

Do the Characteristics of Children who are Deaf/Hard of Hearing with Additional Disabilities Differ by Race/Ethnicity or Other Demographic Factors?

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Background

According to the American Speech Language and Hearing Association (ASHA), the prevalence of congenital hearing loss is 1 to 6/1000. Research reports that 40% of 0- to 3-year-old children with hearing loss have additional disabilities (Yoshinaga-Itano, Sedey, Coulter & Mehl, 1998). Yoshinaga-Itano et al. (2017) examined vocabulary outcomes and demographic variables of children with hearing loss between 8 to 36 months of age who met the Early Hearing Detection and Intervention (EHDI) 1-3-6 guidelines. Despite meeting the 1-3-6 guidelines, vocabulary quotients were significantly lower for children with additional disabilities over those with hearing loss alone. Moreover, the gap between chronological and developmental age widened as these children aged. Currently, there is limited research describing the characteristics of children who are deaf/hard of hearing and have additional challenges.

Purpose

The purpose of the current study is to analyze data from 13 states, using the NECAP database, to determine the proportion and demographic characteristics of children that are deaf and hard of hearing with additional disabilities. We classified children into two groups: Deaf/Hard of Hearing (DHH) and Deaf/Hard of Hearing plus an additional area of challenge (DHH+), based on parental report. Specifically, we looked across these two groups regarding degree of hearing loss, ethnicity and race, and maternal level of education.

NECAP Database Overview

The data used for this analysis was collected using the National Early Childhood Assessment Project (NECAP) database. There are more than 1500 children from 13 states in this database. The aim of NECAP is to support interested states in implementing a standard assessment battery for children from 6 months to 4 years of age who are deaf or hard of hearing.

All children from 6 months to 4 years of age with permanent hearing loss are eligible for inclusion in the NECAP database. Eligible children may have: unilateral or bilateral loss; conductive, sensorineural, or mixed hearing loss; any degree of permanent hearing loss from mild to profound; multiple disabilities or hearing loss only; and English or Spanish, as the primary language used in the home.

States Represented in the NECAP Database

Arizona
California
Florida
Idaho
Indiana
Maine
North Dakota
Oregon
Texas
Utah
Wisconsin
Wyoming

Table 1. States represented in NECAP according to Yoshinaga-Itano et al (2017). This does not include children in Colorado. It is estimated that Colorado performs 300 assessments per year (Yoshinaga-Itano, 2014).

Area of Secondary Concern (N=1551)

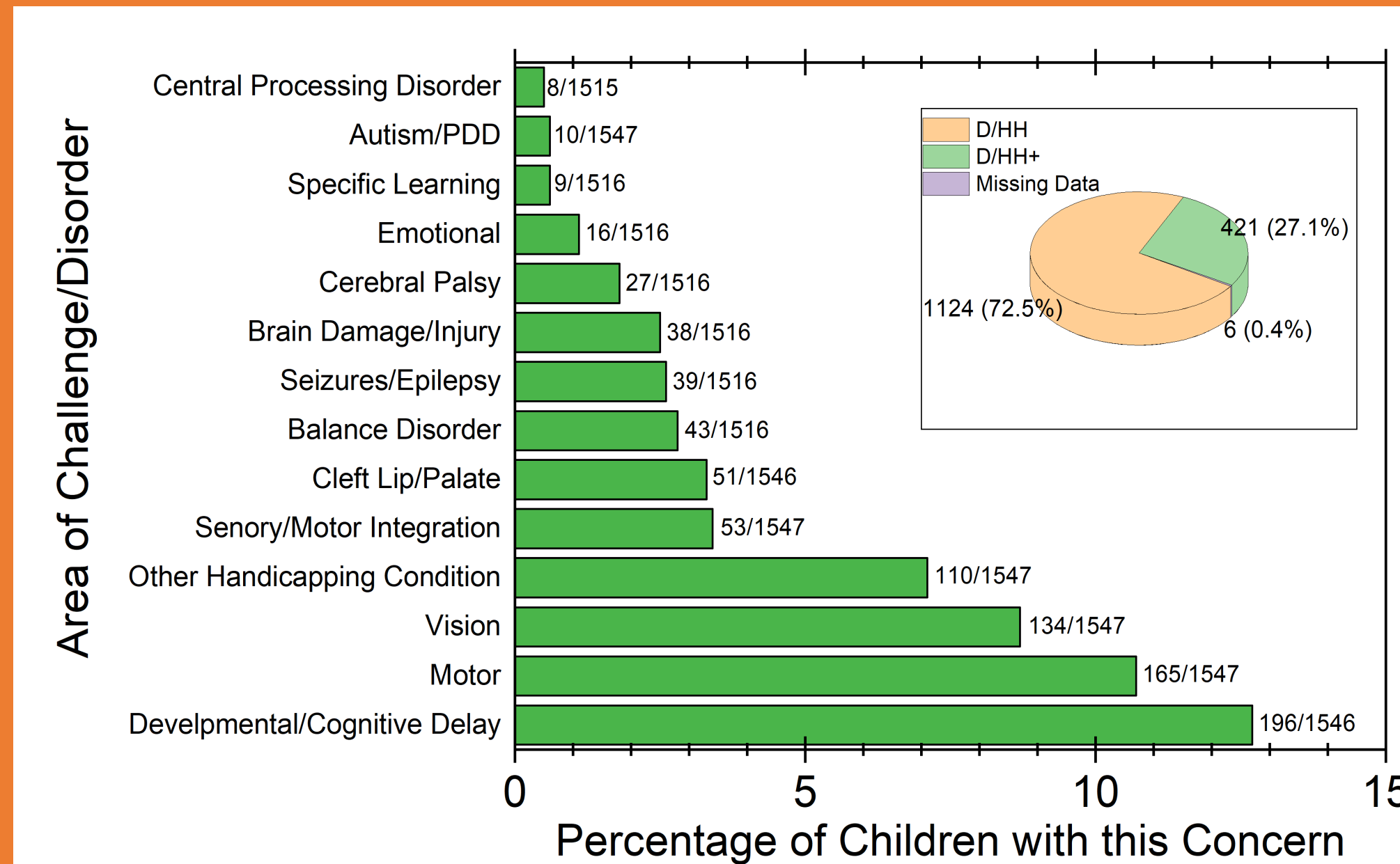


Figure 1. 27.1% of caregivers reported that their child has a secondary area of concern. Green columns indicate the percentage of caregivers who reported that particular area of concern for those children in the NECAP database. Note that a child can be counted in multiple areas of concern.

Degree of Hearing Loss (N=1296)

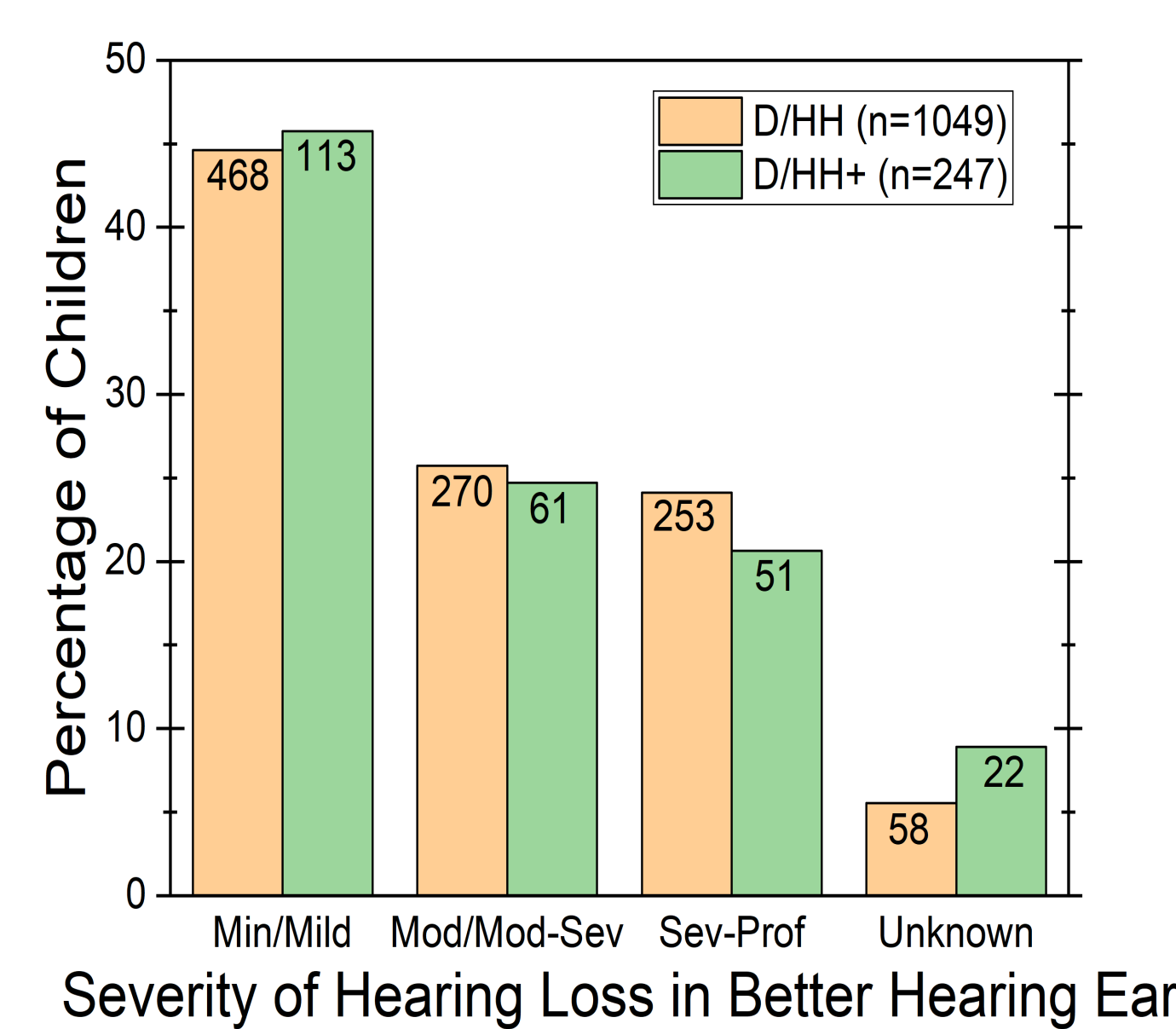


Figure 2. Percentage of children as a function of severity of hearing loss in the better ear. The largest group was Min/mild severity, which included normal hearing, specific frequency loss, and mild hearing loss. Degree of hearing loss characteristics were similar across the DHH and DHH+ groups.

Ethnicity and Race (N=1539/ N=1338)

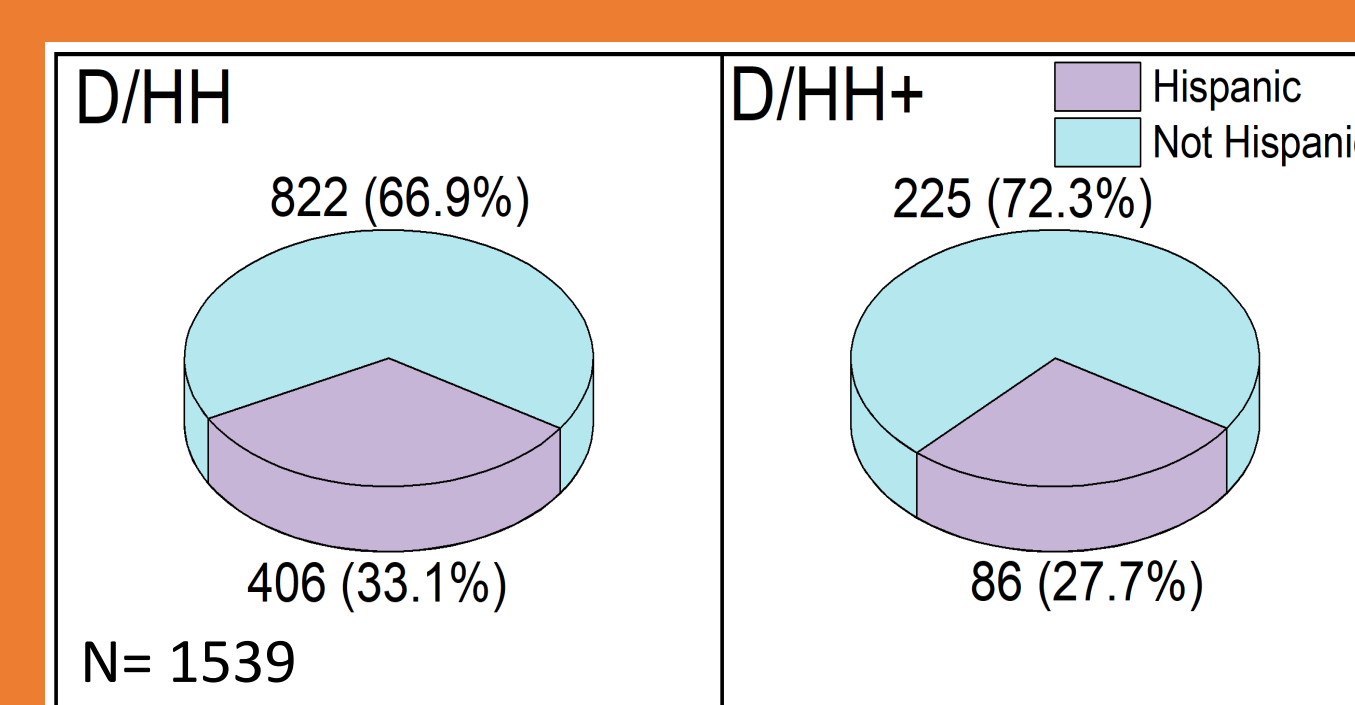


Figure 3. Ethnicity composition in the DHH and DHH+ populations. 30% of the children in the NECAP database are Hispanic.

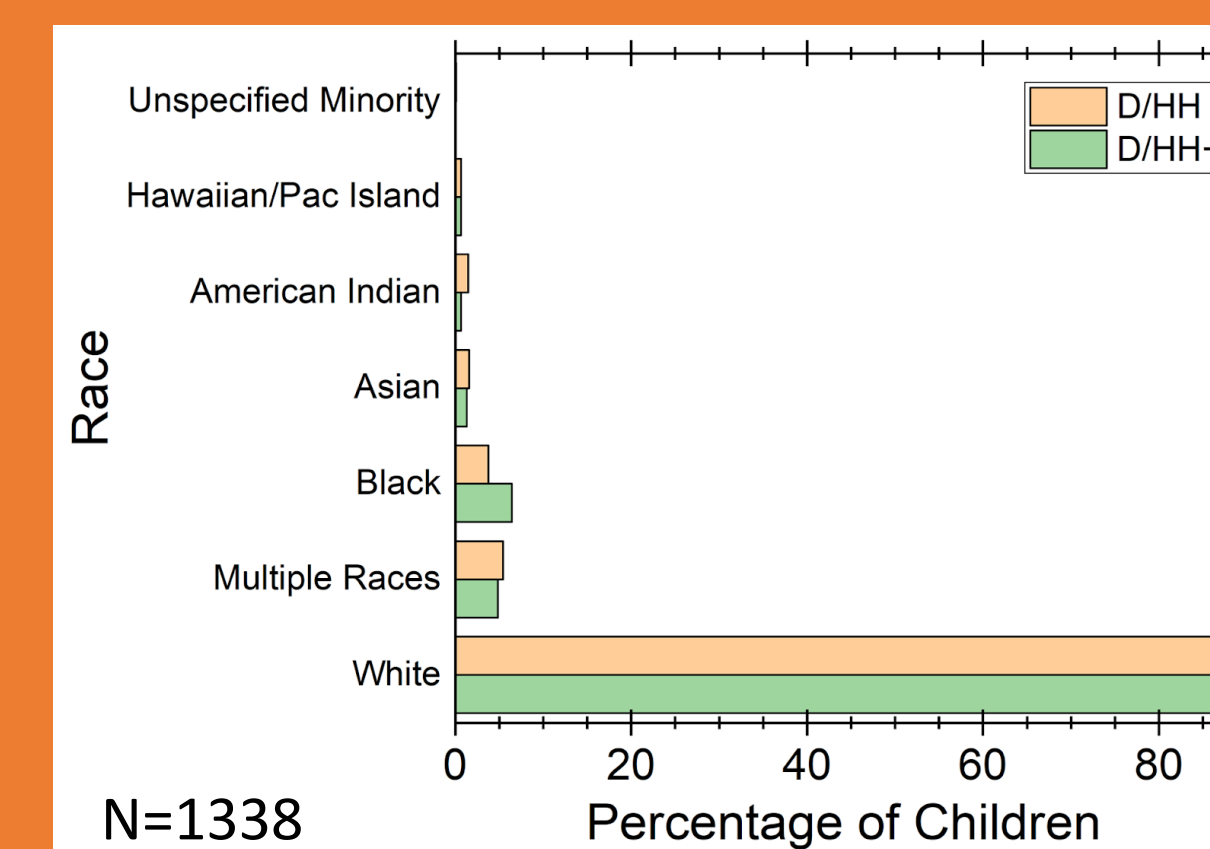


Figure 4. Race composition in the DHH and DHH+ populations. Of the children in NECAP, 15% are racially diverse, representing 202 children.

Maternal Education Level (N=1412)

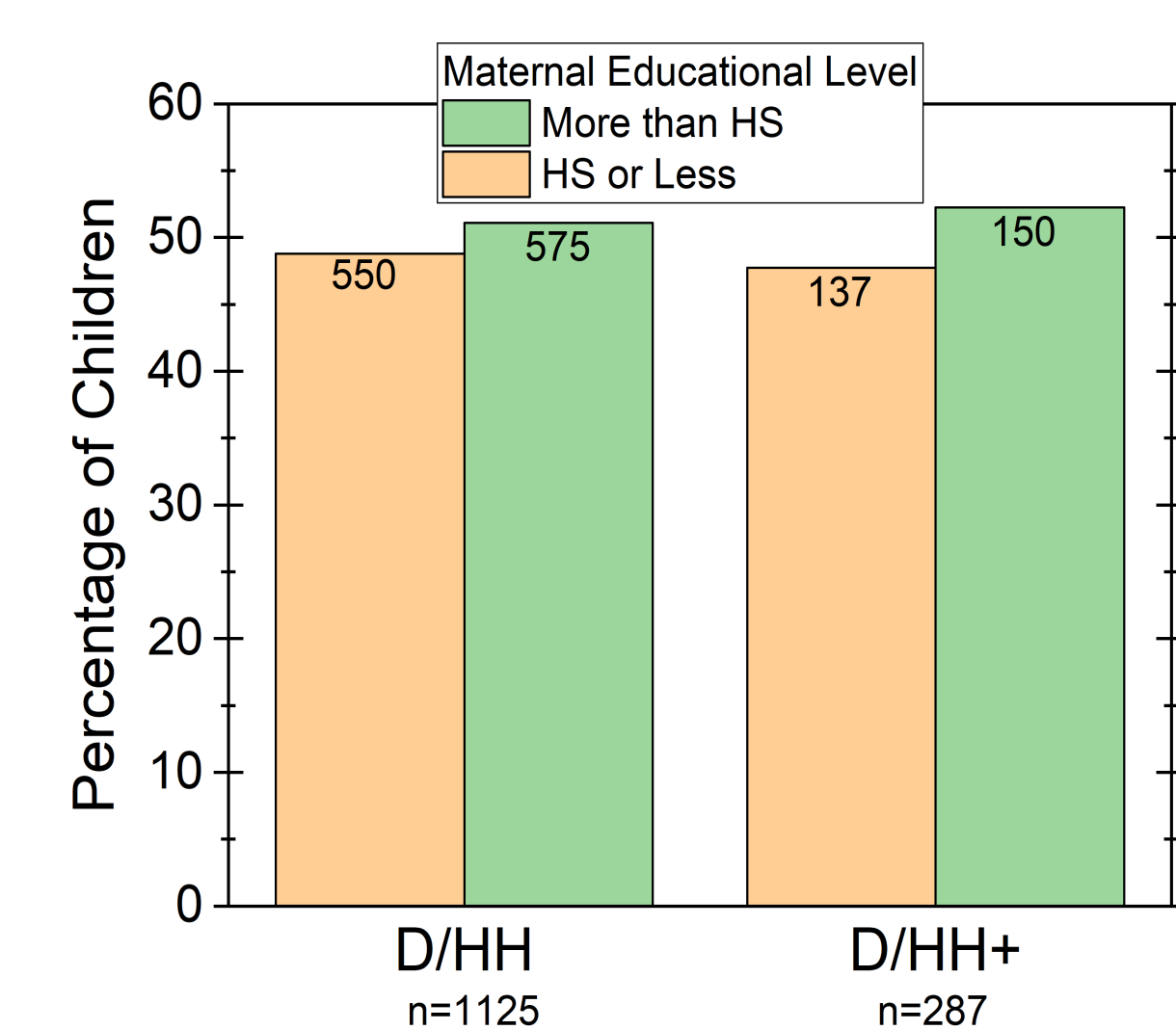


Figure 5. Percentage of children as a function of maternal education level in DHH and DHH+ populations. In both the DHH and DHH+ groups, maternal education similar based on the classification of "more than high school" and "high school or less".

Discussion and Future Directions

Area of Secondary Concern: For toddlers in the NECAP database, developmental/cognitive delay was the single most commonly reported area of challenge. Motor-related challenges were also common. However, few caregivers reported that their child had learning-related or behavioral challenges, or an autism spectrum disorder (ASD) diagnosis. These finds are consistent with disability data for young children, in which developmental delay is a common diagnosis for young children receiving early intervention services (CDC, 2017), while disorders related to learning or behavior as well as ASD are more prevalent in the school-aged population (CCBD, 2017; CDC, 2016; NICHD, 2016).

Degree of Hearing Loss: The DHH and DHH+ groups have similar proportions of children for each severity category of hearing loss. Children with minimum/mild hearing loss account for nearly half (~45%) of children in both the DHH and DHH+ groups.

Ethnicity and Race: The ethnicity and racial characteristics are broadly similar for the D/HH and D/HH+ groups. There are two trends that need to be explored further: (1) a small decrease of children who are Hispanic in the D/HH+ group (27.7% vs. 33.1%), and (2) a slight increase of children who are Black in the D/HH+ group (6.4% vs. 3.7%) relative to the D/HH group.

Maternal Education: Maternal education level appears to be similar for the D/HH and D/HH+ groups. This will be an important variable to consider in future analyses because maternal education has been shown to be related to both amplification usage and language outcomes (Walker et al 2013).

Future Directions: This poster is an exploratory analysis. Further research and analysis needs to be conducted to better understand the interaction of these factors, and how they relate to outcomes for children who are deaf/hard of hearing with additional areas of challenge.

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