
# CHRD 2021: Abstract & Poster Submission Form

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**Research Category:**

○ Basic Science

◉ Clinical

○ Community Health / Policy

**What was your role in the project?**

☑ Design

☑ Perform Experiments

☑ Analyze Data

☑ Write Abstract

☐

**Presenter Status:**

◉ Undergraduate Students

○ Masters Student

○ PhD Student

○ Post-Doctoral Fellows

○ Residents

○ Non-Trainee

**Title**

A Systematic Review and Meta-Analysis of Language Abilities in Preschool Children with Critical Congenital Heart Disease


**Background**

While children with critical congenital heart disease (cCHD) are at risk for neurodevelopmental impairments, reviews on this topic have concentrated on motor, cognitive, or overall neurodevelopmental outcomes with little focus on language.

**Objective**

We conducted a systematic review to determine expressive and receptive language outcomes of preschool children with cCHD.

**Methods**

We searched electronic databases (MEDLINE, EMBASE, SCOPUS, Child Development and Adolescent Studies, ERIC, PsycINFO, and CINAHL) for studies published January 1990 - July 1, 2021. Included studies focused on children aged □5 years with cCHD requiring a complex cardiac procedure at age <1 year, where language ability was reported using standardized, validated tools assessing both expressive and receptive language outcomes. Data (study, patient and language characteristics and results) were independently extracted by two reviewers. Data were pooled when it was appropriate and individual study results provided the mean and standard deviation.

**Results**

Overall, 17 articles met inclusion criteria, with 13 focusing on children aged 2-5 years. Our meta-analysis found statistically significant language deficits in preschool children with cCHD including overall (standardized mean difference [SMD]: -0.46, 95 % CI: [-0.56, -0.35]), expressive (SMD: -0.45, 95 % CI: [-0.54, -0.37]) and receptive (SMD: -0.32, 95 % CI: [-0.40, -0.23]) language compared to normative data. Similar conclusions were reported from studies that reported outcomes as median scores. Sub-analysis showed that children with univentricular physiology had lower language scores than those with biventricular physiology.

**Conclusion**

This is the first systematic synthesis of language outcomes in preschool children with cCHD. Preschool children with cCHD have statistically significantly lower language outcomes compared to expected population norms. Healthcare professionals should screen children with cCHD early and often for language deficits and appropriately refer children for tailored supports.

# Authors

- For each author, please click "**[+] Add Item**" and provide the author's information

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