successful effort to increase the quality of early care and education through their TQRIS, investigating characteristics that support or inhibit higher-ratings is important as North Carolina and other states refine their TQRISs.

A required hallmark of state and federal funding is "parental choice"; therefore, evidence of sufficient supply of quality choices warrants empirical testing. Even with the increase in the number of quality programs in North Carolina, accessibility to the highest-quality programs may be limited. Although TQRISs inform the early care and education market, there is no evidence that funding is leveraged in communities in such a way that equitable access to high quality programs is promoted. For instance, programs operating in low-income communities may have fewer monetary resources limiting the feasibility of voluntarily achieving a higher star level; higher funding streams may boost program quality in these communities. In the following sections, we outline relationships among state and federal funding, community characteristics, and early care and education program quality.

State and Federal Funding

Early care and education programs in North Carolina that receive state or federal funding must be licensed by the NC Division of Child Development and Early Education (DCDEE). Thus, in order to receive state or federal funding, a program must earn a minimum of a 1-star rating to obtain a license. Restricting funding access to only licensed early care and education programs (child care centers and family child care homes) supports a commitment to keep public funds within the regulated system to support a sustainable infrastructure of quality choices within

communities. In North Carolina, only licensed center-based programs are eligible to receive Head Start, More at Four, and/or DCDEE subsidy funding; family child care homes are only eligible for DCDEE subsidy funds.

Subsidy funds. Subsidy vouchers in the early care and education market are a source of state and federal funding to support low-income families in need of child care. The Child Care and Development Fund (previously the Child Care Development Block Grant) administered by the Office of Child Care allocates support to states to assist, "low-income families in obtaining child care so they can work or attend training/education" (U.S. Department of Health & Human Services Administration for Children & Families, 2010a). This strategy is based on the idea that child care vouchers increase the purchasing power of low-income families, resulting in higher-quality early care and education in low-income communities (Fuller, Kagan, Caspary, & Gauthier, 2002). In North Carolina at the time of this study, programs that received state or federal subsidy funding were required - at a minimum - to meet basic licensing standards at the 1-star level. Programs meeting the standards of higher star ratings (2 - 5 stars) were reimbursed at higher subsidy rates. However, the degree to which subsidy receipt ensures children are in high-quality programs is debatable and likely depends on the availability and accessibility of early care and education programs, as well as other state and federal policies.

A recent report from the Brookings Institute (Herbst, 2013) suggests that subsidies consistently fail to buffer the effects of poverty for low-income children. Specifically, evidence suggests that children receiving subsidized care are more likely to experience negative health, reading, math, and social and emotional outcomes compared to children without subsidized care. One possible explanation for this negative finding is that other factors, such as community disadvantage, may operate in tandem with subsidy receipt. For instance, in disadvantaged

communities, the amount of subsidy dollars allotted to a program may promote or limit program quality. In light of the proposal for increased funding for subsidies as well as stricter regulations (U.S. Department of Health & Human Services Administration for Children & Families, 2013), the examination of the relationships between subsidy, community context, and TQRIS ratings are timely.

North Carolina pre-K. Eligibility for North Carolina's state-funded pre-K program (entitled More at Four during the time of the current study) is based on family income and additional risk factors. More at Four funding has resulted in improved children's academic and behavioral outcomes and a narrowed achievement gap compared to non-economically-disadvantaged peers by 40% (Peisner-Feinberg & Schaaf, 2010). The impact of state-funded pre-K has been recognized by the Obama administration through the proposed federal pre-K initiative that aims to fund high quality pre-K education for all 4-year-olds living in families 200% below the poverty level (The White House, Office of the Press Secretary, 2013). Understanding ways funding supports access to high-quality early care and education within all communities may inform future funding policies to support access to high-quality programs. Further, understanding how pre-K funds operate within various community contexts will afford insight to improve quality, possibly enhancing the established gains in child outcomes reported from More at Four (Peisner-Feinberg & Schaaf, 2010).

Head Start (and Early Head Start). Head Start and Early Head Start are federally-funded, family-focused programs designed to promote social and cognitive development. In a randomized control trial, children attending Early Head Start programs exhibited improved cognitive and socio-emotional outcomes compared to children in the control group (Love et al., 2005). The Head Start Impact Study reported higher-quality experiences for children in Head

Start programs compared to control groups (U.S. Department of Health & Human Services Administration for Children & Families, 2010b). Further, on average, Head Start programs are rated as 'good quality' by the Environmental Rating Scales (U.S. Department of Health & Human Services Administration for Children & Families, 2000). In sum, evidence suggests Head Start funding generally supports higher-quality ratings for programs when compared to other early care and education settings. However, it is not clear if Head Start funding is dispersed so that all communities, particularly in low-income communities, are able to offer high quality programs.

Community Characteristics and Associations with Quality

Public schools have been criticized for inequitable availability of high-quality education based on race and class (Ladson-Billings, 2006), and there is evidence that the early care and education sector is following a similar path (Cassidy, Lower, Kintner, & Hestenes, 2009; Howes et al., 1995; Kontos, Howes, Shinn, & Galinsky 1997; Wrigley, 1991). As states develop and refine their TQRISs, it is important to understand relations between community contexts and the quality of early care and education available within communities. Sampson, Morenoff, and Earls (1999) argue that the "social-structural differentiation in the United States are very much a spatial affair" (p. 636). That is, to understand and measure community characteristics of early care and education programs, widely-accepted sociologically-based constructs of community characteristics must be employed (Sampson et al., 1999). The constructs — concentrated disadvantage, concentrated affluence, concentrated immigration, and residential stability; are utilized in other studies examining community effects on school choice (Lauen, 2007), children's cognitive development (Lloyd & Hertzman, 2010), and children's verbal ability (Sampson, Sharkey, & Raudenbush, 2008). This study uses these community constructs in order to make

comparisons across disciplines and to further understand their links to the quality of early care and education.

Concentrated disadvantage and affluence. In general, the socioeconomics of a community (i.e., affluence and disadvantage) are associated with the quality of schools, quality of child care centers, and child outcomes (Leventhal, Xue, & Brooks-Dunn, 2006; Sampson, Morenoff, & Gannon-Rowley, 2002). Communities defined by higher concentrated affluence have a larger percentage of families that earn more than $75,000/year and have at least a Bachelor's degree. Comparatively, communities characterized by higher disadvantage have a higher percent of families living below the poverty line and higher unemployment. These community characteristics may limit the choices and quality of early care and education.

Families in poverty spend a greater percentage of their yearly income on child care compared to their more advantaged counterparts (National Women's Law Center, 2008). Even so, it is likely not adequate to guarantee high-quality care and education since cost is positively associated with quality (Helburn & Howes, 1996; Kontos et al., 1997). When the supply of high-quality early care and education is dependent on parent fees, the financial burden on families to finance programs reduces accessibility to high-quality programs in the overall early care and education market. Ultimately, this restricts choices that families have for the care and education of their children (Gordon & Chase-Lansdale, 2001). However, if cost is no longer a factor, parents prefer high-quality care and education and attribute more financial value to these environments (Shlay, Tran, Weinraub, & Harmon, 2005).

There is evidence to suggest a disproportionate number of young children of color are living in or near poverty (Wight & Chau, 2009), particularly in North Carolina, which is rooted in the socio-historical past of the south. In a factor analysis of census data, Sampson et al. (1999)

found that the percent of Black or African Americans was confounded with the population below the poverty line and other community characteristics (e.g., percentage of households receiving public assistance). The strong correlation between race and poverty is also evident in early care and education. Cassidy and colleagues (2009) found compromised structural supports in North Carolina pre-school classrooms, with African American teachers serving a higher percentage (24% higher) of children on subsidies compared to classrooms with European American teachers. The classrooms with African American teachers also scored lower on global quality based on the Environment Rating Scale. Further, Howes et al. (1995) found African American children were less likely to be in "good" quality care compared to European American children. The current study further contributes to this literature by including racial composition as a component of concentrated disadvantage to examine possible additive effects and correlates with North Carolina's TQRIS ratings.

Concentrated immigration. Families living in communities of higher concentrated immigration are defined as higher percent of foreign born and higher percent of Latino or Hispanic residents (Sampson et al., 1999). In North Carolina, the Latino and Hispanic population increased by 111% between 2000 to 2010 accounting for 28% of the state's population change, and was rated sixth in the nation for the growth rate (North Carolina Governor's office of Hispanic/Latino Affairs, 2013). Immigrant families are just as likely as non-immigrant families to enroll their 3-5-year-old children in formal care after accounting for other parental and income variables (Greenberg & Kahn, 2011). However, in working-class California communities with high Latino populations, the high demand for early care and education created a willingness for families to accept lower-quality options (Fuller et al., 2002). Consequently, examining the

quality of early care and education in communities with high concentrated immigration warrants further investigation.

Residential stability. The residential stability of a community may also be related to early care and education options. A component of residential stability— greater number of individuals living in the same house for at least five years, is positively correlated with family and center-based care options (Herbst & Barnow, 2008). A higher rate of residential transiency tends to be associated with more negative community and individual outcomes (Sampson et al., 2002). In communities where there is more resident stability and home-ownership, regardless of socioeconomics, there is strong social support that is beneficial for mothers (Turney & Harknett, 2010). The current study parses out the relationship between residential stability, allocation of funding, and quality of early care and education to provide a better understanding of residential stability of North Carolina communities where family child care homes and centers operate.

North Carolina Context

In the current study, state and federal subsidy funds from the North Carolina Division of Child Development (DCD), Head Start (which includes Early Head Start), and More At Four were included. All of the above funding avenues are focused on serving children from low-income families. In North Carolina, 25% of children under age 3 and 22% of children ages 3 to 5 are living in poverty, representative of the national rate of 22% (National Center for Children in Poverty, 2010). As states are developing and refining TQRISs, it is critical to understand program- and community-level relationships with child care quality in order to identify supportive policies that promote availability of the highest-quality programs to all families. Accordingly, the current study examines direct associations and interactions among the quality

of early care and education programs, the community contexts in which they operate, and state and federal funding received within the North Carolina TQRIS.

Method

The study utilized a cross-sectional design and multiple data sources, including regulatory and administrative data from the North Carolina DCD, observational data from the North Carolina Rated License Assessment Project, survey data from the United States Census Bureau, and administrative data from the North Carolina State Head Start Collaboration Office and the North Carolina Office of School Readiness. Including all licensed early care and education programs in the state of North Carolina ensured a low risk of selection effects and a large sample size to have adequate power for hierarchical linear modeling (Spybrook, Raudenbush, Congdon, & Martínez, 2011).

Participants

The population studied included nearly all licensed early care and education programs (family child care homes and centers) in North Carolina. The licensing data were received from the North Carolina DCD September 25, 2008. At that time, there were 8,903 programs in the dataset. The licensing data included the zip codes of the program locations that allowed it to be merged with the census data at the zip-code level. Two hundred fifty-four programs did not have census information that corresponded with their zip code; these programs were removed from the data set. Additionally, programs that solely offered public school pre-K or after-school care (n = 1,076) were removed from the data. These programs were removed because at the time of the study, they were not universally licensed within the state nor did they offer full-day child care. Six hundred and thirteen programs were exempt from quality rating requirements (n = 364 religious exemption; n = 221 temporary license; n = 28 provisional license) and were removed

from the data set. An additional 78 programs were dropped from the dataset because they were in the process of renewing their license to align with 2008 licensing standards. The final sample included 6,882 programs nested within 619 zip codes based on their operating addresses. Of these, 3,725 (54%) were family child care homes and 3,157 (46%) were child care centers. Child care centers averaged 8.43 points (*SD* = 4.13) or 3-stars, and family child care homes averaged 6.05 points (*SD* = 4.83) or 2 stars (see Figure 1 for distribution of programs by star level). Table 1 provides conversion from TRQIS points to star rating.

Licensing data from DCD was merged with subsidy, Head Start, and More at Four data based on the facility identification number assigned by DCD for licensing. Figure 2 illustrates how funding was allocated for child care centers and family child care homes. The figure provides the star rating, average total points earned from the TQRIS, and the number of programs that are included. For example, family child care homes that received DCD subsidy (*n* = 2,623) earned, on average, 6.96 total points (2-star rating). In comparison, family child care homes that did not receive DCD subsidy funds earned, on average, 3.98 total points (1-star rating). Note that in child care centers, some programs received multiple sources of funding; these numbers are not displayed in Figure 2 for simplicity, but are described below.

Child care centers that received funding from more than one source received, on average, a 4-star rating. Specifically, 47 centers received More at Four, Head Start, and DCD subsidy funding (*M* = 12.26 total points). One hundred fifty-one centers received Head Start and DCD funding (*M* = 11.64 total points). More at Four and DCD funds were distributed to 318 centers (*M* = 11.60 total points). Finally, the 151 centers that received Head Start and More at Four funds earned, on average, 12.31 points.

Measures

Early care and education program quality. The total licensing points earned from the DCD were used to quantify early care and education program quality. Based on these points, the DCD assigns a star rating to all licensed programs. As noted in Table 1, 0-3 points earned in the rated license equates to 1 star, 4-6 points equates to 2 stars, 7-9 points equates to 3 stars, 10-12 points equates to 4 stars, and 13-15 points equates to 5 stars. Programs can earn up to seven points in education standards and seven points in program standards with an additional "quality point" that may be achieved through enhanced teacher education requirements, approved curriculum adoption, or other options. Points are earned toward the education standards based on teacher and administrative education levels and experience. Licensing points are earned toward the program standards based on operating and personnel policies, number of activity areas in classrooms, square footage per classroom, staff-child ratios, and the results from a voluntary environmental rating assessment. The purpose of using the total licensing points earned versus the star rating is to recognize the full-range of heterogeneity among programs. A program's licensed capacity and extended care (licensed for second- and/or third-shift care) were included as program-level covariates. To normalize the observed distributions of licensed capacities, the natural log base 2 of licensed capacity was computed for analyses (Tabachnick & Fidell, 2001).

Program funding. Child care centers and family care homes were eligible to receive DCD subsidy funding. The DCD funds were from the 2008 fiscal year; total DCD funds awarded to a program was divided by the program capacity. Child care centers, but not family child care homes, were eligible to receive More at Four and/or Head Start funds. The More at Four and Head Start funds were from the 2007-2008 school year. Head Start (and Early Head Start) funding amounts were received at the agency level. Thus, Head Start funds for each child care center were estimated accounting for the number of programs within each agency and the

licensed capacity of each program. More at Four funds were received by a small percentage of child care centers and the funding amount was relatively homogeneous. Thus, More at Four funding was operationalized as dichotomous with 0 representing no funding and 1 representing some funding.

Community context. The Decennial Census 2000 Summary File 3 (SF3) data set was used for the current study. Summary File 3 includes variables measuring socioeconomics at low level geographies such as zip codes (U.S. Census Bureau, 2007). Approximately 1 in 6 households are included in the sample and weighted to represent the population. Based on Sampson et al. (1999), the following factors were used to examine socioeconomic differences between communities at the zip-code level: (a) concentrated disadvantage; (b) concentrated immigration; (c) residential stability; and (d) concentrated affluence. Following sociological convention from Sampson and colleagues (1999), the community context variables can be considered indices of concentrated disadvantage, concentrated immigration, residential stability, and concentrated advantage expressed on a zero-to-one scale, where greater values indicate greater quantities of the attribute. Even though they range from 0 to 1, the community context variables cannot be interpreted as percentages.

Specifically, the variables constituting concentrated disadvantage include: percent population below the poverty line, percent households receiving public assistance, percent individuals 16 and over in labor force unemployed, percent female-headed families with children, and percent Black or African American. The variables in the concentrated disadvantage composite exhibited low to moderate correlations (r = .30 to 69). The variables constituting concentrated immigration include percent Latino and percent foreign born (r = .87). The variables representing residential stability include percent of residents five-years-old and older

who resided in the same house five years earlier and the percent of owner-occupied homes (r = .54). The variables composing the concentrated affluence composite include percent of families with incomes $75,000 or higher, percent of adults with a college education, and percent of civilian labor force employed in professional or managerial occupations; variables in the concentrated affluence factor were highly correlated (r = .79 to .92). Each composite was computed by taking the average of its principal variables. Following Sampson et al. (1999), the composite scores (e.g., concentrated disadvantage) were utilized in analyses.

The community context composite scores range from 0 to 1. In the current sample, the average concentrated disadvantage (α = .69) was .13 (SD = .07) with a range of .02 to .41. The average concentrated immigration (α = .90) was .05 (SD = .04) with a range of .00 to .45. The average residential stability (α = .68) was .60 (SD = .10) with a range of .06 to .91. The average concentrated affluence (α = .95) was .22 (SD = .10) with a range of 0 to .65. The correlations between the composite scores are in Table 2.

Analytic Strategy

Preliminary, descriptive analyses were conducted using SPSS16. Concentration of Head Start funding and concentration of DCD subsidy funding were positively-skewed, thus base-2 logarithms of Head Start and DCD funding were computed (Tabachnick & Fidell, 2001); this normalized these data. Parameter estimates of Head Start and DCD funding in all analyses, therefore, refer to the increases in quality associated with doubling Head Start and DCD funding per child, respectively.

Given the nesting of child care programs within zip codes, multilevel models were executed using the HLM6 software (Raudenbush, Bryk, & Congdon, 2004). The HLM level-1 models included characteristics measured within early care and education programs including

funding (i.e., More at Four, DCD subsidy, and Head Start) as well as program covariates (i.e., $\log_2$ capacity and availability of extended care). The level-2 models included zip code-based community characteristics (i.e., concentrated disadvantage, concentrated immigration, concentrated affluence, residential stability). All models were estimated using full-information maximum likelihood. Child care centers and family child care homes were analyzed separately. There were no missing data within the analytic sample of 6,882 programs.

Although results for all intermediate analyses are not reported, the overall modeling strategy was to first determine which level-1 effects (program characteristics) were predictive of total licensing points and which ones were sufficiently heterogeneous in their relationship to total licensing points between communities (zip codes) that they required variance components. Using likelihood ratio tests, as well as information-based statistics such as the Bayesian Information Criterion (Raftery, 1995; Schwarz, 1978), these variables were distilled into a minimal set of variance components required to adequately model observed quality heterogeneity of programs within and between communities. Next, we added community-level characteristics to the level-2 model and, through a series of model comparisons, determined the minimal set of program characteristics (level 1) and community characteristics (level 2) needed to account for total licensing points. All model comparisons were guided by Wald tests but finalized through likelihood ratio tests referenced against the full level-1 and level-2 model (Raudenbush & Bryk, 2002). All model reductions were guided by the principle of marginality, which states that interaction effects should only be tested in the presence of constituent lower-order predictors, and that lower-order terms should be retained, regardless of significance, in the presence of higher-order interactions containing those predictors (Nelder, 1977).

Results

Center Quality from Program Funding and Community Characteristics

The unconditional model indicated that 9% of the variance in total licensing points of centers lay between communities (Table 3). Following the modeling strategy outlined above, the final model was determined by reducing the full set of level-1 and level-2 predictors into the minimum set most strongly associated with total licensing points (see "Final Model" column of Table 3). In the final model, receipt of More at Four funds as well as concentration of DCD subsidy and Head Start funds were associated with an incremental boost in total licensing points. Child care centers nested in communities with higher levels of concentrated disadvantage were more likely to be of lower quality. For instance, a .1 increase in concentrated disadvantage was associated with an average .49 decrease from the intercept (7.69 points). Child care centers situated in communities with higher residential stability were, on average, of lower quality. Specifically, for each .1 decrease in residential stability, programs are expected to demonstrate a .38 decrease in total licensing points.

For child care centers, a .1 increase in concentrated affluence was associated with a .76 increase in predicted licensing points, regardless of Head Start funding, DCD funding, or More at Four funding. However, affluence was moderated by the concentration of Head Start and DCD funding (but not by More at Four funds).

In communities of high concentrated affluence, Head Start centers that received an average amount of Head Start funding ($871 per child) had lower total licensing points (8.75) compared to centers that received one *SD* above average concentration of Head Start funding (Figure 3; $5,722 per child), which had 9.32 total licensing points. Simply, child care centers located in more affluent communities with greater concentration of Head Start funding ($5,722 per child) fared best.

Additionally, an association similar to concentrated affluence and Head Start funding was evident with DCD funding, community affluence, and predicted total licensing points (Figure 4). Centers that received a greater concentration of DCD subsidy funds (one *SD* above the mean or $3,566) demonstrated higher quality and received a greater boost in quality points compared to centers that received lower concentrations of subsidy funds.

Family Child Care Home Quality from Program Funding and Community Characteristics

The unconditional model indicated that 6% of the variance in total licensing points for family child care homes lay among communities (Table 4). Following the same modeling strategy used for child care centers, community characteristics of concentrated disadvantage, concentrated immigration, residential stability, and concentrated affluence were added to the effective level-1 model for family child care homes to determine whether the community characteristics were associated with program quality as main effects or moderated any of the program-level effects. The full set of level-2 predictors were reduced into the minimum set most strongly associated with quality of family child care homes. Summaries of key models for family child care homes are displayed in Table 4.

In the final model ("Final Model" column of Table 4), the program-level covariates, extended care and licensed capacity, were associated with higher total licensing points for family child care homes. Community context factors of concentrated affluence and residential stability were significant predictors of total licensing points. Each .1 increase in community concentrated affluence was associated with an average increment of .39 TQRIS points. However, each .1 increase in community residential stability was associated with a decrement of .2 total licensing points. As with child care center quality, concentrated immigration was unrelated to quality of family child care homes.

DCD subsidy moderated the effect of concentrated disadvantage on total licensing points for family child care homes. Programs with below average funding from DCD were predicted to be rated in the 1 star range regardless of the level of disadvantage—simply, TQRIS points decreased as concentrated disadvantage increased. When family child care homes received the average DCD subsidy funds ($1,469 per child), there was no relationship between quality and concentrated disadvantage. Most importantly, higher-than-average levels of DCD subsidy funding (*M* = $3,318 per child) were associated with higher quality for family child care homes (3 stars), even in communities with the highest levels of concentrated disadvantage. That is, when the concentration of subsidy received was highest, the subsidy funds counteracted the effect of community concentrated disadvantage on family child care home quality.

Discussion

The purpose of the current study was to examine how the quality of early care and education varies due to community characteristics, state and federal funding, and community and funding interactions. Multiple statewide and federal data sources were combined to understand the associations with the quality of 6,882 licensed early care and education programs in North Carolina's TQRIS. Overall, the results indicate that state and federal funding at the program level, as well as the socioeconomics of the communities in which programs are located, were related to total licensing points on the state's TQRIS. Our findings suggest significant inequities in access to high-quality early care and education in certain community contexts. However, these inequities in access to high-quality programs are buffered by higher state and federal concentrations of funding. Results are discussed separately for child care centers and family child care homes. Study limitations, future research suggestions, and policy recommendations follow.

Child Care Centers

Child care centers that received More at Four funding, higher concentrations of DCD subsidy, and/or higher concentration of Head Start funding demonstrated positive increments in rated quality. More at Four funding provided the largest boost to total licensing points compared to DCD subsidy and Head Start funding. Given that both More at Four and Head Start require enhanced quality standards and subsidy reimbursement rates are tiered in North Carolina, these results are not surprising. Neither licensed capacity of centers nor the availability of extended care, were related to differences in rated quality.

Child care center quality varied by aspects of community context. Specifically, child care centers located in communities characterized by higher concentrations of disadvantage were more likely to be of lower quality. On the other hand, centers situated in more affluent communities were more likely to be higher quality as rated by the TQRIS. However, lower concentrations of residential stability were associated with a boost in licensing points. The concentrated disadvantage of the community was not related to differences in center quality. Children from communities that are most disadvantaged are likely to benefit the most from high-quality early care and education (Caughy, DiPietro, & Strobino, 1994; Connell & Prinz, 2002; Magnuson, Meyers, Ruhm, & Waldfogel, 2004; Peisner-Feinber et al., 2001). However, in the current study, the highest-quality programs were least likely to be in communities where families most at risk resided. Although the current study is not able to confirm that families actually utilized the early care and education programs within the zip code in which they lived, families rate location as important (Kim & Fram, 2009) and often choose programs based on location (Peyton, Jacobs, O'Brien, & Roy, 2001).

Interestingly, the community factor of residential stability was negatively related to center quality. It may be that communities with lower transiency may be older, have older children, or be retired and not in need of child care (Queralt & Witte, 1998). Subsequently, there may be less demand in these areas for high-quality center-based care. Queralt and Witte (1998) suggest that in communities where residents are more stable, neighbors may be willing to care for children in their home. Since the negative association between residential stability and quality was not replicated with family child care homes, our results support the idea that these types of communities may rely more on licensed family child care homes compared to child care centers for early care and education.

In the current study Head Start, More at Four, and DCD subsidy funding for child care centers were generally related to positive increments in rated quality. Receipt of More at Four funds was related to higher center quality, yielding an average increase of 3.37 total licensing points compared to centers that did not receive More of Four funds. Given the positive associations on child outcomes reported for More at Four (Peisner-Feinberg & Schaaf, 2010), these results further suggest that investment in high-quality preschool programs such as these are vital for positive child development. It is also important to note that receipt of More at Four funding boosted predicted quality regardless of community context. The results are not as straightforward for DCD subsidy and Head Start funding when community context is considered.

Community context by funding. Overall, centers that received the highest concentration of Head Start funding were of higher quality compared to centers that were allocated below average concentration of Head Start funding. However, this association was dependent on the concentration of Head Start funding and the community's level of concentrated affluence. This dependency is most evident in Head Start programs receiving below average funding. In this

instance, even when funding is similar, quality varies by the degree of community affluence. On average, child care centers that were one *SD* below the average concentration of affluence received fewer licensing points ($M = 5.03$) compared to a center located in a community one *SD* above average concentrated affluence *(M* = 6.70 total points). That is, the boost in licensing points associated with the concentration of Head Start funding is dependent on the degree of concentrated affluence in the community.

Similarly, subsidy funds from the DCD also predicted differences in quality of child care centers. Centers that received above average funding ($3,566 per child) earned higher total licensing points, compared to centers received average or below average subsidy funding, regardless of community affluence. In contrast, centers that received below average concentration of DCD subsidy funding ($1,724 per child) were differentially impacted by the concentration of community affluence. Total points for programs in the lowest tier of concentrated affluence were predicted to be 5.02, while programs in communities of greater affluence with the same amount of subsidy funding earned 6.70 predicted points.

The concentration of Head Start and DCD subsidy funds was positively related to quality points, with higher concentrations yielding greater boosts in quality, but the impact of these funds varied significantly by the affluence of the community in which the centers were located. Increasing funds per child in programs situated in less affluent communities may be an effective strategy to address the inequities in access to quality, and improve the experiences of young children in these centers. Future research examining associations among subsidy funds must account for varying community contexts. Finally, balancing higher concentrations of funding with higher-quality standards should continue to be of focus.

Family Child Care Homes

On average, family child care homes scored more than two licensing points lower than centers. This finding is consistent with prior research reporting that the learning environments of family child care homes are generally rated lower in quality than child care centers (Dowsett, Huston, Imes, & Geenetian, 2008). While family child care homes tended on average to score lower than centers, some characteristics of family child care homes predicted higher TQRIS points. Particularly, family child care homes with higher concentrations of DCD subsidy funding, those licensed to serve more children (8 children compared to 5 or fewer), or those that offered extended care demonstrated higher total licensing points.

There were also compelling results concerning total points in family child care homes related to their community context. Specifically, family child care homes situated in communities with higher concentrated affluence were likely to be of higher quality. Communities with higher levels of concentrated affluence included a greater percent of families with incomes $75,000 or higher, adults with a college education, and a civilian labor force employed in professional or managerial occupations. In communities where these characteristics were less prevalent, family child care homes were of lower quality. One explanation for this result is families that are college educated and earn higher incomes may seek out and create demand for higher-quality family child care homes. Additionally family child care home providers in these communities may be more likely to be college educated resulting in higher quality programs.

Community context by DCD subsidy funding. The quality points earned by family child care homes varied based on the concentration of DCD subsidy funding and community context. While DCD subsidy funding was related to boosts in total licensing points for family child care homes, this association was strongest in the most disadvantaged communities that

received an above average concentration of DCD subsidy funds (approximately $3,318 per child). Specifically, family child care homes with an above average concentration of DCD funding received the greatest boost in total points, regardless of community context. In contrast, family child care homes in the most disadvantaged communities that were allocated the average or below average concentration of DCD subsidy funds did not achieve a parallel boost in total points. Thus, in communities where high-quality care is needed the most to support positive outcomes for children, increasing the concentration of DCD funding per child in family child care homes predicted higher total licensing points. This may be an especially effective strategy in communities that rely on family child care homes for child care needs, in addition to other supports such as increased education and specialized training for the providers.

North Carolina's Tiered Subsidy Reimbursement

North Carolina utilizes a tiered subsidy reimbursement system through which subsidy payments vary by county, star rating, age of child, and program type. However, competing goals and policies associated with subsidy funds may compromise the potential impact of subsidy to leverage quality improvement. That is, subsidy funds are designed to cover only 75% of the cost of care and education in a program. This may not be sufficient funding to finance efforts to improve quality (e.g., reduce ratios, improve education among providers, improve the physical environment). Subsidy reimbursement rates have not been raised in North Carolina since 2007 and routinely do not even meet the 75% level. Adams and Rohacek (2002) recommend that child care subsidy policies include child development goals as a priority. While this is commendable, there is not adequate funding to meet the waiting list with the existing funding structures (Burnstein & Layzer, 2007; National Women's Law Center, 2008).

In 2011, there were over 375, 000 children eligible for subsidized child care in North Carolina; however approximately 22% of these children actually received subsidy (North Carolina Division of Child Development and Early Education, 2011). Perhaps reflective of current economic times, the wait list is the highest the state has experienced. Tiered reimbursement rates mean programs that earn a higher number of stars receive higher subsidy rates per child and those higher rates assist in supporting the cost of maintaining or achieving higher-quality environments. However, the direction of the effect is unclear. We do not necessarily know how programs initially achieved higher quality, but what is clear from the current study is that once the higher points and stars are achieved, there is empirical support relating higher subsidy rates with program quality.

Current Activities in North Carolina's TQRIS

Recent legislation in 2012 acted on a tipping point in the system, disallowing subsidy payments to 1- and 2-star programs. Because of the notable increase in higher-rated programs from 2001-2012, the NC General Assembly and the NC Division of Child Development and Early Education acted to limit subsidy payments to only higher-star programs. Currently, approximately 84.5% of children on subsidy are enrolled in 3-5 star facilities and the remainder of children are in facilities that are engaged in activities to upgrade the quality of their 1- or 2-star programs to meet the new mandate. This policy change ensures children receiving subsidy are cared for in programs that earn a minimum of 3 stars and demonstrates a delicate balance between serving more families and ensuring high quality care and education, requiring alignment of policy, funding, and family choice.

Recognizing that the current 5-star system does not reflect the highest possible levels of quality, the state established the North Carolina Quality Rating and Improvement System

Advisory Committee. The Committee recently completed a plan to improve the licensing requirements of the state's TQRIS. The recommendations include greater rigor for all facilities at all 5 tiers of quality. Furthermore, with the assistance of the Race to the Top — Early Learning Challenge funding, the state will conduct research to evaluate the new system, including child outcome data. Important criteria recommended for inclusion in the new system will be family engagement activities and improved cultural competence of teachers and providers. The results from this study suggest marked variation in access to high-quality programs by community context, and is an important consideration as North Carolina (and other states) revises their TQRIS to make stronger links between quality ratings, the experiences of children and families, and their outcomes.

Limitations and Future Research

A major strength of the current study was the use of existing data from multiple sources. However, using existing data also created limitations due to the nature of data collection and means of connectivity. Because Head Start funds were allocated to the funding agency, program-level funds had to be estimated based on the number of programs within funding agencies and the capacity of these programs. While there is likely some level of error in these estimations, they were computed based on the routine funding practices of Head Start. Future research that incorporates exact Head Start funds allocated to programs is recommended as well as those that parse funding by Head Start and Early Head Start. The census data provided an estimate of community contexts; however, it is dated and some contexts may have changed since its collection. Replication of this study with new census data is recommended. Finally, these data limited the ability to examine funds programs contribute out of pocket. It is possible that

programs with higher contributions by providers themselves may be able to secure more resources for the child care program resulting in higher quality.

The current study included the socioeconomics at the zip-code level to better understand the contexts of programs performing best in North Carolina's TQRIS. Following up with programs in a qualitative study to illuminate barriers programs face in meeting enhanced standards to earn higher points would allow for more depth in identifying needs, and assist other states in the development and improvement of their TQRISs. It would also allow us to understand the complexities programs face as a result of the context in which they operate and the population they serve. Finally, the current study was based on programs nested within communities. More information about the children that attend programs adds an additional level to the analyses and further addresses the question of availability. In the current study, child care quality was examined at the program level rather than classroom level due to the nature of these data. Examining differentiation in quality for infants, toddlers, and preschoolers based on program characteristics and community context would provide the possibility of unique effects based on children's ages. Despite the limitations of the current study, the results yielded convincing evidence that there is more that North Carolina needs to do to ensure all children are receiving equitable care and education that is developmentally beneficial during their most malleable years of life.

Policy Recommendations

Tiered quality rating and improvement systems are designed to inform families as well as to promote quality improvement among early care and education programs. In North Carolina, minimal standards (0-3 total points or 1 star) require that programs meet basic health and safety requirements that the state deems important for all children. However, in a system where

programs voluntarily operate under different standards (0-15 points or 1-5 stars) children's experiences, as well as the choices of families, differ dramatically. The current study suggests this differentiation in program quality for children and families is not random; quality does vary by community context. State and federal funding, in more disadvantaged communities, does not always buffer the negative effect of community context on program quality. We believe that the current study provides evidence that more affluent families are the clear winners in such a system.

In a system honoring "parental choice," there must be evidence that there is sufficient supply for choices to be made. There is no question that North Carolina is a leader in the nation in child care policy with one of the first TQRISs, legislation that requires basic health and safety in licensed programs, rewards for meeting higher standards such as higher subsidy rates, restricting subsidy to only programs at or above 3-stars, and coordinated quality enhancement efforts. However, when given the opportunity to enroll children in programs that only meet basic health and safety requirements compared to programs that are offering enhanced learning environments, it would seem that all families would choose more optimal learning environments given equal availability and access. With availability restricted in some communities coupled with the barrier of affordability, choices for some families become limited.

The popular press recently exposed the growing gap between the outcomes of children from affluent families and their middle- and lower-class counterparts (Reardon, 2013) while another story exposed the "Hell of American Child Care," critiquing the low state and national standards required for operation (Cohn, 2013). For TQRISs to be positive change agents in the early care and education system, we must ensure our efforts yield the most promising developmental outcomes for all children. Over the last decade as star-ratings in North Carolina

have increased, we have learned that TQRIS policies can support higher-quality early care and education through teacher education, reduced ratios, and quality enhancement initiatives. However, the current study indicates there is inequitable availability of high-quality programs based on community-level socioeconomics and program-level characteristics. While past research suggests children in and near poverty and children of color are the least likely to be in high-quality early care and education settings, the current study found this may be because the highest-quality programs are least likely to be located in the communities in which these children reside.

The results clearly show that funding variables can mitigate low levels of concentrated affluence (for child care centers) and high levels of concentrated disadvantage (especially for family child care homes) promoting higher quality early care and education. Given that a TQRIS allows for variation in quality, we must ensure access is not restricted based on socioeconomic characteristics of a community, and that funding is distributed such that all programs have an equal opportunity to reach the highest standards of the TQRIS. Through these mechanisms, the ratings from the TQRIS can live up to the intended goal — that *all* children in early care and education have experiences that promote their optimal development.

References

Adams, G., & Rohacek, M. (2002). More than a work support? Issues around integrating child development goals into the child care subsidy system. *Early Childhood Research Quarterly, 17*, 418-440. doi:10.1016/S0885-2006(02)00184-9.

Burnstien, N., & Layzer, J. I. (2007). *National study of child care for low-income families: Patterns of child care use among low-income families.* Retrieved from http://archive.acf.hhs.gov/programs/opre/cc/nsc_low_income/reports/patterns_cc_exsum/patterns_cc_execsum.pdf

Cassidy, D. J., Lower, J. K., Kintner, V. L., & Hestenes, L. L. (2009). Teacher ethnicity and variation in context: The implications for classroom quality. *Early Education and Development, 20,* 305-320. doi:10.1080/10409280802581268.

Caughy, M. O., DiPietro, J. A., & Strobino, D. M. (1994). Day-care participation as a protective factor in the cognitive development of low-income children. *Child Development*, *65*, 457-471. doi:10.1111/j.1467-8624.1994.tb00763.x.

Cohn, J. (2013) *The hell of American day care: An investigation into the barely regulated, unsafe business of looking after our children*. Retrieved from http://www.newrepublic.com/article/112892/hell-american-day-care.

Connell, C. M., & Prinz, R. J. (2002). The impact of childcare and parent-child interactions on school readiness and social skills development for low-income African American children. *Journal of School Psychology, 40*, 177-193. doi:10.1016/S0022-4405(02)00090-0.

Dowsett, C. J., Huston, A. C., Imes, A. E., & Gennetian, L. (2008). Structural and process features in three types of child care for children from high and low income families. *Early Childhood Research Quarterly, 23*(1), 69-93. doi: 10.1016/j.ecresq.2007.06.003.

Fuller, B., Kagan, S. L, Caspary, G. L., & Gauthier, C. A. (2002). Welfare reform and child care options for low-income families. *The Future of Children, 12*, 97-119.

Gable, S. (2013). *The states of child care: Building a better system*. New York, NY: Teachers College Press.

Gordon, R., & Chase-Lansdale, L. (2001). Availability in child care in the United States: A description and analysis of data sources. *Demography, 38*, 299-316. doi:10.1353/dem.2001.0016.

Greenberg, J. P., & Kahn, J. M. (2011). The influence of immigration status on early childhood education and care enrollment. *Journal of Early Childhood Research, 9,* 20-35. doi: 10.1177/1476718X10366618.

Helburn, S. W., & Bergmann, B. R. (2002). *America's childcare problem*. New York, NY: Palgrave.

Helburn, S. W., & Howes, C. (1996). Child care cost and quality. *The Future of Children, 6,* 62-82. doi:10.2307/1602419.

Herbst, C. (2013). *Obama's early education proposals leave federal efforts fragmented and incoherent.* Retrieved from http://www.brookings.edu/blogs/brown-center-chalkboard/posts/2013/05/08-obama-prek-budget-herbst.

Herbst, C. M., & Barnow, B. S. (2008). Close to home: A simultaneous equations model of the relationship between child care accessibility and female labor force participation. *Journal of Family and Economic Issues, 29,* 128–151. doi:10.1007/s10834-007-9092-5.

Howes, C., Sakai, L. M., Shinn, M., Phillips, D., Galinsky, E., & Whitebook, M. (1995). Race, social class, and maternal working conditions as influences on children's development. *Journal of Applied Developmental Psychology, 16*, 107-124. doi:10.1016/0193-3973(95)90019-5.

Kim, J., & Fram, M. S. (2009). Profiles of choice: Parents' patterns of priority in child care decision-making. *Early Childhood Research Quarterly, 24*, 77-91. doi:10.1016/j.ecresq.2008.10.001.

Kontos, S., Howes, C., Shinn, M., & Galinsky, E. (1997). Children's experiences in family child care and relative care as a function of family income and ethnicity. *Merrill-Palmer Quarterly, 43*, 386-403. doi: 0272-930X.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in U.S. schools. *Educational Researcher*, *35*, 3-12. doi:10.3102/0013189X035007003.

Lauen, D. L. (2007). Contextual explanations of school choice. *Sociology of Education, 80,* 179-209. http://www.jstor.org/stable/20452706.

Leventhal, T., Xue, Y., & Brooks-Dunn, J. (2006). Immigrant differences in school-age children's verbal trajectories: A look at four racial/ethnic groups. *Child Development, 77, 1359-1374. doi: 0009-3920/2006/7701-0018*

Lloyd, J. E. V., & Hertzman, C. (2010). How neighborhoods matter for rural and urban children's language and cognitive development at kindergarten and grade 4. *Journal of Community Psychology, 38,* 293-313. doi: 10.1002/jcop.20365.

Love, J.M., Kisker, E.E., Ross, C., Raikes, H., Constantine, J., Boller, K., ... Vogel, C. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons

for policy and programs. *Developmental Psychology, 41,* 885-901. doi: 10.1037/0012-1649.41.6.885.

Magnuson, K., Meyers, M., Ruhm, C., & Waldfogel, J. (2004). Inequality in preschool education and school readiness. *American Educational Research Journal, 41*, 115-157. doi:10.3102/00028312041001115

National Center for Children in Poverty. (2010). *North Carolina demographics of young, low income children*. Retrieved from http://www.nccp.org/profiles/NC_profile_8.html.

National Women's Law Center. (2008). *New census data show that low-income families need help paying for child care.* Retrieved from http://www.nwlc.org/analysis-new-2010-census-poverty-data-%E2%80%93-september-2011.

Nelder, J.A. (1977). A reformulation of linear models. With discussion. *Journal of the Royal Statistical Society, 140*, 48-77. http://www.jstor.org/stable/2344517

North Carolina Division of Child Development. (2011). *Child care statistical report.* Retrieved from http://ncchildcare.nc.gov/general/Child_Care_Statistical_Report.asp.

North Carolina Governors Office of Latino/Hispanic Affairs. (2013). *Hispanic/Latino demographic report*. Retrieved from http://www.ncdhhs.gov/mhddsas/providers/DWI/hispanic-latinodemographicsreport.pdf

Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental trajectories through second grade. *Child Development, 72,* 1534-1553. doi:10.1111/1467-8624.00364

Peisner-Feinberg, E. S., & Schaaf, J. M. (2010). *Long-term effects of the North Carolina More at Four pre-kindergarten program: Children's reading and math skills at third grade.* Retrieved from http://projects.fpg.unc.edu/~mafeval/pdfs/EOG_report_11-2-10.pdf.

Peyton, V., Jacobs, A., O'Brien, M., & Roy, C. (2001). Reasons for choosing child care: Associations with family factors, quality, and satisfaction. *Early Childhood Research Quarterly, 16*, 191-208. doi:10.1016/S0885-2006(01)00098-9

Queralt, M., & Witte, A. D. (1998). Influences on neighborhood supply of child care in Massachusetts. *Social Service Review, 72*, 17-46. doi:10.1086/515744

Raftery, A.E. (1995). Bayesian model selection in social research (with discussion). *Sociological Methodology*, *25*, 111-196. http://www.jstor.org/stable/271063

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.

Raudenbush, S., Bryk, A. S., & Congdon, R. (2004). *Hierarchical linear and nonlinear modeling with HLM/2L and HLM/3L programs.* Chicago, IL: Scientific Software.

Reardon, S. F. (2013). The widening income achievement gap between the rich and the poor: New evidence and possible explanations. In R. Murnane & G. Duncan (Eds). *Whither opportunity? Rising inequality and the uncertain life chances of low-income children.* New York, NY: Russell Sage Foundation Press.

Sampson, R. J., Morenoff, J. D., & Earls, F. (1999). Beyond social capital: Spatial dynamics of collective efficacy for children. *American Sociological Review, 64*, 633-660. doi:10.2307/2657367.

Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": Social processes and new directions in research. *Annual Review of Sociology, 28,* 442–478. doi: 10.1146/annurev.soc.28.110601.141114.

Sampson, R. J., Sharkey, P., & Raudenbush, S. W. (2008). Durable effects of concentrated disadvantage on verbal ability among African-American children. *Proceedings of the National Academy of Sciences, 105,* 845-852. doi: 10.1073/pnas.0710189104.

Schwarz, G. E. (1978). Estimating the dimension of a model. *Annals of Statistics*, *6*, 461-464. doi:10.1214/aos/1176344136

Shlay, A. B., Tran, H., Weinraub, M., & Harmon, M. (2005). Teasing apart the child care conundrum: A factorial survey analysis of perceptions of child care quality, fair market price and willingness to pay by low-income, African American parents. *Early Childhood Research Quarterly. 20*, 393-416. doi:10.1016/j.ecresq.2005.10.002

Spybrook, J., Raudenbush, S.W., Congdon, R., & Martínez, A. (2011). *Optimal design for longitudinal and multilevel research: Documentation for the "Optimal Design" software* [Optimal Design version 2.01, Revision April 25, 2011]. Retrieved from http://www.wtgrantfoundation.org/File%20Library/Resources/Revised-OD-Documentation.pdf.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). New York, NY: Allyn and Bacon.

The White House, Office of the Press Secretary (2013). *Fact sheet. President Obama's plan for early education for all Americans* [Press release]. Retrieved from http://www.whitehouse.gov/the-press-office/2013/02/13/fact-sheet-president-obama-s-plan-early-education-all-americans.

Turney, K., & Harknett, K. (2010). Neighborhood disadvantage, residential stability, and perceptions of instrumental support among new mothers. *Journal of Family Issues, 31,* 499-524. doi: 10.1177/0192513X09347992.

U.S. Census Bureau (2007). *Census 2000 summary file 3* (SF 3). Retrieved from http://factfinder.census.gov/servlet/MetadataBrowserServlet?type=dataset&id=DEC_2000_SF3_U&_lang=en.

U.S. Department of Health & Human Services Administration on Children & Families (2000). *FACES findings: New research on Head Start outcomes and program quality.* Washington, DC: U.S. Department of Health and Human Services. Retrieved from http://www.acf.hhs.gov/sites/default/files/opre/facesfindings.pdf.

U.S. Department of Health & Human Services Administration for Children & Families (2010a). *Child Care and Development Fund fact sheet.* Retrieved from http://www.acf.hhs.gov/programs/ccb/ccdf/factsheet.pdf.

U.S. Department of Health & Human Services Administration for Children & Families (2010b). *Head Start Impact Study final report.* Retrieved from http://www.acf.hhs.gov/programs/opre/hs/impact_study/reports/impact_study/executive_summary_final.pdf

U.S. Department of Health & Human Services Administration for Children & Families (2013). *Child Care and Development Fund Program.* Retrieved from http://www.regulations.gov/#!documentDetail;D=ACF-2013-0001-0001.

Wight, V. R., & Chau, M. (2009). *Basic facts about low income children, 2008*. Retrieved from http://www.nccp.org/publications/pdf/text_892.pdf.

Wrigley, J. (1991). Different care for different kids: Social class and child care policy. In L. Weis, P.G. Altbach, G.P. Kelly, & H.G. Petrie (Eds.), *Critical perspectives on early childhood education* (pp.189-209). Albany, NY: State University of New York Press.

Figure 1. *Distribution of Star levels across program type.*