

Background

- Culturally representative standardized measures that assess early language skills are very limited for younger at-risk populations (i.e., preterm children below 3 years old).
- Standardized measures are normed on white mainstream children's communication development, and normative references usually under-represent Black American children's language differences.
- This limitation results in a higher probability of misdiagnosis, as receptive and expressive language may fail to account for black language norms

Research Aims/Hypothesis

Aim 1: Examine differences between the Communication and Symbolic Behavioral Scale (CSBS) subscale scores of very preterm Black children compared to very preterm White children at 24 months corrected age.

Hypothesis: There will be a relationship between scores and the race of the participants

Aim 2: Examine differences between the MacArthur–Bates Communicative Development Inventory (CDI) scores of very preterm Black children compared to very preterm White children 24 months corrected age.

Hypothesis: There will be a relationship between scores and the race of the participants.

Aim 3: Examine the relationship between the CSBS communication composite score for language stage of very preterm Black children compared to very preterm White children at 24 months corrected age to their overall scores on the MacArthur Child Development Inventory (CDI).

Hypothesis: The scores of the CSBS scores will correlate with CDI scores.

Aim 4: Examine potential influence of scorer race on the CSBS communication composite scores of very preterm Black and White children at ≤ 32 months gestational age on the CSBS.

Hypothesis: There will be a relationship between the race of the scorer and the cluster and composite scores of Black and White children.

Database

- The current projects use data from the Early Prediction Study (EPS) and the Early Development of NICU graduates' study (EDeN) at Cincinnati's Children Hospital.
- The EPS is a longitudinal multicenter study that aims to facilitate preventive early interventions for better outcomes of very preterm infants (VPT; ≤ 32 weeks gestational age) and explain the etiology of neurodevelopmental deficits.
- The EDeN study builds on the EPS study in seeking to identify the earliest predictors of speech, language, and pre-literacy deficits in the EPS cohort with the overarching goal of developing a robust prediction model to enable early identification of children at high risk for speech and language disorders.

Participants

- The participants are children born VPT (M= 29.02 weeks of gestation; SD=2.48) and their mothers who were recruited soon after birth from five Cincinnati neonatal intensive care units (NICUs).
- Exclusion criteria included infants with cyanotic heart disease, known chromosomal or congenital anomalies affecting the central nervous system, or infants hospitalized and mechanically ventilated past the 44-week period.
- Selection of all Black participants (N= ~16) from the existing sample of VPT infants and matched there to the White participants by gender, SES, weeks of gestation.



Methods

Communication and Symbolic Behavioral Scale (CSBS)

- The CSBS is administered as described in the instruction manual.
- All CSBS assessment sessions are video recorded per the manual, then independently scored by same or another trained researcher.
- Administrators and scorers are carefully trained to ensure that the CSBS is administered and scored correctly

MacArthur–Bates Communicative Development Inventory (CDI)

- Parents of the participants complete the CDI before or during the administration of the CSBS
- Scoring of CDI completed by trained researcher.

Data Analysis

Aim 1 and Aim 2:

Examining differences of scores of the CSBS and CDI

Statistical Analysis:

Step 1- Conduct a between subject t-test

Step 2- If score differences are present, examine item bias, 1) Conduct a differential item functioning (DIF) analysis; 2) Use the items identified statistically to conduct a logistic analysis of the items .

Aim 3:

Examining the relationship between CSBS and CDI

Statistical Analysis: Conduct a regression analysis

Aim 4:

Examining the Scorer Bias on the CSBS

Statistical Analysis: Conduct a General Linear Model to examine these differences.

Results/Discussion

Results and discussion s are yet to be determined. Data analysis is currently ongoing.