



ECHO

Environmental influences
on Child Health Outcomes

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Study Summary

Caregiver-Reported Measures of Childhood Behavior May be Biased by the Demographic Traits of Caregivers and Children

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Who sponsored this study?

The Environmental influences on Child Health Outcomes (ECHO) Program, Office of the Director, National Institutes of Health supported this research.

Why was this study needed?

Behavior problems observed in a young child can provide information on that child's risk for certain developmental conditions and later mental health issues. A valid and unbiased measure of childhood behavior is critical for helping researchers and clinicians answer questions about the development of behavior problems in children from different backgrounds.

What were the study results?

Scores from the Child Behavior Checklist (CBCL) 1.5–5—a commonly used, caregiver-reported measure of internalizing (e.g., anxious) and externalizing (e.g., aggressive) behavior problems in children ages 1.5 to 5 years—may be biased by demographic factors such as the child's age or the caregiver's sex, education level, and primary language. Researchers found that caregiver responses for a number of questions on the CBCL were affected by caregiver or child demographic factors. The language (English vs. Spanish) the caregiver used to complete the survey contributed most to measurement bias, followed by their education level and sex. The child's age and race also influenced CBCL scores.

By determining the factors contributing to measurement bias, ECHO researchers identified a subset of questions on the CBCL that were less impacted by bias but still reliably captured childhood behavior problems.

Footnote: Results reported here are for a single study. Other or future studies may provide new information or different results. You should not make changes to your health without first consulting your healthcare professional.

What was the study's impact?

The results of this study highlight the need to carefully consider possible sources of bias when using caregiver-reported measures. This study was the first to use a large, diverse sample of families to examine how demographic factors influence the answers given for individual survey questions in the widely used CBCL. Developing surveys with less bias can help researchers and clinicians better measure and compare behavior problems across groups of children who differ in age and family background.

Who was involved?

The study included caregivers of 9,087 young children (ages 18 to 71 months) from 26 ECHO research sites across the United States.

What happened during the study?

The researchers used data from 26 ECHO research sites to evaluate how caregiver responses to the CBCL varied based on the characteristics (age, sex, race, bilingual status, and neurodevelopmental disorders) of the child and the characteristics (sex, education level, household income level, and depression diagnosis) of the caregiver. Researchers then selected the CBCL questions that showed the least amount of bias and compared how well this subset of questions worked for evaluating childhood behavior problems when compared to the full CBCL survey. Additionally, the researchers mapped the scores from the less biased question sets to the scores provided by the full item sets, allowing them to derive comparable scores to the original CBCL scale.

What happens next?

ECHO researchers plan to apply the newly identified subset of less biased CBCL survey questions, evaluating its reliability in identifying children with clinically significant behavior problems. The identification of question sets with little bias offers researchers and clinicians better alternatives for measuring and comparing behavior problems across groups of children who differ in age and family background.

Where can I learn more?

Access the full journal article, titled “Measurement Bias in Caregiver-Report of Early Childhood Behavior Problems across Demographic Factors in an ECHO-wide Diverse Sample,” in the [Journal of Child Psychology & Psychiatry Advances](#).

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