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## Language Skills of Children and Youth with Schizophrenia: A Meta-Analysis

Laura Griffith

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# Language Skills of Children and Youth with Schizophrenia

Laura Griffith & Jason C. Chow, Ph.D.  
Psychology, Virginia Commonwealth University

## Abstract

Schizophrenia is a severe psychological disorder that remains difficult to understand due to a variety of presentations. One commonality is the hope to find answers and possibly interventions and treatments by studying the prodromal phase of the disease. Cognitive deficits, including problems with language development, appear to be common among youths at clinical high risk (CHR) for or diagnosed with schizophrenia. The purpose of this meta-analysis was to examine the language skills of children with childhood-onset schizophrenia or children who are CHR. Articles relating to language skills of CHR and childhood-onset schizophrenia youths were collected and screened. Language means and standard deviations were coded, and effect sizes will be calculated. Random effects meta-analysis will be used to determine differences in language skill between CHR/childhood onset schizophrenia participants and healthy controls.

## Introduction

Schizophrenia patients often show deficits of language comprehension and structure (Salavera, Puyuelo, Antonanzas, & Teruel, 2013). Researchers also have examined the possibility of using language deficits to predict prognosis in childhood-onset schizophrenia and high-risk patients. Links have been found between increased activity in language areas of the brain and psychosis onset (Sabb et. al.) Overall, evidence suggests a potential connection between language deficits and the prognosis of children with and at risk for schizophrenia.

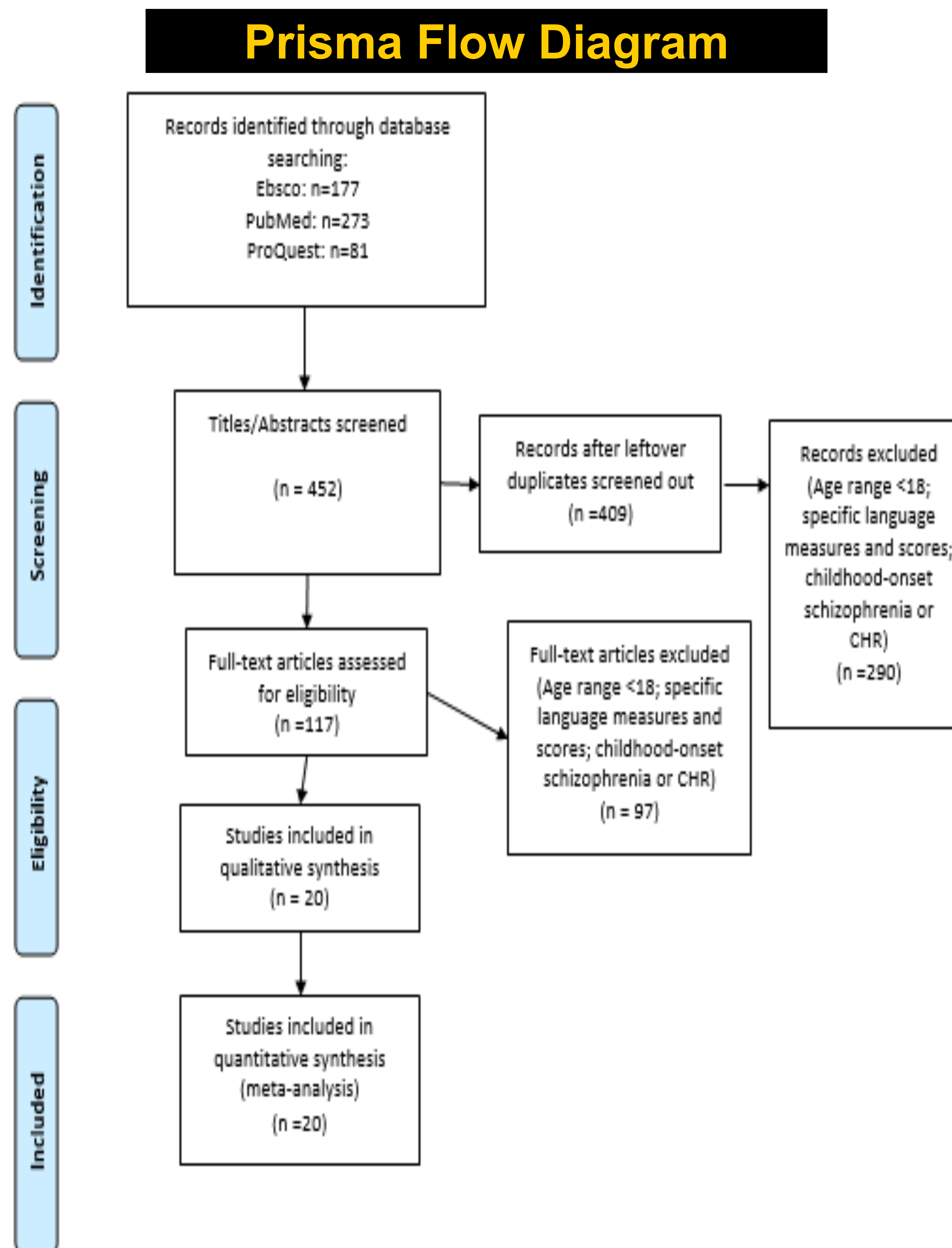
### Research Questions:

1. Are the language skills of childhood-onset schizophrenia or CHR participants significantly different than those of healthy controls?
2. Can differences in language skills be used as a predictor of outcome?

## Methodology

Quantitative studies reporting language skills of children under the age of 18 with schizophrenia or at clinical high risk were included. We excluded studies that examined children with comorbid disorders, such as autism spectrum disorders. Articles were obtained from an iterative search of PubMed, ProQuest Dissertations and Theses, and PsycINFO databases. The articles went through multiple screening cycles to remove any studies that did not fit the research question or that did not report the needed quantitative information. A coding manual was developed to extract the necessary information, and that data was entered into REDCap. 7 articles were double-coded to ensure consistency.

## Prisma Flow Diagram



## Next Steps

Next, we will use an effect size calculator to extrapolate effect sizes and variance from the means and standard deviations that have been coded. We will then use random effects meta-analysis to estimate the average language scores of children with schizophrenia and at clinical high risk. We will also apply robust-variance estimation to account for within-study dependency (Hedges, Tipton, & Johnson, 2010). The effect of language assessment type and child-level factors on language scores will also be examined.

## Discussion

Preliminary analyses suggest that language scores of childhood-onset schizophrenia and clinical high-risk patients are lower than those of healthy controls. The overall goal of this meta-analysis is to identify patterns of language skills in children with or at risk for schizophrenia, as well as any potential for language skills to predict prognosis. Identifying risk factors and early symptoms of schizophrenia is crucial for providing the best treatment possible. Also, understanding the cognitive symptoms that can occur in schizophrenia and risk patients can help mental healthcare professionals tailor treatments to patients for the best care possible.

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