



## **An Exploration of Patients Referred for Speech and Language Concerns: A DBPNet Study**

Carrie E Cuffman, MD, Ellen J Silver, PhD, Nancy J Roizen, MD, Marilyn C Augustyn, MD, Nathan Blum, MD, Pamela High, MD, and Ruth EK Stein, MD

**Background:** Speech and language concerns (s/l concerns) are a common reason for referral to developmental-behavioral subspecialty services.

**Objective:** To assess differences in the socio-demographic characteristics of patients referred with and without s/l concerns and examine diagnoses given to these patients at an initial developmental-behavioral pediatrics appointment.

**Design/Methods:** This study used survey data from 56 Developmental-Behavioral pediatricians at 12 participating sites who recorded anonymous data on up to 15 consecutive new patients. We conducted mixed model analyses controlling for site and appropriate covariates.

**Results:** 336 of 782 patients were referred for a s/l concern. Predictors of being referred for s/l concern in the mixed model analysis were Hispanic race/ethnicity (31% in s/l concern referral group vs 20%;  $p=.04$ ), speaking a language other than or in addition to English (39 vs 24%;  $p=.001$ ) & younger child age (mean 3.87 yrs vs 6.89 yrs;  $p<.0001$ ). Other than being referred for s/l concern (75.4 vs 26.2%;  $p<.0001$ ), the only predictor for diagnosis of s/l delay was younger age (mean 4.6 yrs vs 6.5 yrs;  $p=0.02$ ). Patients referred for s/l concern were more likely than those without s/l concern to receive diagnoses of autism spectrum disorder (42.7 vs 25.1%;  $p<.0001$ ), cognitive delay (43.6 vs 22.2%;  $p<.0001$ ), microcephaly (6.8 vs 1.6%;  $p=0.004$ ), and motor delay (23.4 vs 11.6%;  $p=0.03$ ). Those referred for s/l concern were less likely to receive diagnoses of ADHD (22.3 vs 47.2%;  $p<.0001$ ), ODD (1.2 vs 6%;  $p=0.019$ ) and parenting problem (e.g., limit setting) (3.9 vs 7%;  $p=0.005$ ).

**Conclusions:** DBP referrals for s/l concerns are common. Patients referred for s/l concerns were younger at the evaluation than those without s/l concerns. Patients living in homes where a language other than or in addition to English was spoken were more likely to be referred for a s/l concern, but equally likely to be diagnosed with s/l delay compared to patients from English-speaking only homes. Patients with s/l concerns were less likely to receive diagnoses indicating behavioral problems and more likely to be given a diagnosis of s/l delay and to receive diagnoses that are proxies for intellectual disability and that reflect additional impairments in development.

DBPNet is supported by cooperative agreement UA3MC20218 from the Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.