

# Healthcare Equity for Speech, Language, and Swallowing Disorders.

## Introduction

Communication disorders affect nearly 1 in 12 children in the United States, posing challenges to academic achievement, social development, and long-term health outcomes (Black et al., 2015; Boyle et al., 2011). Early intervention services are critical, yet many children—especially those from low-income, racially minoritized, or linguistically diverse families—face systemic barriers to timely diagnosis and care (McLeod et al., 2015). Research shows that disparities in healthcare access are often compounded by insurance status. Public insurance or lack of coverage is often associated with higher unmet needs and emergency care reliance (Nguyen et al., 2020; Kenney et al., 2012). Moreover, children from households with limited English proficiency (LEP) are at increased risk of underutilizing preventive and developmental services due to language barriers, cultural mismatch, and lack of linguistically appropriate care (Flores, 2006; Zong & Batalova, 2015).

Disparities in access to care for children with speech-language disorders are well documented. Black and Hispanic children are less likely to receive speech-language pathology services, even when controlling for need (Morgan et al., 2016). In addition, LEP among caregivers is associated with lower rates of service utilization and increased barriers to care (Flores, 2006). Insurance coverage is a major structural determinant of access, with public insurance often linked to provider shortages and service delays, while uninsured children face even more significant gaps in care (Kenney et al., 2011; Zuckerman et al., 2004).

The present study analyzes how insurance coverage intersects with race/ethnicity and LEP to influence healthcare utilization and outcomes for individuals with speech, language and swallowing diagnoses. This research is grounded in a commitment to health equity, aiming to inform policy and service improvements that ensure all receive appropriate, accessible speech and language services regardless of background.

## Purpose

The purpose of this study is to examine:

- The relationship between insurance status (private, public, or uninsured) and perceived health outcomes.

- How perceived health outcomes differ based on race/ethnicity, insurance type, and English proficiency among individuals with speech-language and swallowing related diagnoses.
- Whether disparities exist in healthcare utilization, unmet needs, and perceived health status for this population.

## Research Question and Hypothesis

The aims will be guided by the following research question:

- How do insurance coverage, race, and English proficiency affect health outcomes for individuals diagnosed with speech, language, and swallowing disorders?

The present study hypothesizes:

- Primary hypothesis: Individuals with Medicaid or no insurance will report worse health outcomes compared to those with private insurance.
- Null hypothesis: There is no association between insurance coverage type and health outcomes.

This study also hypothesizes the following:

- There is a significant association between race/ethnicity and health outcomes for individuals with speech, language, and swallowing disorders.
  - Null: There is no significant association between race/ethnicity and health outcomes for individuals with speech, language, and swallowing disorders.
- Having a caregiver with limited English proficiency is significantly associated with differences in health outcomes for individuals with speech, language, and swallowing disorders.
  - Null: There is no significant association between limited English proficiency health outcomes for individuals with speech, language, and swallowing disorders.

## Methods

### Data Source

The Medical Expenditure Panel Survey (MEPS) is a set of survey questions for individuals, families, and their corresponding medical providers across the United States. Medical employers and insurance company data was also included. This survey was conducted by the Agency for Healthcare Research and Quality (AHRQ) and United States Department of Health and Human Services (HHS).

The MEPS collects data on health services used, the frequency of use, and expenditures of the services. The Household Component (HC) gathers interview data from a nationally

representative sample of families and individuals over a two year period. The Insurance Component (IC) data is on what health care plans private and public employers offer to their employees. The Medical Provider Component (MCP) is supplemental data on the health care providers, hospitals, physicians, and pharmacies identified by the family and individual participants. The MEPS has data available for 1996-2023. More information about collection methods, background information, and history can be found on their website.

## Study Sample

The present study analyzed the 2022 Full Year Consolidated file and 2022 Medical Conditions file. The study sample consist of adults and children diagnosed with speech-language and swallowing disorders. The Medical Conditions file identifies individuals using the International Classification of Diseases, Tenth Revision, Clinical Modifications (ICD-10-CM) diagnosis codes. Data was included from individuals with diagnosis codes related to speech, language, and swallowing disorders: F80 (developmental disorders of speech and language such as articulation disorders, developmental delays, and social communication), F84 (Autism Spectrum Disorder), R47 (speech disturbances such as aphasia, dysphasia, and dysarthria), R48 (apraxia, dyslexia, and alexia), R13 (swallowing disorders such as dysphagia and aphagia), and R63 (symptoms and signs concerning food and fluid intake). The American Speech-Language-Hearing Association (ASHA) outlines these codes and others in the 2025 ICD-10-CM Diagnosis Codes Related to Speech, Language and Swallowing Disorders Resource. Data was also included if the individual had completed data on insurance coverage and self-reported health status. Data was excluded from analysis if the individual did not have a speech-language or swallowing diagnosis code, and were missing information for key variables such as insurance type and health outcome.

## Limitations

Several limitations should be acknowledged when interpreting the findings of this study. First, the cross-sectional nature of the MEPS data limits causal inference. The data does not allow for conclusions about the direction or temporality of these relationships. Second, the identification of speech and language disorders relied on a selection of specific diagnostic codes (ICD-10) within the MEPS dataset, which may underrepresent the population of individuals with various communication or swallowing disorders secondary to a chronic illness or disease who may be enrolled in speech-language pathology services (epilepsy, traumatic brain injury, dementia, Alzheimer's, strokes). Additionally, there was no measure of speech-language pathology services nor mention of providers in the dataset. Variation in diagnostic practices and coding accuracy across providers may have also introduced misclassification bias.

Third, the measure of limited English proficiency was based on a single household-level self-report, which may not fully capture the nuances of language barriers or bilingual family dynamics. Similarly, parent-reported health outcomes could be influenced by cultural, perceptual, or systemic factors. Fourth, while the MEPS dataset includes a rich array of sociodemographic variables, it lacks detailed information on the severity of speech/language

disorders, types of treatment received, and provider-level factors such as availability of specialists. These unmeasured confounders could influence both access to care and health outcomes. Finally, due to sample size limitations, the study may have had reduced statistical power to detect significant effects within smaller racial/ethnic subgroups or among uninsured individuals with speech-language or swallowing disorders.

## Analysis

This section details the statistical analysis conducted to examine the relationship between insurance coverage and self-reported health outcomes for individuals with speech-language and swallowing disorders. The analysis follows a two-step approach, using descriptive statistics and bivariate analysis.

### Descriptive Statistics

Descriptive statistics provide foundational understanding of the sample and helps to identify any possible patterns and disparities in healthcare access and outcomes. This step ensures that the distribution of important variables align with theoretical expectations. They also aid in identifying skewness, missing data, or potential biases in the dataset. Descriptive statistical measures include measures of frequency, central tendency, variation, and dispersion.

### Bivariate Analysis

Bivariate Analysis determines if insurance coverage is significantly associated with self-reported health outcomes before controlling for confounding variables. This step helps to establish a preliminary relationship between variables, as well as guide the multivariate analysis. A chi-square test of independence was used to assess the association between insurance status and self-reported health outcomes. The chi-square test is suitable for this study for many reasons. Chi-square test are designed to test for associations between two categorical variables (Feild, 2017). The categorical variables in the present study are insurance type and self-reported health outcomes. Chi-square test also does not assume a normal distribution, thus making it suitable to analyze survey data. Lastly, this test provides insight into health disparities, specifically answering if individuals with different types of insurance report significantly different health outcomes.

## Results

### Descriptive Statistics

The final analytic sample consisted of  $N = 198$  participants identified with speech-language pathology related ICD-10 codes indicating a speech, language or swallowing disorder. Among these, over 50% were covered by private insurance, over 40% had public insurance, and less than 5% were uninsured. The racial/ethnic composition of the sample was over 80% White, 10% Black, less than 10% multiple races and Asian.  $N = 16$  answers to the English proficiency question, with  $N = 12$  reports of “Very well,”  $N = 2$  reports of “Well,” and  $N = 2$  reports of “Not at all.”

The most frequent diagnosis code was F84 for Autism Spectrum Disorder ( $N = 106$ ). There were  $N = 50$  counts of F80, the code for Specific Developmental Disorders of Speech and Language (articulation, expressive, receptive, mixed expressive-receptive). R47, the code for Other Speech Disturbances (aphasia, dysarthria) had the lowest count of  $N = 42$ .

These findings suggest that any analysis of relationships involving race should be interpreted with caution as there is a higher amount of people who identified as White. This sample is unrepresentative of the general population. The diagnosis codes descriptive statistics reveal that Autism Spectrum Disorder was the most prevalent diagnosis code, followed by Specific Developmental Disorders of Speech-Language. This result is consistent with the literature as autism rates are on the rise, and approximately 71% of individuals with autism receive speech therapy (Monz et al., 2019). Although ages were not accounted for, it could be concluded that the individuals with developmental speech-language diagnoses are children between the ages of 18 months and 5 years old. This is age range where language delays and disorders are typically diagnosed (American Speech-Language Hearing Association).

Individuals with public health insurance reported lower perceived health outcomes in the “Very Good-Good” range, while individuals with private health insurance reported higher perceived health status in the “Excellent-Good” range. Although remarkable, these results should be interpreted with caution as there were more reports of private insurance enrollment than public insurance enrollment.

### Chi-Square Analysis

Chi-square analysis revealed no significant relationships between insurance type and health status, English proficiency and health status, race and health status, nor diagnosis and health status.

## Recommendations

Based on the results of this preliminary study, several policy, practice, and research recommendations are proposed to improve quality of healthcare for individuals with speech-language related diagnoses. These recommendations aim to mitigate inequities caused by systemic barriers and gaps in communication sciences and disorders research.

More speech-language pathology services and providers should be represented and included in future healthcare surveys. SLPs are integral members of the interdisciplinary healthcare team in settings such as hospitals, skilled nursing facilities, outpatient clinics, private practices, home health services, early intervention programs, and educational settings. SLPs collaborate with physicians, nurses, psychologist, occupational and physical therapist, many of whom had more data represented within the dataset.

## Implementation

Translating this recommendation into practice requires coordinated, interdisciplinary approach to include a wider variety of speech-language pathology providers. Input from federal agencies, professional associations, and research institutions are necessary to address the underrepresentation of SLPs. The inclusion of SLP- specific data in future healthcare surveys would support accurate monitoring of service delivery, the landscape of the workforce, and patient outcomes. The following strategies provide feasible steps for implementing this recommendation to improve speech-language pathology representation and quality of care.

### Collaborate with Federal Health Agencies

Professional governing bodies such as the American Speech-Language-Hearing Association (ASHA) should consider partnering with agencies such as the Agency for Healthcare Research and Quality (AHRQ), Centers for Disease Control and Prevention, (CDC) and the National Institute of Health (NIH) to advocate for the inclusion of SLP-related data in nationally representative surveys and similar research projects. This collaboration would include technical advisory panels, data redesign committees, and interdisciplinary working groups with researchers from communication sciences and disorders. Other supports may come from policy analyst and survey methodology specialist.

### Define and Integrate SLP-Specific Variables

Healthcare survey instruments should include variables that identify SLP services, provider types, frequency and duration of treatment, referral pathways, settings of care, and diagnoses treated. In addition, geographic information on where SLP services are is crucial for access to healthcare. This can be done by updating the surveys to include these variables in alignment with federal data standards. Pilot testing and validation of new items could be conducted over 1 year, followed by integration into future survey rounds.

## Ensure Inclusion of Diverse Clinical Settings

Surveys should mirror the full scope of speech-language pathology practice by including data from early intervention programs, home health agencies, private practices, and school-based therapy services. This would involve consulting with administrators in school settings, medical settings, and private practice owners to ensure the survey is valid and aligned with patient information sharing rules.

## Conclusion

The present pilot study used nationally representative data from the 2022 Medical Expenditure Panel Survey (MEPS) to examine disparities in healthcare access and outcomes among individuals with speech-language related diagnosis codes. The intersections of interest for this study were on insurance type, race/ethnicity, and English language proficiency. The findings revealed that individuals with public insurance reported slightly lower perceived health outcomes than those with private insurance. This study revealed no significant relationships between the variables. In response, this study recommends including more speech-language pathology specific variables for a more comprehensive national healthcare survey. Implementing these strategies will enhance the quality of services for the profession, and address the needs of their patients.

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