

Childhood Stuttering Screening for Physicians (CSS-P™): Supporting Accurate Referral of Young Children Who Stutter

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1. Introduction

Many young children go through a period of stuttering (for review, see Bloodstein et al., 2021), and it can be difficult for caregivers to know whether and when to seek an evaluation or treatment. Often, the family physician or pediatrician is the first professional that caregivers contact with questions about their child's speech. Unfortunately, physicians commonly recommend that caregivers "wait to see" if the child will stop stuttering rather than referring to a speech-language pathologist (SLP). For example, survey research from four countries examined the reasons that early stuttering intervention might be delayed (Węsierska et al., 2017), and one of the most common reasons for delay was pediatricians' statements that children would "grow out of stuttering." This occurred despite longstanding availability of guidelines about when a referral is preferred (e.g., Donaher et al., 2011; Molt et al., 2016; Riley & Riley, 1989), as well as advice from SLPs and stuttering specialists that, "early intervention...can be a major factor in preventing a life-long problem" (Guitar & Conture, 2013).

Fortunately, there is reason for optimism, as recent research has shown that pediatricians in the United States may be less likely to recommend that caregivers wait (Winters & Byrd, 2020). Nevertheless, pediatricians tended to base their recommendations on the presence of observable stuttering behaviors, even though research shows that this is not a reliable way to identify children needing intervention (e.g., Yairi et al. 1996). Simply observing a child's speech in a clinical or medical setting is not sufficient for determining whether referral to an SLP is indicated. This is due, in part, to the well-documented variability of stuttering (Yaruss, 1997) and to the fact that observable stuttering does not indicate whether a child will continue stuttering. A child who does not appear to stutter during a clinic visit may still continue stuttering, while a child who stutters notably may still stop stuttering without intervention.

Advice that caregivers postpone evaluation of their child's stuttering is problematic, given that roughly 25% of young children who stutter will continue stuttering into the school-age years and beyond (e.g., Yairi & Ambrose, 1999). Certainly, the majority of children do stop stuttering, so from a statistical standpoint, it is understandable that physicians provide this advice. Still, postponing assessment misses critical opportunities for therapy if needed. It is therefore not advised to delay intervention for children who are at elevated risk for continued stuttering. Caregivers and children would be better served if physicians had guidance, based on current research, about when to refer to an SLP for a comprehensive evaluation and when to monitor, due to lower perceived likelihood of continued stuttering, to see if stuttering resolves independently.

A large and growing body of recent research has highlighted some of the genetic, neurological, and behavioral factors that predict the likelihood of continued stuttering (e.g., Singer et al. 2022; Walsh et al., 2021) and, correspondingly, the potential that a child may benefit from evaluation and possible therapy. (Some of this writing has been directed specifically toward physicians; see Costa et al., 2022.) Commonly identified risk factors and related indicators include:

- Family history of stuttering (reflecting the genetic underpinnings of stuttering, see Kraft & Yairi, 2011)
- Consistent or increasing pattern of confirmed stuttering over time (indicating that stuttering is not observed only at a single time point or only in the clinical/medical setting)
- Longer time since onset (more than approximately 3 to 6 months)
- Older age of onset of stuttering (approximately age 5)
- Concomitant difficulties with speech or language development
- Elevated concern about stuttering by the caregivers or the child
- For older children, elevated severity of stuttering (Walsh et al. 2020).

Importantly, this list does not reflect definitive predictors of chronic stuttering; instead, it reflects factors that may indicate increased *likelihood* of continued stuttering and a need for evaluation. It also includes factors that might not specifically indicate elevated risk but which are commonly identified by expert SLPs as being relevant for making referrals.

As noted, guidance has previously been provided to physicians about the value of stuttering intervention; however, the previously available screening tools (e.g., Donaher et al., 2011; Riley & Riley, 1989) focus more on observable characteristics of stuttering behavior and do not incorporate the most current research evidence. Physicians would therefore benefit from a current, reliable screening tool based on recent research that identifies children who should be referred or monitored over time. Physicians who use such a tool will be better informed about stuttering research (see Yairi & Carrico, 1992) and more likely to provide appropriate referrals in a timely manner.

2. Method

To address this need, McGill et al. (2017) created a draft screening tool, the *Stuttering Indicators for Physicians* (SIP), as a means for helping physicians appropriately identify young children who stutter who should be referred to SLPs for evaluation. This tool, now called the *Childhood Stuttering Screening for Physicians* (CSS-P™; McGill et al., 2023), is a brief screening instrument that can be quickly administered to families by physicians, physician assistants, nurses, or other medical/clinical or office staff—or electronically as part of medical record-gathering—to determine whether a young child who stutters exhibits characteristics that suggest the need for further evaluation by an SLP.

The CSS-P was not designed to determine which children should receive therapy; it was specifically designed to help medical professionals identify which young children should be referred to an SLP for evaluation. It is within the SLP's scope of practice, not the physician's, to determine whether a child who stutters should receive therapy; the purpose of the CSS-P is to increase the likelihood physicians will make appropriate recommendations for caregivers to bring their children to SLPs rather than postponing evaluations.

The development of the CSS-P, which was nearing completion at the time of the presentation described in this extended abstract, involved several stages: First, an initial version of potential items for the screening tool was developed by McGill et al. (2017) based on the extensive clinical experience of the lead author and colleagues. Results from the draft version were compared to the authors' recommendations about referral, and adjustments to the draft tool were implemented during an iterative process of evaluation, revision, and re-evaluation.

Next, an independent analysis of evaluation recommendations by U.S. clinicians with expertise in stuttering was undertaken by the authors of this extended abstract. This portion of the study was judged to be exempt from institutional review by the Michigan State University Human Research Protection Program Office of Regulatory Affairs under Statute 45 C.F.R. 46.101(b)(2) of the Federal Policy for the Protection of Human Subjects. A detailed questionnaire was developed to gather expert SLPs' opinions about when physicians should refer a child for an evaluation. This questionnaire was distributed to all "board-certified specialists in fluency" as well as to the entire mailing list of the American Speech-Language-Hearing Association (ASHA) Special Interest Group 4 for Fluency and Fluency Disorders. A total of 40 experts in stuttering responded to the survey, and an item analysis was conducted to identify factors judged to be valuable for making referrals. These factors were compared to the initial draft version of the SIP, and a revised draft version (CSS-P) was developed for further piloting and revision.

The revised/final version of the CSS-P contains 8 items focusing specifically on risk factors and related indicators, such as a family history of stuttering or a longer time since onset, that might suggest the need for evaluation. Unlike prior checklists, the tool is scorable, with validated cut-off values indicating whether physicians should make an immediate referral to an SLP or whether the child should be re-screened within 3 months. This draft was distributed to several pediatricians who used the CSS-P with their young patients who stuttered, and referrals indicated by the screening were compared to expert recommendations to evaluate sensitivity and specificity of the CSS-P.

3. Results

Data analyses reflected 100% alignment between the results of the CSS-P (and the resulting referrals made by pediatricians) and the judgments about the appropriateness of referrals made by stuttering specialists. That is, each case in which the CSS-P indicated the need for referral was confirmed by the authors, and each case in which the CSS-P indicated that it was acceptable to wait 3 months and rescreen was also confirmed by the authors. Thus, the

tool reflects consistency with the recommendations that expert speech-language pathologists would like to see physicians make when they see young children who stutter. These findings demonstrate validity in that the CSS-P provides the desired guidance for helping physicians make referrals that are consistent with SLP recommendations for young children who stutter.

4. Discussion

Although ongoing research will help to refine the tool, preliminary results indicate that the CSS-P can help physicians improve their referral practices for young children who stutter. This will help to increase the likelihood that children who would benefit from an evaluation and potential treatment actually receive that intervention, and this, in turn, will help to diminish the likelihood that children will experience adverse impact in their lives associated with stuttering.

Disclosures

Financial: J. Scott Yaruss and Loryn McGill both receive royalties from the sale of the CSS-P. Yaruss is co-owner of Stuttering Therapy Resources, Inc., which publishes the CSS-P.

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