Levels of Quality and Children's Development Across Multiple Data Sets and Multiple Special Populations: Are Thresholds the Same?

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Project Description

The ***overall goal*** of this project is to identify thresholds of early childhood education quality in predicting social-emotional, cognitive, and language outcomes to inform national and state policies that promote optimal child development through early childhood education and child care settings. The project's ***primary objectives*** are to: (1) compare different analytic strategies for identifying thresholds of quality; (2) replicate the analytic strategy with multiple national and state data sets to determine if thresholds are similar or different across data sets and to examine convergent findings across data sets; and (3) examine subgroup differences to determine whether minimum levels of quality necessary to promote positive development differ based on family resources (e.g., family income, parent education); child characteristics (child sex, age); child minority status and cultural background (child language, race, ethnicity); or program context (geographic setting/program auspice).

Research Questions

1. What are thresholds of quality associated with promoting positive child development and with preventing negative developmental outcomes?
2. Do thresholds of quality vary by child/family vulnerability?
3. Do thresholds of quality vary by child characteristics?
4. Do thresholds of quality vary by program context?
5. Do results converge across national and state data sets?

Sample

This project will rely on the following studies and/or extant data sources for all analyses: (1) Early Head Start Research and Evaluation Project (EHSREP); (2) Quality Interventions in Early Care and Education (QUINCE); (3) The Early Head Start Family and Child Experiences Survey (Baby FACES); (4) the Multi-State Study of Prekindergarten and Study of Statewide Early Education Programs (SWEEP); (5) Educare Learning Network (Educare); (6) Nebraska Student and Staff Record System (NSSRS); and (7) Early Childhood Longitudinal Study, Birth Cohort (ECLS-B). In combination, these datasets provide a diverse sample of children from birth through age 5. In addition, a number of quality measures (e.g., ITERS, ECERS, FDCRS, CIS) are included along with various measures of multiple child outcomes (e.g., language, socio-emotional/behavior). The sample also includes children from home and center based care.

Methods

To address each objective of this project, non-parametric statistical approaches will be used to (1) identify the nature of the relationship (i.e., linear vs. nonlinear) between quality variables and child outcomes and (2) explore differences in this relationship amongst the various subgroups described above. The non-parametric analyses will be validated through the use of parametric modeling techniques. Specifically, this study will incorporate two complementary yet distinct non-parametric statistical methods. Generalized Additive Mixed Modeling will be implemented to account for the nested structure (children within childcare setting) many of the data sets offer. Multivariate Adaptive Regression Splines provide a means for efficiently examining a large number

of variables and determining the existence of key interaction effects (i.e., moderators or sub-group differences in the relationship between quality and outcomes).

Progress Update

The research team is in the process of obtaining IRB approval for the project to proceed. The research team is also gathering the datasets to be stored in a central location for all analyses to be conducted.

Implications for policy/practice

The proposed project has ***significance at the local, state, and national policy level and current relevance to decision makers*** because information on quality thresholds is needed to inform Quality Rating and Improvement Systems (QRIS). As of 2015, 37 states used observational ratings in their QRIS, and there is much variation in how observational scores are used in QRIS to rate quality (e.g., three states require a minimum of 2.0 on the Environment Rating Scale, seven require 3.0, one requires 3.5, and one requires 3.75). The most commonly used minimum Environment Rating Score is the conventional 3.0 cutoff representing the lower end of the "minimum to good" range of quality (Child Trends, 2010). However, despite the widespread use of "cut points," there is little empirical evidence to guide states in making decisions about minimum thresholds. This project will create such information across Rating Scales (Harms, Clifford, & Cryer, 1998) and CLASS (Pianta, La Paro, & Hamre, 2004) assessments. Furthermore, little is known about thresholds of quality and variation by relevant subgroups of children, families, and programs. There are reasons to believe that levels of quality vary for different special populations, so implications of this variability as well as minimum levels of quality necessary to promote positive development need to be understood in order to guide policy and practice.

Implications for research

This project will make multiple contributions to the substantive and methodological literature. The various data sources will allow for a rigorous assessment of the relationship between quality of care and child outcomes. This will be an especially important contribution to the literature on this relationship for disadvantage populations of children. The methodological rigor of this project will contribute to the literature on the use of the chosen data analytic methods in the realm of early childhood education. The methodological innovation of this project lies in the use of the data analytic approaches in the present context. At the time of this writing, neither of the primary approaches (Generalized Additive Mixed Modeling or Multivariate Adaptive Regression Spline) has been used to model the relationship between quality of care and child outcomes.

For more information

http://cyfs.unl.edu/academies-bureaus/erep

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