Original Research

The influence of Georgia's Quality Rated system on school readiness in preschool children

Radhika B. Patel, BS[1] and Nancy C. Webb, PhD[2]

[1]Medical College of Georgia, Augusta University, Augusta, GA and [2]Institute of Public and Preventive Health, Augusta University, Augusta, GA

Corresponding Author: Nancy C. Webb • 1120 15th Street, CJ-2300, Augusta, GA • 706-721-9080 • nwebb@augusta.edu

ABSTRACT

Background: Initially launched in 2012, the Quality Rated (QR) program in Georgia is a policy tool for assessing, improving, and communicating the quality of early childhood education and care. Star level designations – zero-star, one-star, two-star, and three-star – are assigned based on a portfolio of QR standards and an onsite Environment Rating Scales observation. In the present study, we used QR data to determine if childcare quality measures (QR ratings) are linked with the readiness of children to enter kindergarten.

Methods: QR data were collected from one-star, two-star, and three-star childcare learning centers (n = 16) located within Child Care Resource and Referral Regions 3 and 5 in Georgia. The Bracken School Readiness Assessment – 3rd Edition (BSRA-3) was administered to each child (n =318) eligible for inclusion. Height and weight information (n =335) was collected before assessment. Multilevel analyses were used to establish whether children in programs that score higher on QR (0 to 3 stars) show better school readiness (i.e., by BSRA-3 assessment or body mass index) than peers in programs with lower scores.

Results: For the children, there were no significant differences in scores of school readiness based on the QR of childcare and learning centers.

Conclusions: The results reinforce the need for continued research of the childcare QR system in Georgia to inform stakeholders in early childcare and education about ways to enhance the quality of early child care and to improve the long-term educational and health outcomes of children across the state. Future studies should examine a larger sample size, which would allow for more precise, multilevel analyses.

Key Words: quality childcare, school readiness, childcare centers, child development

Statement of Student-Mentor Relationship: The lead author for this report, Radhika B. Patel, a medical student, participated in the Summer Public Health Scholars Program in the Institute of Public & Preventive Health at Augusta University. Dr. Nancy C. Webb, the senior author, served as her mentor.

INTRODUCTION

The preschool years are a time of durable impact on the educational trajectory; extensive childcare research links quality childcare to positive cognitive and social developmental outcomes (Burchinal et al., 2000; Mashburn et al., 2008; NICHD, 2000). Longitudinal studies have demonstrated that these developmental effects are long-term (Peisner-Feinberg et al., 2001; Vandell, Belsky, Burchinal, Steinberg, & Vandergrift, 2010), with stronger effects on childcare quality for children from economically disadvantaged families (Dearing, McCartney, & Taylor, 2009; Hillemeier, Morgan, Farkas, & Maczuga, 2013; McCartney, Dearing, Taylor, & Bub, 2007). Understanding which features of childcare programs influence school readiness is therefore appropriate for guiding interventions in these settings.

The recent expansion of early childcare centers and publicly funded preschool programs, coupled with increases in enrollment, has been followed by the establishment of state-specific

Quality Rating (QR) systems focused on regulating the design and quality of these programs (Boller et al., 2015; Kirby, Caronongan, Malone, & Boller, 2015; Lahti, Elicker, Zellman, & Fiene, 2015). In Georgia, Bright from the Start: Georgia Department of Early Care and Learning (DECAL) offers Quality Rated (QR), a system for quality rating and improvement of child care programs. Initially launched in 2012, QR is a tool for assessing, improving, and communicating the quality of early childhood education and care ([DECAL], 2016). Star level designations – zero-star, one-star, two-star, and three-star – are assigned based on a portfolio of QR standards and an onsite Environment Rating Scales observation.

At present, 938 early childcare programs in Georgia have been quality rated; by the end of 2017, DECAL hopes to have all eligible childcare programs participating in QR (Webb & Gates, 2016). For childcare research to guide policy changes in program development, policymakers should be aware of whether quality control systems affect child development. In the present study, QR data were used to determine if childcare quality measures (QR ratings) are linked with readiness of children to enter kindergarten. The question was: How does the QR star rating of a childcare center relate to the school readiness of children attending that center? We anticipated that cross-sectional analyses would demonstrate that children in programs that score higher on QR (0 to 3 stars) would show better school readiness (e.g., assessed by the Bracken School Readiness Assessment) than peers in programs with lower scores.

METHODS

Institutional Review Board Approval
The Augusta University Institutional Review Board (IRB) approved this research study for exemption from review.

Design Overview and Setting
The goals were two-fold: 1) to determine which aspects of QR relate to outcomes for children and 2) to use this information to guide future interventions for improving the quality of childcare centers.

This study took place at childcare centers that were recruited from Child Care Resource and Referral Regions 3 and 5. These regions serve all

Central Savannah River Area counties in Georgia (Richmond, McDuffie, Columbia, Taliaferro, Warren, Jenkins, Burke, Hancock, Glascock, Washington, Jefferson, and Screven), except for Wilkes and Lincoln counties, which are in Region 6. Additionally, eligible centers were participating in QR at the time of the study, had a QR star rating before September 30, 2014 (the current study commenced in November 2014), and did not prohibit sharing of QR data relating to their center.

To collect data, the research team worked with DECAL, and the legal departments at Augusta University and at DECAL established an agreement between the two entities. DECAL provided information regarding level indicators of childcare programs, including the following categories:

1. Program and class level scores for each child care center in Child Care Resource and Referral Regions 3 and 5 that was participating in QR at the time of the study, was rated before September 30, 2014, and did not prohibit information sharing.
2. Program address, capacity, classroom enrollment information, demographics, subsidies, and accreditations.
3. Program portfolio information, such as summary scores for each standard; quantitative responses for the self-assessment at the item level for Standards 2 and 3; and final portfolio score.
4. Information from the Early Childhood Environment Rating Scale – Revised (ECERS-R), including overall score, subscale scores, and item level responses.

Recruitment and Assessment
Each childcare program received a letter inviting them to participate; it included information regarding the rationale and specific aims of the study, a brief description of the assessment process and measures, and a statement informing them of the ability to opt out of the study with no penalty. In addition to receiving a letter, the directors of child care programs also received a phone call outlining the study as described above. For childcare programs that expressed interest in participation but did not immediately commit, a follow-up meeting was scheduled to discuss the study in person. After childcare centers agreed to participate, a testing date was arranged to conduct health screenings and administer the Bracken School Readiness Assessments – 3rd edition (BSRA – 3). As

compensation for their participation, childcare centers were offered a $100 gift card from Wal-Mart, Target, or VISA. Programs that chose not to participate were not included in the data analysis.

Children were recruited from QR childcare centers that provided informed consent to participate in the study. Those eligible for participation were required to have parental consent and to be three to five years of age. The parental consent process was similar to that described above; a letter was sent to parents of potentially eligible children with an explanation of the goals of the study, a brief description of the assessment process and measures, and a statement informing them of the ability to opt out of the study with no penalty. For each child participating, height and weight information was collected for body mass index calculations. The BSRA-3 was administered to each child individually in a quiet testing environment at the childcare center. The children who did not pass a brief, two-step color blindness screening test were not administered the colors subtest of the BSRA-3. All data were de-identified.

Study Sample
Participants were recruited from sixteen childcare centers in Georgia with one star (n= 3), two star (n= 7), or three star (n= 6) QR ratings.

QR Star Designation
To receive a QR star rating, childcare centers must submit a structural quality portfolio indicating that their childcare program meets QR standards above the minimum licensing requirements in Georgia. The portfolio consists of five QR standards relating to: (a) director and teacher qualifications; (b) child health, nutrition, and physical activity; (c) family engagement; (d) intentional teaching practices; and (e) teacher-to-student ratio requirements ([DECAL], 2016). Within 90 days after the portfolio has been accepted, an unannounced environment rating scales observation (ERS) of the childcare center is conducted by DECAL. Points are awarded according to the information gathered from the portfolio and average ERS score. Additionally, bonus points can be given for specific national accreditations.

Once points are determined for each center, DECAL assigns a zero-, one-, two- or three-star rating. One-star (15-24 points) QR programs implement few QR standards and have average ECERS-R scores. Two-star (25-35 points) programs implement multiple QR standards and have above average ECERS-R scores. Three-star (36-45 points) programs implement most QR standards and have ECERS-R scores well above average ([DECAL], 2016).

Measures
Bracken School Readiness Assessment – 3rd edition (BSRA -3) – is a widely accepted, valid, and reliable tool for predicting school readiness among children 3-6 years of age. It consists of a 15-minute assessment with 85 items that test five school readiness domains: color, letters, numbers/counting ability, sizes/comparisons, and shapes. The BSRA-3 has a receptive language item format that requires children to provide only a pointing response, thereby minimizing differences in communication. Mastery of these concepts prior to entering school contributes to school success of children (Heckman, 2000). Raw scores and percent mastery scores for each of the five subtests are used to calculate a Receptive School Readiness Composite (Receptive – SRC) raw score and total percent mastery score. SRC raw scores are then used to generate standard scores and percentile ranks that are norm-referenced and allow the performance of children to be compared to that of other children of the same age across the country or in a specific locality. SRC standard scores range from 40 to 160, with a mean of 100 and a standard deviation of 15; scores between 85-115 indicate average development, scores above 115 indicate advanced development, and scores below 85 indicate delayed development. Percentile rankings range from 0 to 100, with a mean of 50; however, percentile ranks are not distributed in equal intervals but instead cluster around the mean. Score reports also provide classifications (very advanced, advanced, average, delayed, very delayed) that describe the performance of children based on development and exposure to learning opportunities prior to testing (Bracken, 2007).
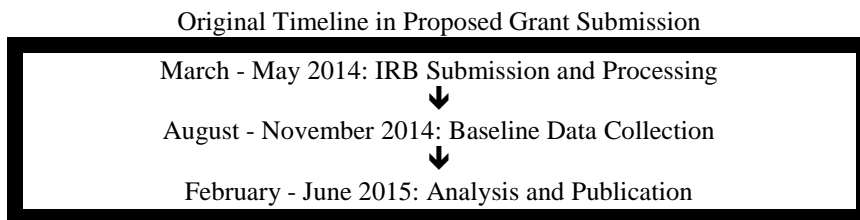
Statistical Analyses
Descriptive statistics and standard deviations on body mass index, age, and BSRA-3 composite scores were calculated for the whole sample and separately according to QR star ratings of participating childcare centers. Multilevel analyses were conducted to measure the association between childcare level predictors—i.e., QR star rating—and developmental outcome (BSRA-3) measures of school readiness. All analyses were accomplished with SAS Version

9.4 (Statistical Analysis Software Institute, Cary, NC).

Preliminary Research Timeline

The initial timeline, shown below, was developed as the grant proposal was written. Due to the difficulty of receiving approval from the state agencies involved (i.e., Augusta University and DECAL), the time was pushed forward substantially.

Original Timeline in Proposed Grant Submission

March - May 2014: IRB Submission and Processing
⬇
August - November 2014: Baseline Data Collection
⬇
February - June 2015: Analysis and Publication

RESULTS

The mean age of the participating children (n = 335) was 4.3 (SD = 0.79). The mean (M) BSRA SRC standard scores and standard deviations (SD) of participants from one-star, two-star, and three-star QR childcare centers were M=94.89, SD=14.95; M=100.99, SD = 17.17; and M= 100.43, SD =14.35, respectively.

Although children in childcare learning centers at the one-star level performed less well than children in two-star and three-star centers, multilevel analyses revealed no significant association between childcare quality ratings (QR stars) and school readiness measures (BRSA-3). The research team is in the process of calculating BMI results.

DISCUSSION AND FUTURE DIRECTION

The lack of substantial evidence demonstrating a link between QR childcare ratings and school readiness outcomes for children can be understood through consideration of the study limitations. First, the sample size and distribution of childcare centers may have been too small to reveal differences experienced by children attending childcare centers with varying QR ratings. A larger sample size would allow for more precise and multilevel analyses, which could identify QR measures that influence child outcomes. Second, delays in data sharing between DECAL and Augusta University presented an unanticipated challenge that limited attainment of the goals. Due to these delays, the research team had a shortened timeline to collect data, which in turn, resulted in a smaller sample size.

Future studies should ensure that legal agreements between state entities are upheld in a timely manner and that the data collection process is not delayed. An additional consideration warranting further investigation is whether quality predictors are sufficiently aligned with outcome measures. Recent evidence from validation efforts in other states relating to the quality rating and improvement system (QRIS) highlights the importance of examining the validity of QRIS to determine if quality methods and measures allow accurate quality assessments (Boller et al., 2015; Lahti et al., 2015). Assessing the validity of QR may improve the accuracy and efficiency of the rating system to match school readiness outcomes and thereby to guide interventions and support targeted toward childcare centers that require the most improvement.

The QR early childcare programs in Georgia can be used to address prevalent health disparities across counties in Georgia, especially in rural areas. Non-rural counties in Georgia perform better on health outcome measures (e.g., fewer low-birth-weight infants, lower child mortality rates, lower teenage pregnancy rates, and higher college attendance rates) than rural counties, and the number of QR childcare programs in a county is significantly associated with college attendance (Webb & Gates, 2016). Therefore, QR childcare programs may serve as a tool for helping rural counties address the disparities in social determinants of health that their communities face.

In conclusion, the results of this study reinforce the need for continued research of the childcare QR system in Georgia to inform stakeholders in early childcare and education on ways to

enhance the quality of early childcare and to improve the long-term educational and health outcomes of children across the state.

References

Bright from the Start: Georgia Department of Early Care and Learning (2016). Quality Rated Child Care Program Manual: Lasting Effects for Georgia's Children, Families and Economy. Retrieved from https://qualityrated.decal.ga.gov/Content/Documents/PM_ProgramManual.pdf

Boller, K., Paulsell, D., Del Grosso, P., Blair, R., Lundquist, E., Kassow, D. Z., . . . Raikes, A. (2015). Impacts of a child care quality rating and improvement system on child care quality. *Early Child Res Q, 30*, 306-315.

Bracken, B. A. (2007). *Bracken School Readiness Assessment Examiner's Manual* (3 ed.). San Antonio, Texas: Pearson.

Burchinal, M. R., Roberts, J. E., Riggin, R., Jr., Zeisel, S. A., Neebe, E., & Bryant, D. (2000). Relating quality of center-based child care to early cognitive and language development longitudinally. *Child Dev, 71*(2), 339-357.

Dearing, E., McCartney, K., & Taylor, B. A. (2009). Does higher quality early child care promote low-income children's math and reading achievement in middle childhood? *Child Dev, 80*(5), 1329-1349. doi:10.1111/j.1467-8624.2009.01336.x

Heckman, J. (2000). Policies to foster human capital. Research in Economics, 54: 3 – 56.

Hillemeier, M. M., Morgan, P. L., Farkas, G., & Maczuga, S. A. (2013). Quality disparities in child care for at-risk children: comparing Head Start and non-Head Start settings. *Matern Child Health J, 17*(1), 180-188. doi:10.1007/s10995-012-0961-7

Kirby, G., Caronongan, P., Malone, L. M., & Boller, K. (2015). What do quality rating levels mean? Examining the implementation of QRIS ratings to inform validation. *Early Child Res Q, 30*, 291-305.

Lahti, M., Elicker, J., Zellman, G., & Fiene, R. (2015). Approaches to validating child care quality rating and improvement systems (QRIS): Results from two states with similar QRIS type designs. *Early Child Res Q,, 30*, 280-290.

Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., . . . Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Dev, 79*(3), 732-749. doi:10.1111/j.1467-8624.2008.01154.x

McCartney, K., Dearing, E., Taylor, B. A., & Bub, K. L. (2007). Quality Child Care Supports the Achievement of Low-Income Children: Direct and Indirect Pathways Through Caregiving and the Home Environment. *J Appl Dev Psychol, 28*(5-6), 411-426. doi:10.1016/j.appdev.2007.06.010

NICHD. (2000). The relation of child care to cognitive and language development. National Institute of Child Health and Human Development Early Child Care Research Network. *Child Dev, 71*(4), 960-980.

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 Dev, 72*(5), 1534-1553.

Vandell, D. L., Belsky, J., Burchinal, M., Steinberg, L., & Vandergrift, N. (2010). Do effects of early child care extend to age 15 years? Results from the NICHD study of early child care and youth development. *Child Dev, 81*(3), 737-756. doi:10.1111/j.1467-8624.2010.01431.x

Webb, N. C., & Gates, M. L. (2016). Quality Rated childcare programs and social determinants of health in rural and non-rural Georgia. *J Ga Public Health Assoc, 5*(4), 397-404. doi:10.21663/jgpha.5.413