





Child Development

From Descriptive to Predictive: Linking Early Childhood Developmental and Behavioral Screening Results With Educational Outcomes in Kindergarten

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Abstract

Objective

To assess the predictive value of a pediatric screening tool by linking 2 independent databases: an educational database that includes data from standardized academic assessments administered during kindergarten and a pediatric database that includes screening results.

Methods

A database that includes results of the Survey of Well-being of Young Children (SWYC) completed during pediatric visits were linked to an educational database that includes STAR Early Literacy examinations in kindergarten. Linear multilevel regression modeling was used to examine if screening results on the developmental and behavioral sections of the most recently completed SWYC form predicted trends in the percentile rank on the STAR exam over the school year, adjusting for potential confounders.

Results

Linking the 2 databases resulted in a sample of 586 children who were administered at least one SWYC evaluation between 24 and 48 months and completed at least one STAR Early Literacy examination in kindergarten. The sample represents a diverse population with 55% Hispanic children, 25% Non-Hispanic black children, and 91% of children receiving a subsidized lunch. After adjusting for confounders, children with a positive developmental or behavioral screen had significantly lower percentile ranks on the STAR exam.

Conclusions

Early developmental and behavioral screening results predicted performance on the STAR exam in kindergarten. Children with developmental and behavioral concerns may be less ready to enter kindergarten than peers without such concerns. These preliminary findings provide proof-of-principle of the potential utility of developmental screening tools in identifying children with reduced school readiness who may benefit from intervention prior to kindergarten.

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Data Sources

Kindergarten STAR Early Literacy examination data from 2015 to 2019 for the Providence Public School District in Providence, Rhode Island were obtained. The STAR Early Literacy exam measures both early literacy and early numeracy in a single assessment and is administered at the beginning, middle, and end of the school year. STAR data were linked to Rhode Island Department of Education data using a common identifier to obtain basic demographic information on the children in the sample.

...

Results

The final sample of 586 children represents a diverse population with approximately 55% Hispanic children and 25% Non-Hispanic black children (Table 1). The majority of children received a lunch subsidy (91%). The final sample of children with both STAR and SWYC data was demographically similar to children from the same school district who were missing SWYC information. The mean

STAR-PR scores for the sample of children at the beginning (23.1), middle (37.2), and end of the school year (45.3) ...

Discussion

In this preliminary examination, early developmental and behavioral screening results from pediatric settings predicted performance on the STAR Early Literacy exam in kindergarten. Children with developmental and behavioral concerns may be less ready to enter kindergarten than peers without such concerns, as exhibited by their lower exam scores at the start of the school year and the persistent gap in scores throughout the school year. These preliminary findings provide proof-of-principle of ...

Acknowledgments

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References (20)

RM Ghandour *et al.*

[Healthy and ready to learn: prevalence and correlates of school readiness among United States preschoolers](#)

Acad Pediatr (2021)

RC Sheldrick *et al.*

[Evidence-based milestones for surveillance of cognitive, language, and motor development](#)

Acad Pediatr (2013)

RC Sheldrick *et al.*

[The Preschool Pediatric Symptom Checklist \(PPSC\): development and initial validation of a new social/emotional screening instrument](#)

Acad Pediatr (2012)

BU Bayoglu *et al.*

[Can preschool developmental screening identify children at risk for school problems?](#)

Early Hum Dev (2007)

PG Williams *et al.*

School readiness

Pediatrics (2019)

The pediatricians role in optimizing school readiness

Pediatrics (2016)

RM Ghandour *et al.*

School readiness among U.S. children: development of a pilot measure

Child Indic Res (2019)

K Paschall *et al.*

Comparing the national outcome measure of healthy and ready to learn with other well-being and school readiness measures

Child Trends (2020)

J Squires *et al.*

Ages & Stages Questionnaires, Third Edition (ASQ-3): A Parent-Completed Child Monitoring System

(2009)

FP. Glascoe

Evidence-based approach to developmental and behavioural surveillance using parents' concerns

Child Care Health Dev (2000)

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Cited by (9)

Longitudinal Stability and Predictive Value of Socio/Emotional/Behavioral Screening in an Outpatient Pediatric Network

2025, Academic Pediatrics

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School Readiness Among United States Children: Results From the 2022 National Survey of Children's Health

2024, Academic Pediatrics

Citation Excerpt :

...Additional research is needed to better elucidate the specific risk and protective factors for school readiness within subpopulations of CSHCN, for example, those with developmental and behavioral conditions, and assess

the extent to which they are getting needed services both before and after school entry (eg, early intervention, Individualized Education Program). Findings from a recent analysis by Schlichting and colleagues²⁹ underscore the connection between the presence of early developmental and/or behavioral concerns and later academic performance. Future programmatic and research efforts could capitalize on developmental screenings commonly administered within the medical home model to identify children who may be less likely to be HRTL, providing referrals and care coordination (and monitoring) to ensure school success....

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Child social-emotional and behavioral problems and competencies contribute to changes in developmental functioning during Early Intervention

2024, Early Childhood Research Quarterly

Citation Excerpt :

...In a sample of children receiving Part C EI services, the prevalence of children with elevated SEB problems or low SEB competencies was 60% (Briggs-Gowan & Carter, 2007): a striking majority of the sample and approximately double the estimates observed in the general community. Furthermore, elevated SEB problems and delays in competencies are persistent and linked to later challenges with social development and early educational outcomes (Schlichting, Vivier, Berger, Parrillo, & Sheldrick, 2023). The high rates of SEB problems and delays in competencies among young children in EI, who are already receiving supportive and therapeutic services, suggest that SEB problems and competencies need to be addressed as part of EI services....

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Development and behavior screening of 4-year-old Brazilian children: prevalence and associated factors

2025, Journal of Tropical Pediatrics

Revisiting the Implications of a Wide or Narrow Fetal Cavum Septi Pellucidi

2024, Journal of Ultrasound in Medicine

Early Correlates of School Readiness Before and During the COVID-19 Pandemic Linking Health and School Data

2024, JAMA Pediatrics



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