

# Overall Assessment of the Speaker's Experience of Stuttering (OASES): Documenting multiple outcomes in stuttering treatment

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## Abstract

This paper describes a new instrument for evaluating the experience of the stuttering disorder from the perspective of individuals who stutter. Based on the World Health Organization's *International Classification of Functioning, Disability, and Health* [World Health Organization (2001). *The International Classification of Functioning, Disability, & Health*. Geneva: World Health Organization], the *Overall Assessment of the Speaker's Experience of Stuttering* (OASES) collects information about the totality of the stuttering disorder, including: (a) general perspectives about stuttering, (b) affective, behavioral, and cognitive reactions to stuttering, (c) functional communication difficulties, and (d) impact of stuttering on the speaker's quality of life. This paper summarizes scale development, reliability and validity assessment, and scoring procedures so clinicians and researchers can use the OASES to add to the available evidence about the outcomes of a variety of treatment approaches for adults who stutter.

**Educational objectives:** As a result of this activity, participants will be able to:

- (1) identify key issues related to the documentation of treatment outcomes in stuttering;
- (2) discuss the components of the *international classification of functioning, disability, and health* as they relate to the documentation of stuttering treatment outcomes;

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- (3) evaluate and use a new measurement instrument for assessing the outcomes of stuttering treatment from the perspective of the person who stutters.

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In recent years, there has been a growing discussion about the importance of evidence-based practice (EBP) in the field of speech–language pathology (e.g., ASHA, 2005). Although the changes associated with implementing EBP affect many aspects of the field, the need for clinicians to document the results of their intervention and to select treatment approaches based on a meaningful body of literature has been particularly apparent in the field of fluency disorders (e.g., Blood, 1993; Blood & Conture, 1998; Bothe, 2003, 2004; Conture, 1996; Conture & Guitar, 1993; Cordes & Ingham, 1998; Finn, 2003; Ingham, 2003; Ingham & Riley, 1998; Langevin & Kully, 2003; Onslow, 2003; Power, 2002; St. Louis & Westbrook, 1987; Starkweather, 1993; Thomas & Howell, 2001; Yaruss, 1998a, 1998b, 2001, 2004; Yaruss & Quesal, 2004a, 2004b).

One of the central tenets of an evidence-based approach to clinical practice is the measurement and evaluation of treatment outcomes (Frattali, 1998a; Olswang, 1998; Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). In fluency disorders, this has been addressed through numerous studies that have documented the effects of treatment on factors such as clinician-rated frequency of disfluencies, naturalness of speech, and speaking rate (e.g., Ingham, 1984; Ingham & Onslow, 1985; Onslow, Costa, Andrews, & Harrison, 1996; Schiavetti & Metz, 1997). Results from these studies have clearly demonstrated that treatment can effectively minimize these observable symptoms of the disorder.

Still, as many authors have noted, there is more to the stuttering disorder than just the surface features (e.g., Cooper, 1993; Manning, 1999, 2001; Murphy, 1999; Shapiro, 1999; Sheehan, 1970; Starkweather & Givens-Ackerman, 1998; Van Riper, 1982; Yaruss, 1998a; Yaruss & Quesal, 2004a). Perhaps the most well-known account is Sheehan's (1970) "iceberg" analogy, which depicted the fact that much of the speaker's experience of the stuttering disorder occurs "under the surface." Manning (1999) described the many ways in which stuttering can affect an individual's life, while highlighting the fact that many of the changes associated with treatment occur not only "under the surface" but also "over time." Similarly, Murphy (1999) emphasized the strong emotions, such as shame and guilt that develop in many people who stutter. In addition, numerous autobiographical accounts (Bobrick, 1995; Carlisle, 1985; Jezer, 2003; Johnson, 1930) and collected life stories of people who stutter (e.g., Ahlback & Benson, 1994; Hood, 1998; St. Louis, 2001) have underscored the fact that the overall impact of stuttering on people's lives involves more than just the production of observable speech disfluencies. Indeed, even authors who have focused their research primarily on the observable characteristics of stuttering have acknowledged the importance of considering a speaker's self-reports and perceptions about the disorder (Ingham & Cordes, 1997).

## 1. The need for broad-based treatment outcomes research in stuttering

Although many authors have shown that stuttering involves more than the behaviors that can be observed on the surface, there are *very* few studies demonstrating the effects of treatment

on these “intrinsic” (Manning, 2001) factors (see reviews in Bloodstein, 1995; Cordes, 1998). The paucity of treatment outcomes research examining the totality of the stuttering disorder makes it difficult for clinicians to apply a strictly evidence-based approach to selecting treatment options (Quesal, Yaruss, & Molt, 2004; Yaruss & Quesal, 2002), for much of the treatment that has been recommended by authorities over the years has not been subjected to empirical research (Cordes, 1998). Thus, there is a compelling and immediate need for research on the outcomes of treatment that address aspects of the stuttering disorder beyond the surface speech behaviors.

There are a number of potential explanations for the relative lack of treatment outcomes studies examining the less-observable components of stuttering. One possible explanation is the fact that it is more difficult to define and measure the intrinsic aspects of a speaker’s experience of stuttering (e.g., the speaker’s beliefs and feelings about stuttering, the impact of stuttering on the speaker’s life) than it is to measure changes in speech behavior (e.g., the number of repetitions or prolongations in a person’s speech). Nevertheless, several instruments for measuring broader aspects of the stuttering disorder *do* exist (e.g., Ammons & Johnson, 1944; Andrews & Cutler, 1974; Brutton & Shoemaker, 1974; Crowe, Di Lollo, & Crowe, 2000; Erickson, 1969, Lanyon, 1967; Ornstein & Manning, 1985; Riley, Riley, & Maguire, 2004; Watson, 1988; Wolf, 1967; Wright & Ayre, 2000). These instruments examine a wide range of factors, including the speaker’s fluency in different speaking situations, the speaker’s confidence that he or she will be able to maintain fluency in different situations, the emotional and cognitive reactions that speakers have to stuttering in different speaking situations, the speaker’s opinions or attitudes about stuttering, and other factors. Together, these instruments can give clinicians and researchers a more complete picture of the speaker’s experience of the stuttering disorder, and the application of such tools in the study of stuttering treatment outcomes could help to provide needed information about the changes people experience as a result of therapy.

With a few notable exceptions (e.g., Boberg & Kully, 1994), however, such instruments have not been widely used in stuttering treatment outcomes research. There are a number of possible reasons for this. For example, some authors have asserted that existing “attitude scales” are simply a reflection of a speaker’s fluency in certain situations (Ulliana & Ingham, 1984). Others have stated that they are not convinced of the importance or measurability of emotional and cognitive aspects of the disorder (see Ingham, 2003). Another explanation may be the difficulty associated with administering multiple assessments to capture the range of behaviors, emotions, and consequences associated with stuttering, for no one of the aforementioned instruments assesses the totality of the disorder. Also, it is not always clear *why* certain items, factors, or constructs are addressed in existing instruments, for not all of the instruments are based on a clearly defined theoretical framework. Regardless of the specific explanation that is offered, the fact remains that the literature contains numerous studies documenting reductions in stuttering that speakers can achieve when using various methods of controlling fluency but significantly fewer studies documenting changes speakers achieve in other, less-observable aspects of the disorder. If clinicians and researchers wish to adhere to the principles of evidence-based practice when selecting broad-based treatment approaches, then more comprehensive documentation of such changes is clearly needed.

## **2. A framework for describing broad-based treatment outcomes**

Although much of the necessary research has not yet been completed, documenting the broad-based outcomes of treatment for a complex disorder such as stuttering is certainly not impossible.

Indeed, most disorders (not just in speech–language pathology, but across the entire field of health and rehabilitation science) involve far more than just the symptoms that can easily be observed, counted, or classified. Accordingly, for the past several decades, there has been a growing emphasis on the need to document factors such as changes in emotional reactions, functional outcomes, and quality of life for a wide variety of disorders (see reviews in Granger & Gresham, 1984; Nagi, 1969; Pope & Tarlov, 1991). Rather than only documenting the fact that an individual may have a certain disease or disorder, researchers and clinicians in the rehabilitation sciences have also focused on developing ways to document the overall *impact* of those disorders on the individual's life.

As part of this effort, the World Health Organization (WHO) has developed two frameworks for categorizing the totality of complex disorders, including not only the diagnosis (i.e., what is wrong with the person), but also what that diagnosis means for the person's life. The first of these frameworks, the *International Classification of Impairments, Disabilities, and Handicaps (ICIDH; WHO, 1980, 1993)*, sought to describe the *consequences* that disorders could have on an individual's life. The ICIDH included three components (WHO, 1980, pp. 25–29): *impairment*, or “loss or abnormality of psychological, physiological, or anatomical structure or function;” *disability*, or “any restriction of lack . . . of ability to perform an activity in the manner or within the range considered normal for a human being;” and *handicap*, or “a disadvantage for a given individual, resulting from an impairment or a disability that limits or prevents the fulfillment of a role that is normal . . . for that individual.”

Because of its emphasis on the individual's experience of disorders, the ICIDH was widely hailed as a framework that could be used to document treatment outcomes throughout the fields of health and rehabilitation (e.g., Brandsma, Heerkens, & van Ravensberg, 1995; Chamie, 1990; de Kleijn-de Vrankrijker, 1995; Halbertsma, 1995; Schuntermann, 1996; Yaruss, 1998a, 2001). Still, there were a number of shortcomings that hindered the usefulness of the ICIDH for some disorders (Badley, 1987; Thuriaux, 1995). For example, the original ICIDH failed to account for differences *between* individuals that might exacerbate or mitigate their experience of disability or handicap (e.g., coping mechanisms, attitudes, resources, support from the environment). Several authors also raised concerns about the complexity of the three-tiered model, in particular highlighting confusion surrounding the definition of the terms *disability* and *handicap* (e.g., Brandsma, Lakerveld-Heyl, Van Ravensberg, & Heerkens, 1995).

To account for these and other issues, the WHO developed a revised framework, the *International Classification of Functioning, Disability, and Health (ICF; WHO, 2001)*. In the ICF, the WHO simplified the descriptive framework to just two primary levels and expanded the system to also address contextual factors that were omitted in the ICIDH. The ICF describes all health-related experiences in terms of: (a) the *structure* and *function* of the body and (b) the *activities* a person might engage in during their *participation* in daily life. When a person experiences difficulties with body function or structure, they are termed *impairments*, and when a person experiences difficulties with activities or participation, they are termed activity *limitations* or participation *restrictions*. To account for individualized experiences of different people, the WHO also added a parallel set of contextual factors to the model. These *personal* and *environmental* factors describe the context, either within a person or surrounding the person, that could affect the individual's ability to function effectively. The resulting framework has the capacity to describe all aspects of an individual's health experience, including both normal and disordered functioning. As such, the ICF holds considerable promise for helping clinicians and researchers consider the wide range of changes that might occur during the course of treatment for disorders such as stuttering.

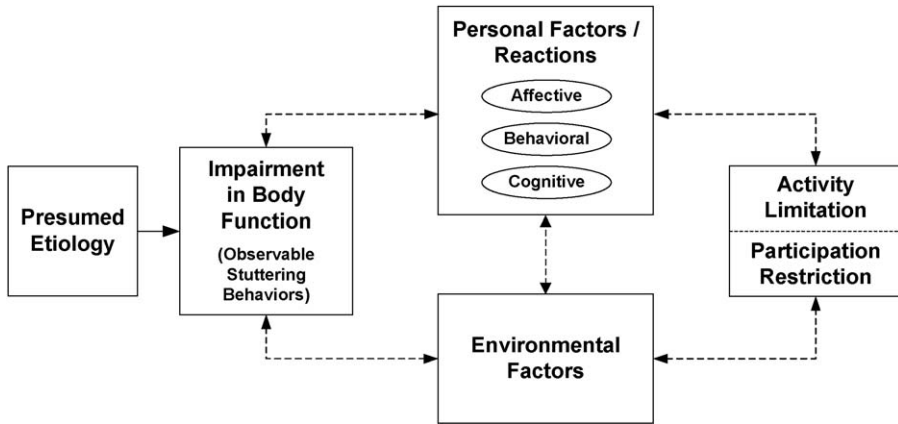


Fig. 1. Schematized version of the Yaruss and Quesal (2004) adaptation of the World Health Organization's International Classification of Functioning, Disability, and Health (ICF, WHO, 2001). Adapted with permission from Yaruss and Quesal (2004).

### 3. Documenting multiple outcomes in stuttering treatment

In order to facilitate and support broad-based treatment outcomes research in stuttering, Yaruss (1998a, 1998b, 2001) and Yaruss and Quesal (2004a, 2004b) adapted the WHO's original ICIDH and current ICF frameworks to the study of stuttering. Fig. 1 presents a schematized version of the Yaruss and Quesal (2004a, 2004b) adaptation, which depicts how the stuttering disorder can be viewed in terms of several interacting components:

- the *presumed etiology* or underlying cause(s) of the disorder;
- the *impairment in body function*, indicated by the observable characteristics of stuttering;
- the speaker's *affective, behavioral, and cognitive reactions* to stuttering;
- the effects of the *environment* on stuttering, indicated by the difficulty in different speaking situations and the reactions of others;
- the overall impact of stuttering on the speaker's life, indicated by *limitations in communication activities* and *restrictions in participation* in daily life.

By considering all of these components of the disorder, each drawn directly from the WHO's ICF model, clinicians can gain a greater understanding of not only the observable characteristics of the disorder, but also the experience of stuttering from the perspective of the speaker.

Because this model describes the totality of the stuttering disorder in the context of the widely accepted ICF framework, it provides an ideal foundation for the development of a comprehensive measurement instrument that can be used both in daily treatment and in outcomes research. The purpose of this manuscript is to present such an instrument, the *Overall Assessment of the Speaker's Experience of Stuttering (OASES)*. To establish the value of the OASES as a tool for supporting stuttering treatment research, the paper includes a detailed description of the development of the OASES, along with an explanation of the testing and validation of individual assessment items, a review of scoring procedures, and a summary of reliability and validity testing, involving more than 300 people who stutter, that was conducted with various forms of the instrument throughout its development.

It is important to note at the outset that the OASES was designed to *supplement* existing clinician-administered measures of the stuttering impairment. Thus, the OASES can be used alongside widely used measures such as the *Stuttering Severity Instrument* (Riley, 1994) or real-time frequency counting procedures (see reviews in Conture, 2001; Yaruss, 1997, 1998c) to provide a more complete account of the speaker's overall experience of the stuttering disorder. It is hoped that the availability of this type of broad-based measurement tool will facilitate the collection of more comprehensive data about the outcomes of stuttering treatment from the perspective of the individual who stutters and provide needed information supporting the use of evidence-based practice throughout the field of fluency disorders.

#### 4. Development and validation of the OASES

Development and validation of the OASES involved several stages, in which test items were individually evaluated, compared to one another, and refined. At the outset of the project, several key principles were defined in order to guide the development process and to ensure that the resulting product would provide a useful tool for supporting treatment outcomes research.

First, it was determined that the final instrument should consist of a pencil-and-paper measure that could be completed by people who stutter in a typical clinical setting. Thus, questions had to be clearly and simply worded, with minimal ambiguity, yet still maintain a sufficient degree of overlap between items and sections to ensure validity of results. Second, it was determined that the final product should be able to be administered and scored in a reasonable period of time to facilitate ease of use. This required that items be relatively limited in number, with a small number of selection options, and items should be organized in such a way that clinicians would be able to easily calculate scores without needing to refer to a complicated scoring procedure or key. Third, it was determined that the test items should describe the experiences of a broad cross-section of people who stutter. Thus, items that exhibited strong ceiling or floor effects (indicating that they were relevant only for a small percentage of people who stutter) were minimized, reworded, or eliminated in favor of more general questions that captured the common experiences of people who stutter. Finally, and perhaps most importantly, the OASES was designed to maintain a strong link to the WHO's theoretical frameworks for describing health experience. The instrument grew from an initial set of three individual tests, each examining a separate aspect of the WHO's framework, to a single broad-based tool designed to assess the entire stuttering disorder. The following sections provide details about the development and testing of the initial trial instruments, as well as the final version of the OASES, in order to establish the reliability and validity of the instrument and support its use for treatment outcomes research.

##### 4.1. Initial trial instruments: SRS, FCS, and QOL-S

To facilitate the analysis of the constructs defined by the WHO, the earliest versions of the OASES consisted of a set of three individual tests, each of which targeted a specific component of the WHO model. Because the work was begun prior to the publication of the current ICF framework, the original trial instruments were based on the WHO's original ICIDH. Following Yaruss's (1998a) adaptation of the ICIDH, the three specific components of the stuttering disorder that were targeted through the early trials were: (a) the speaker's perceptions about stuttering (*reactions*), (b) the speaker's difficulties communicating in daily situations (*disability and environment*), and (c) the overall impact of stuttering on the speaker's quality of life (*handicap*).

#### 4.1.1. Speaker's reactions to stuttering (SRS)

The first instrument was designed to gather information about how speakers felt about their speech, the actions they engaged in because of their stuttering, and their thoughts and perceptions about their communication difficulties. Initial drafts of the SRS were developed based on a review of existing instruments that examined people's reactions to stuttering (e.g., Brutton & Shoemaker, 1974; Erickson, 1969; Ornstein & Manning, 1985; Woolf, 1967). Following Cooper (1993) and others (e.g., Watson, 1988), these factors were described in terms of *affective* (e.g., negative feelings and emotions such as embarrassment, anxiety, and shame), *behavioral* (e.g., tension and struggle, avoidance), and *cognitive* (e.g., low self-esteem and negative self-evaluation) reactions. For the affective reactions section, a preliminary list of more than 75 different emotion labels was developed. This list was reviewed by focus groups involving more than 30 people who stutter, as well as by more than 20 specialists in the treatment of stuttering, to determine which seemed most relevant to people who stutter. Ultimately, a set of 20 specific "feeling" terms was selected for further evaluation. Similar procedures were followed in the development of the other components of the SRS draft: lists of behavioral and cognitive reactions were evaluated based on feedback from people who stutter and stuttering specialists, then refined and compiled to create the complete trial version of the SRS. This initial draft of the SRS contained a total of 100 items.

#### 4.1.2. Functional communication and stuttering (FCS)

The second trial instrument addressed the *disability* of stuttering, as well as the impact of the *environment* on the person's speech, by examining the difficulties people experienced when communicating in relevant situations in their lives. In some ways, this test was similar to some previously existing "attitude inventories" in that it examined the role that different environments or situations might play in affecting the speaker's ability to communicate effectively. Nevertheless, the "functional communication and stuttering" (FCS) scale differed from prior instruments in that it did not focus primarily on situational factors and it did not seek information about speaker's *fluency* in those situations. Instead, the FCS examined how much overall difficulty the speakers experienced in general when *communicating* in those situations (Frattali, Thompson, Holland, Wohl, & Ferketic, 1995). The FCS contained 35 items examining the speaker's challenges communicating in three key situations: (a) talking to other people in general, (b) communicating at work, and (c) interacting in social situations. As with the SRS, the initial lists of situations were refined based on feedback from focus groups of people who stutter and speech-language pathologists specializing in the diagnosis and treatment of stuttering.

#### 4.1.3. Quality of life and stuttering (QOL-S)

The third trial instrument examined the potential disadvantages people might experience because of stuttering (i.e., the *handicap*, according to the ICIDH) by assessing the impact of stuttering on speakers' overall quality of life. Quality of life is a broad measure that encompasses the speaker's satisfaction with his ability to communicate, the impact on the speaker's sense of well-being and satisfaction with life, and the effect of stuttering on factors such as the speaker's health and perceived ability to achieve goals in life. The initial items in the trial version were based, in part, on items found in other QOL instruments (e.g., Schipper, Clinch, & Powell, 1990; Schumaker, Anderson, & Czajkowski, 1990; Testa & Simonson, 1996; WHOQOL, 1995; see also Frattali, 1998b; Kaplan, Anderson, & Ganiats, 1993; McEwan, 1993). These constructs were then modified and expanded, based on input from the focus groups and specialist reviewers, so they applied more specifically to stuttering. The draft QOL-S instrument contained 30 items.

#### 4.2. Initial pilot studies: item analysis

The early SRS, FCS and QOL drafts were tested in a series of two pilot studies. The first pilot study, which involved 39 participants, many of whom were personal contacts of the authors. This initial study served primarily as an opportunity to further explore the opinions of the focus groups. Specific issues that were examined in the first pilot study included the wording of test items, the format and layout of the test forms, and the overall time required for test completion. Analyses involved only basic descriptive analyses of central tendency and dispersion; more extensive revisions were deferred until analysis of the second, more comprehensive pilot study. In the second pilot study, the first complete versions of SRS, FCS, and QOL-S were distributed to approximately 85 people who stutter through clinical and personal contacts, and with the assistance of the Research Committee of the National Stuttering Association. The instruments were distributed with a brief demographic questionnaire, a respondent comment form, and the S-24 scale (Andrews & Cutler, 1974) to provide a means of evaluating concurrent validity. A total of 71 packets were returned (84% return rate), and these responses were used to support more detailed item analyses.

The distributions of each of the items in the trial instruments were examined individually to ensure that they did not exhibit floor or ceiling effects, limited variability (i.e., a high proportion of individuals providing the same answer), non-normal distributions (i.e., noticeably skewed positively or negatively; highly leptokurtic, suggesting that most respondents provided “neutral” answers; or highly platykurtic, suggesting that responses were nearly random or uniform across respondents). In some cases, items were retained even if the analyses did not indicate a normal distribution because the items addressed constructs that the focus group discussions had previously revealed to be particularly relevant for a subset of respondents (e.g., items pertaining to feelings of guilt or questions about talking to children). Next, pairwise correlation analyses were conducted to ensure that items were not redundant. Items that exhibited Pearson product–moment correlation coefficients of 0.90 or above with any other item were eliminated, reworded, or combined. At the same time, reliability coefficients were calculated within each instrument to ensure that related items were examining related constructs. Cronbach’s alpha ranged from 0.93 to 0.96 within each instrument, indicating a high level of internal consistency. Finally, Pearson product–moment correlations were calculated *between* total scores for the different tests to ensure that the tests were not too similar to one another and that they were actually examining different aspects of the speaker’s experience of the stuttering disorder ( $r$  ranged from 0.76 to 0.83). Thus, results from these analyses demonstrate that each of the three instruments was focused on a single and unique construct representing a specific aspect of the stuttering disorder as defined by the WHO frameworks.

The initial pilot studies proved to be very helpful for guiding the future development of the instruments. For example, the initial version of the SRS examined both the *frequency* with which individuals experienced the various feelings and emotions that were sampled as well as the *strength* of those reactions to see if there was a difference in participants’ responses to these ways of viewing the occurrence of negative reactions. Pilot analyses revealed that respondents had difficulty consistently differentiating between the constructs of frequency and strength, so later versions focused only on how *frequently* the feelings were experienced. Also, the initial drafts of the SRS included both “positive” and “negative” feeling terms, though item analyses revealed that all of the “positive” terms were highly correlated with one another and strongly negatively correlated with the “negative” feeling terms. Furthermore, their presence introduced confusion in the scoring process so they were eliminated in later versions of the instrument. The initial pilot analysis for the FCS revealed that respondents had difficulty interpreting questions about how



much stuttering affected their ability to perform various activities. Specifically, it seemed that participants were responding to how much they stuttered in those situations (e.g., Ulliana & Ingham, 1984), rather than how much difficulty the stuttering introduced in their ability to communicate in those situations. As a result, all items in this section were reworded to examine overall “difficulty” of communication in various situations. Early versions of these tests also examined different anchoring terms and different scoring values for the anchoring terms (i.e., some items used higher point values to indicate negative impact, while other items used lower point values to indicate negative impact). Pilot analyses revealed that respondents were not consistent in following the anchoring terms, and this led to contradictions in their responses. Thus, later versions used a consistent set of anchoring terms, all with higher values indicating greater negative impact. Finally, the early versions of the scales tested both 7-point Likert scales with a variety of different anchoring terms, as well as 5-point versions with more consistent anchoring terms to enhance ease-of-use, and results of the initial pilot study were used to modify the wording of the anchoring terms. Comparison of the 7-point and 5-point pilot versions of the tests revealed that the 5-point versions maintained a sufficient degree of variability while improving ease-of-use and enhancing reliability. (For more information about the early development of the OASES, see Yaruss, 2001.)

#### 4.3. *Initial pilot studies: validity and reliability*

The SRS, FCS, and QOL-S were designed to examine aspects of the stuttering disorder that had not been thoroughly evaluated in standardized or criterion-referenced instruments. As a result, it was difficult to identify an existing set of measures for establishing validity. The S-24 (Andrews & Cutler, 1974) was selected to evaluate concurrent validity even though the SRS, FCS, and QOL-S examine a broader set of constructs than the S-24, and it was anticipated that correlations would be moderate in nature. Analyses yielded correlations ranging from 0.68 to 0.83 between the three instruments (SRS, FCS, and QOL-S) and the S24, with the highest correlation exhibited between the SRS and the S24. This was expected because the SRS contained the highest number of items that are similar in nature to the “attitudinal” items included in the S24. Content validity was established through responses from the focus groups, narrative responses from participants, and input from expert reviewers as described above to ensure that specific items were relevant for a large cross-section of people who stutter. Furthermore, the item analyses described above helped to ensure that all items were relevant to the experiences of people who stutter.

Finally, a preliminary assessment of test–retest reliability for these trial instruments was also conducted to ensure the stability of responses. Five individuals completed the SRS, FCS, QOL-S, and S24 on two occasions, separated by approximately 2 weeks. Responses were compared based on mean difference scores, correlations, and *t*-tests. Analyses confirmed many of the findings from the item analyses, specifically that respondents had some difficulty with the wording of certain items on the SRS and FCS scales, though reliability for most of the items was judged to be quite high (point-to-point agreement greater than 80%; responses within  $\pm 1$  for 97% of responses). Those few items that contributed to lower test–retest reliability scores were eliminated or reworded, and further reliability tests were conducted to ensure the overall reliability of the final instrument (see below).

#### 4.4. *First integrated instrument: CASES*

As a result of these pilot analyses, redundant or confusing items were eliminated or reworded. In some cases, entire sections were modified to ensure that the subsections were more tightly

integrated. Changes were also made to accommodate the revised structure and purpose of the WHO's ICF, which had been published during the completion of the pilot analyses described in the previous section. Terminology from the ICIDH was replaced by the ICF terminology, and some items were further refined to ensure consistency with the language of the new framework (see Yaruss & Quesal, 2004a). To facilitate further analyses, the resulting instruments were combined into a single tool encompassing all three of the previously described instruments. In addition, a new *general information* section was added in order to gather information about the speaker's self-perceptions and self-ratings of fluency (i.e., the impairment in body function as defined in the ICF), as well as speech naturalness, ease of communication, knowledge about stuttering, and general opinions and attitudes about stuttering. This addition allowed the tool to serve as a "Comprehensive Assessment of the Speaker's Experience of Stuttering" or CASES. It is worth noting that there was some expected overlap between the general concepts considered in this new general information section and the specific topics examined in more detail in other components of the instrument, though this was done intentionally to help clinicians and researchers evaluate the reliability of the respondents' answers.

The trial version of the CASES contained a total of 100 items on 5-point Likert scales, organized into four sections: *General Information*, *Reactions to Stuttering*, *Communication in Daily Situations*, and *Quality of Life*. Together, these four sections maintained a tight integration with the WHO's ICF: the general information section addressed the speaker's experience of *impairment in body function*, the reactions section addressed *personal contextual factors*, the communication abilities section addressed both *in daily activities* and the impact of *environmental contextual factors*, and the quality of life section addressed *restrictions in the person's ability to participate in life*.

#### 4.5. Additional pilot analyses and final revisions

To examine the reliability and validity of the integrated CASES instrument, substantial additional pilot analyses were completed using a larger sample of respondents than the earlier pilot studies described above. Every attempt was made to obtain a respondent group that would represent a broad and varied cross-section of people who stutter. Unfortunately, however, it is difficult, if not impossible, to obtain a truly random sample of people who stutter, for respondents in any such study must be identified either through clinical contacts or through some other means that would require self-selection.

Accordingly, participants for this pilot study were drawn, in part, from a mailing list of 500 individuals provided by the National Stuttering Association (NSA). It could be argued that selecting a portion of the study population from the NSA mailing list might introduce some bias into the findings. Still, a more careful consideration reveals that it is unlikely that a consistent bias would be introduced through the use of this mailing list as a starting place for identifying study participants. Research has shown that individuals on the NSA mailing list come from many different backgrounds (McClure & Yaruss, 2003) and have widely varying opinions about stuttering (Yaruss, Quesal, & Murphy, 2002). Individuals on the NSA mailing list also report having vastly different experiences, both in and out of therapy (Yaruss, Quesal, & Reeves et al., 2002). Furthermore, a recent survey of the NSA membership (McClure & Yaruss, 2003) revealed that most of the individuals on the NSA mailing list are not actually *members* of a local support group, and that the majority are not active participants in NSA events. Indeed, based on available demographic information for this study, nearly 60% of the respondents identified through the NSA mailing list were not active participants in the organization. To further

minimize the likelihood that the sample would be affected by selection biases, the respondent population also included other individuals who stutter *not* affiliated in any way with the NSA. These individuals were recruited from around the country through professional and clinical contacts. In all, more than 550 people who stutter received the trial CASES as part of this third pilot study.

Ultimately, 183 forms were obtained for data analysis. Of these, six were excluded because respondents were less than 18 years of age, and four were excluded because the forms were not completed at all or because only a few items were marked. (If a respondent did not complete at least one of the four sections in its entirety that form was discarded.) As a result, data analyses were based upon responses from 173 adults who stutter (ages 18–70 years) who completed and returned the draft CASES forms. Although this represents a relatively low overall response rate (approximately 30%), it was determined that the total number of responses was still sufficient to permit descriptive analyses of the results for individual test items, as well as to allow adequate power in the analyses of potential relationships between test sections.

Prior to the data analyses, each of the forms was examined individually to ensure that the form was completed correctly. Occasionally, respondents skipped entire sections of the test, so those sections were excluded ( $N = 6$  sections out of a possible 692 sections [ $173$  respondents  $\times$  4 sections per form] or 0.87% of the total number of sections). In addition, some respondents provided the same answer to all of the items within one of the four major sections of the instrument (e.g., answering all 30 of the items relating to quality of life with a 1 or a 5). Although this could reflect the true nature of the individual's responses (e.g., for a person who perceives absolutely no negative impact of stuttering or who experiences no difficulty in communicating in any speaking situations), it was determined that such sections should be discarded—only for the purposes of assessing the reliability of the test items—because of the possibility that the respondent was simply not paying careful attention to completing that section of the form. A total of 12 sections out of a possible 692 sections (1.7% of the total number of sections) were discarded for this reason. Note that the entire form was not discarded; only the section with questionable responses was excluded from analysis. In total, 18 individual sections (2.6% of all sections) across 14 respondents (8.1% of all respondents) had at least one section of their forms discarded because they did not complete a section or because they provided the same answer to all items with the section.

As with the initial draft versions, detailed individual item analyses were conducted to confirm that the items in the CASES did not exhibit floor or ceiling effects, limited variability, or non-normal distributions. Note that for the vast majority of the items, this was the third time such data were analyzed, for the items had already been studied in the first two pilot studies of the SRS, FCS, and QOL. As a result, it was anticipated that most items would show the desired statistical properties. All but 4 of the 100 items exhibited ranges from the minimum possible score of 1 to the maximum possible score of 5, with a mean score across items ranging from 1.7 to 3.5 (S.D. ranging from 0.75 to 1.6). Skewness values ranged from  $-0.5$  to  $1.5$  ( $mean = 0.3$ ; S.D. = 0.4) and kurtosis ranged from  $-1.4$  to  $1.7$  ( $mean = -0.6$ , S.D. = 0.5). None of the items exhibited unusually high or low values of kurtosis. Items that exhibited skewness values greater than 1.0 ( $N = 5$  of the 100 items) were examined individually to identify the reason the distribution was non-normal. It was determined that the non-normal distributions were expected for each of these five specific items because they targeted factors that were relevant for a subset of respondents, but not for all respondents (e.g., the difficulty experienced in educational settings, difficulties communicating with children, etc.). Thus, these particular items were retained in the instrument even though responses were not as evenly distributed as other items.

Pairwise correlations were calculated among all items to ensure that items were not redundant. As before, a maximum pairwise correlation for items within a given section of the CASES was set at 0.90, and Pearson product–moment correlation coefficients ranged from 0.01 to 0.89), so no further revisions to the items were necessary for this reason. Also, as before, correlations were calculated for total scores *between* the four sections of the CASES to ensure that the different sections were not too similar. Pearson  $r$  values ranged from 0.66 to 0.85, with the highest correlation observed between total scores on *reactions* and *quality of life* sections. Again, this finding confirmed that the individual sections of the instrument were not simply evaluating the same constructs. Finally, Cronbach's alpha coefficient, calculated independently for each of the four sections of the instrument, revealed strong internal reliability ( $\alpha$  ranged from 0.92 to 0.97) and a high degree of probability that the items within each section were addressing the same constructs.

These analyses confirmed that all of the test items exhibited appropriate reliability and validity to support the use of the instrument in both clinical and research applications. Again, however, based on the analyses, as well as feedback from expert reviewers and respondents, a few very minor wording changes were made to specific items on the instrument. The resulting final version of the revised instrument was renamed the *Overall Assessment of the Speaker's Experience of Stuttering* (OASES). The next section describes in more detail the final format of the OASES instrument, the scoring procedures that were developed to allow the use of the instrument in treatment outcomes research, and the final reliability and validity analyses that were completed.

## 5. The Overall Assessment of the Speaker's Experience of Stuttering

The final version of the OASES consists of 100 items, each scored on a Likert scale ranging from 1 to 5. The instrument, which requires approximately 20 min to complete, is organized into four sections: (a) *General Information*, (b) *Reactions to Stuttering*, (c) *Communication in Daily Situations*, and (d) *Quality of Life*. Section I (General information) contains 20 items pertaining to speakers' perceived fluency and speech naturalness, knowledge about stuttering and stuttering therapy, and overall perceptions about stuttering in general. Section II (Reactions) contains 30 items examining speakers' affective, behavioral, and cognitive reactions. Section III (Communication in daily situations) contains 25 items assessing the degree of difficulty speakers have when communicating in general situations, at work, in social situations, and at home. Note that these items specifically examine the communication *difficulty* speakers experience in these situations, not their *fluency* in the situations. Section IV (Quality of life) contains 25 items about how much stuttering interferes with speakers' satisfaction with their ability to communicate, their relationships, their ability to participate in their lives, and their overall sense of well-being. A sample completed OASES, with actual data from one of the respondents in the validity testing sample, is shown in [Appendix A](#).

### 5.1. Scoring procedures

For each item on the OASES, response scales are organized so that higher scores indicate a greater degree of negative impact associated with stuttering and lower scores indicate less negative impact. Although this organization could possibly introduce some responder bias, it was determined that this was necessary to maintain ease of scoring for the practitioner using this test in a typical clinical setting.

Because not all of the items on the OASES apply to all individuals who stutter (e.g., not all respondents will have children), respondents must skip those items that are not relevant for them. As a result, scoring could not simply be based on a sum of the number of points in each section. (Note that in the example in [Appendix A](#), the respondent did not complete all items for Parts III and IV.) To ensure that skipped items would not affect total scoring, two scoring rules were established. First, it was determined that an individual section should only be scored if the respondent has completed at least one-half of the items in that section. Second, a straightforward scoring procedure was developed based on the calculation of a ratio of the total number of points in the respondents' answers divided by the total number of points possible for the items that were completed.

Calculating this "impact score" involves three steps: First, the clinician calculates the number of points in the respondent's answers on a section-by-section basis. Second, the clinician counts the total number of *items* the respondent completed on each section and multiplies the values by 5 (since each item is based on a 5-point scale) to obtain the number of possible points in each section. Third, the clinician divides the number of points in the respondent's scores by the number of possible points. This value is then multiplied by 100. For example, if a respondent answered 18 out of the 20 items in Section I, and his total number of points for Section I was 67, then the maximum possible score for Section I would be  $18 \times 5 = 90$ , and his ratio for Section I would be  $67/90 = 0.744$ . When this value is multiplied by 100, the result is an impact score of 74.4. Because of this scoring procedure, all impact scores range from a minimum score of 20 (if the speaker answers 1 for every item within a section) up to a maximum of 100 (if the speaker answers 5 for every item within the section). This is true regardless of the number of items a speaker might skip and regardless of whether the clinician is scoring just one section at a time or the entire instrument. To facilitate the calculation of impact scores, a scoring summary sheet is provided as the last page of the OASES.

## 5.2. Impact ratings

Many clinicians and researchers are accustomed to providing severity ratings as part of their description of clients or study participants. Data from the OASES do not yield an index of stuttering severity, per se. Rather, scores provide an indication of the *impact* of stuttering on various aspects of the speaker's life. In order to develop an "impact rating" that would be analogous to a traditional severity rating, analyses were conducted on the pilot data to determine if scores could be divided into logical groups representing differing degrees of stuttering impact (mild, mild-to-moderate, moderate, moderate-to-severe, severe).

Based on the distribution of the pilot data across participants, these groupings were defined based on the degree of variability around the mean, specifically: more than 1.5S.D. below the mean (mild impact), between 1.5S.D. and 0.5S.D. below the mean (mild-to-moderate impact), between 0.5S.D. below the mean and 0.5S.D. above the mean (moderate impact), 0.5S.D. to 1.5S.D. above the mean (moderate-to-severe impact), and more than 1.5S.D. above the mean (severe impact). Separating the data in this fashion resulted in a relatively normal distribution of impact ratings for the pilot data, with the "mild" and "severe" impact ratings each accounting for 8% of the overall distribution of the respondents' data, the "mild-to-moderate" and "moderate-to-severe" impact ratings each accounting for 26% of the data, and the "moderate" impact rating accounting for 32% of the data. Note that some rounding was used in the calculation of specific cut-off values of the impact scores to facilitate scoring and to account for the fact that the distributions of the impact scores were not exactly the same for each of the four sections of the instrument. These impact ratings and the corresponding impact scores are shown in [Table 1](#) and in the scoring form

Table 1  
OASES impact ratings and cut-off scores

Impact rating	Impact scores
Mild	20.0–29.9
Mild-to-moderate	30.0–44.9
Moderate	45.0–59.9
Moderate-to-severe	60.0–74.9
Severe	75.0–100

included in [Appendix A](#). Also, to facilitate scoring, the same impact score cut-off values were used for each individual section of the OASES, as well as for the overall impact score provided for the entire instrument. (As shown in [Appendix A](#), this overall score is obtained by combining scores across all four components of the instrument, with each of the different sections assigned equal weighting.)

Although the impact ratings may be viewed as a type of severity index, it is still important to consider all of the responses to the individual items in the instrument rather than focusing just on the label provided by the impact rating. This is true both for treatment planning and for the evaluation of treatment outcomes. For this reason, impact scores are calculated separately for each of the four sections of the instrument, as well as for the instrument as a whole. If used cautiously, these impact ratings can provide a means of communicating general information about a speaker's experience of stuttering to others.

### 5.3. Final evaluation of reliability

After the wording of all items was finalized and the procedure for calculating impact scores and ratings was developed, the OASES was subjected to one final round of reliability tests. Recall that very few changes were made to the CASES instrument in the creation of the OASES, so these final reliability analyses were conducted simply to confirm the findings of all of the pilot studies conducted on the earlier drafts and to assess test–retest reliability of the impact scores. The OASES was distributed to 20 adults who stutter through professional and clinical contacts. Fourteen respondents (70% response rate; *mean* age of respondents = 45.4 years; S.D. = 9.26 years; range = 22–65 years) completed the instrument on two occasions separated by 10–14 days, with no intervening therapy during the retest period.

Based on this sample, test–retest reliability was examined in several ways. First, point-to-point agreement was assessed individually for each item on the instrument. Note that it was expected that not all of the responses would be identical across administrations, for the difference between a score of a 4 or a 5 on a particular item could be affected by a variety of factors (e.g., the individual's experience during the time between the first and second testing, the individual's "mood" or attitude on the day of testing, etc.). Thus, the more important question for the test–retest analysis was whether the variability between test administrations would yield differences that could affect the overall results provided by the instrument (e.g., the impact scores or impact ratings).

Analyses revealed that participants' scores on individual items were identical for 77.7% of all of the 1399 responses provided by the 14 participants and within  $\pm 1$  for 98.5% of all responses. Thus, the vast majority of responses indicated strong consistency from one test

administration to the next. These results were confirmed by findings of very small mean differences for individual responses across administrations for each of the four parts of the OASES (mean differences for each part of the OASES across all 14 participants ranged from 0.21 to 0.28; standard error ranged from 0.05 to 0.07). Next, impact scores were compared for each of the four parts of the instrument, as well as for the overall instrument. Analyses revealed a high degree of test–retest reliability for impact scores, with mean differences ranging from 2.1 to 3.0 (standard error ranged from 1.98 to 2.65). Pearson product–moment correlations for impact scores obtained from the first and second administration of the instrument ranged from 0.90 to 0.97 for each of the 14 respondents. Finally, impact ratings were compared. Because of the high degree of reliability for the impact scores, comparison of the impact ratings also revealed strong reliability between initial and follow-up administrations of the OASES. None of the impact ratings for the 14 participants changed from the first to second administration of the instrument. Thus, it is clear from the detailed description of the development and validation of the instrument described above that the final version of the OASES exhibits strong reliability and validity that are sufficient to support its use in the evaluation of stuttering treatment outcomes.

## 6. Discussion

The purpose of this paper has been to present a new instrument for measuring the overall impact of stuttering through assessment of multiple aspects of the disorder. The *Overall Assessment of the Speaker's Experience of Stuttering* (OASES) seeks to accomplish this goal by focusing on the speaker's experience of stuttering, as defined, in part, by the WHO's ICF framework. Specific factors that are addressed include: the speaker's self-perception of fluency, stuttering, and speech naturalness, as well as the speaker's knowledge about the disorder and overall attitudes about stuttering (Section I); the speaker's affective, behavioral, and cognitive reactions to the disorder (Section II); the functional communication difficulties experienced by the speaker in different communication environments (Section III); and the speaker's judgment of how stuttering affects overall quality of life (Section IV). As such, the OASES is designed to supplement commonly used clinician-based measures of speech fluency and naturalness in order to describe the experience of the stuttering disorder from the perspective of the speaker.

As noted above, numerous other instruments have been developed over the years to assess various aspects of the stuttering disorder. Each of these instruments has unique strengths and specific areas of focus. For example, the *Speech Situation Checklist* (SSC; Brutton & Shoemaker, 1974) provides information about a client's speech-related anxiety in different speaking situations. The *Self-Efficacy Scale for Adults Who Stutter* (SESAS; Ornstein & Manning, 1985) provides information about a speaker's confidence that he or she will be able to enter and maintain fluency in different situations. Broadly defined communication "attitudes" are examined Erickson's *S-Scale* (Erickson, 1969) and the *S-24* (Andrews & Cutler, 1974), and more specific affective, behavioral, and cognitive aspects of stuttering are assessed in the *Inventory of Communication Attitudes* (ICA; Watson, 1988). More recently, Riley et al. (2004) presented the *Subjective Stuttering Screening of Stuttering* (SSS), which examines the speaker's self-rated stuttering severity, internal or external locus of control, and avoidance of words or situations. Finally, one of the most notable recent additions to the list of instruments designed to assess various aspects of the stuttering disorder is the *Wright-Ayer Stuttering Self Rating Profile* (WASSP; Wright & Ayre, 2000). Like the OASES, the WASSP is based on the WHO's ICF framework, so it seeks to describe the entire disorder, though

not with the same degree of detail as that seen in the OASES. Specifically, the WASSP contains a total of 24 items that assess the speaker's perceptions of stuttering behaviors, negative thoughts and feelings about stuttering, avoidance of speaking situations, and "disadvantage" experienced because of stuttering.

It is the present authors' opinion that the use of *all* of these instruments (as well as others that have not been listed here) would significantly enhance clinicians' and researchers' understanding of how the disorder affects individuals who stutter. Of course, it would not be feasible to utilize such a broad spectrum of assessments on a regular basis. Thus, one of the authors' primary goals in developing the OASES has been to encourage broad-based assessment of the speaker's experience of stuttering through the use of a single, comprehensive, easy-to-use but detailed measurement instrument that could be used both in treatment planning and in treatment outcomes research.

To ensure that the instrument would assess the totality of the disorder, the OASES was based on a widely accepted and validated framework that is used throughout the fields of health and rehabilitation (i.e., the WHO's *ICF*). To ensure a high degree of reliability and validity of the instrument, the OASES was subjected to extensive testing and refinement. Specifically, focus groups of people who stutter and expert reviews by numerous stuttering specialists helped to verify content and construct validity. A series of pilot studies, which, together, included a total of more than 300 adults who stutter, helped to ensure the usability of the instrument and provided data to support evaluation of test items. Although it is possible that the nature of the validation sample may have introduced some bias in the test items, detailed item analyses ensured the reliability of individual items and minimized the likelihood of consistent bias across subsections of the instrument. Finally, statistical analyses demonstrated the internal consistency of the four sections of the OASES while assuring that the sections do indeed examine relatively independent constructs.

Through this effort, the OASES has evolved into a single, tightly integrated and theoretically motivated tool that provides clinicians and researchers with critical information about the speaker's experience of the stuttering disorder. It is hoped that widespread use of this new tool will enhance the ability of clinicians and researchers to conduct more thorough empirical evaluations of the outcomes of stuttering treatment. This will increase the knowledge base about the results of broad-based treatment approaches for stuttering and provide the opportunity for researchers to more appropriately evaluate the outcomes of treatments that address factors in addition to the observable aspects of a speaker's fluency.

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Questions or comments about the OASES are welcome.



## Appendix A. Sample OASES Form

### Overall Assessment of the Speaker's Experience of Stuttering (OASES)

Name: Sample Age: XX Sex:  M  F Date: 2005

*Instructions.* This test consists of four sections that examine different aspects of your experience of stuttering. Please complete each item by circling the appropriate number. If an item does not apply to you, leave it blank and move on to the next item.

#### Section I: General Information

A. General information about your speech.	Always	Frequently	Sometimes	Rarely	Never
1. How often are you able to speak fluently?	1	2	3	<input checked="" type="checkbox"/> 4	5
2. How often does your speech <i>sound</i> "natural" to you (i.e., like the speech of other people)?	1	2	<input checked="" type="checkbox"/> 3	4	5
3. How consistently are you able to maintain fluency from day to day?	1	2	3	<input checked="" type="checkbox"/> 4	5
4. How often do you use techniques, strategies, or tools you learned in speech therapy?	1	2	3	4	<input checked="" type="checkbox"/> 5
5. How often do you say exactly what you want to say even if you think you might stutter?	1	2	3	<input checked="" type="checkbox"/> 4	5

B. How <u>knowledgeable</u> are you about... ?	Extremely	Very	Somewhat	A Little	Not At All
1. Stuttering in general	1	2	3	<input checked="" type="checkbox"/> 4	5
2. Factors that affect stuttering	1	2	3	<input checked="" type="checkbox"/> 4	5
3. What happens with your speech when you stutter	1	2	3	4	<input checked="" type="checkbox"/> 5
4. Treatment options for people who stutter	1	2	3	<input checked="" type="checkbox"/> 4	5
5. Self-help or support groups for people who stutter	1	2	3	<input checked="" type="checkbox"/> 4	5

C. Overall, how do you <u>feel</u> about... ?	Very Positively	Somewhat Positively	Neutral	Somewhat Negatively	Very Negatively
1. Your speaking ability	1	2	3	<input checked="" type="checkbox"/> 4	5
2. Your ability to communicate (i.e., to get your message across regardless of your fluency)	1	2	<input checked="" type="checkbox"/> 3	4	5
3. The way you sound when you speak	1	2	3	<input checked="" type="checkbox"/> 4	5
4. Techniques for speaking fluently (e.g., techniques learned in therapy)	1	2	3	<input checked="" type="checkbox"/> 4	5
5. Your ability to <b>use</b> techniques you learned in speech therapy	1	2	3	<input checked="" type="checkbox"/> 4	5
6. Being a person who stutters	1	2	3	4	<input checked="" type="checkbox"/> 5
7. The speech therapy program you attended most recently	1	2	<input checked="" type="checkbox"/> 3	4	5
8. Being identified by other people as a stutterer/person who stutters	1	2	3	<input checked="" type="checkbox"/> 4	5
9. Variations in your speech fluency in different situations	1	<input checked="" type="checkbox"/> 2	3	4	5
10. Self-help or support groups for people who stutter	1	<input checked="" type="checkbox"/> 2	3	4	5

## Section II: Your Reactions to Stuttering

A. When you think about your stuttering, how often do you feel...? (Note: please complete both columns in this section)											
	Never	Rarely	Sometimes	Often	Always		Never	Rarely	Sometimes	Often	Always
1. helpless	1	2	5	4	5	6. depressed	1	2	5	4	5
2. angry	1	2	3	4	5	7. defensive	1	2	3	4	5
3. ashamed	1	2	3	4	5	8. embarrassed	1	2	3	4	5
4. lonely	1	2	5	4	5	9. guilty	1	2	3	4	5
5. anxious	1	2	3	4	5	10. frustrated	1	2	3	4	5

B. How often do you...?	Never	Rarely	Sometimes	Frequently	Always
1. Experience physical tension when stuttering	1	2	3	4	5
2. Experience physical tension when speaking fluently	1	2	3	4	5
3. Exhibit eye blinks, facial grimaces, arm movements, etc. when stuttering	1	2	5	4	5
4. Break eye contact or avoid looking at your listener	1	2	3	4	5
5. Avoid speaking in certain situations or to certain people	1	2	3	4	5
6. Leave a situation because you think you might stutter	1	2	3	4	5
7. Not say what you want to say (e.g., avoid or substitute words, refuse to answer questions, order something you do not want because it is easier to say)	1	2	3	4	5
8. Use filler words or starters (e.g., "um," clearing throat), or change something about your speech (e.g., use an accent) to be more fluent. (Note: this does not refer to techniques you may have learned in therapy.)	1	2	3	4	5
9. Experience a period of increased stuttering just after you stutter on a word	1	2	3	4	5
10. Let somebody else speak for you	1	2	5	4	5

C. To what extent do you agree or disagree with the following statements.	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1. I think about my stuttering nearly all the time.	1	2	3	4	5
2. People's opinions about me are based primarily on how I speak.	1	2	3	4	5
3. If I did not stutter, I would be better able to achieve my goals in life.	1	2	3	4	5
4. I do not want people to know that I stutter.	1	2	3	4	5
5. When I am stuttering, there is nothing I can do about it.	1	2	3	4	5
6. People should do everything they can do to keep themselves from stuttering.	1	2	3	4	5
7. People who stutter should not take jobs that require a lot of speaking.	1	2	3	4	5
8. I do not speak as well as most other people.	1	2	3	4	5
9. I cannot accept the fact that I stutter.	1	2	3	4	5
10. I do not have confidence in my abilities as a speaker.	1	2	3	4	5

### Section III: Communication in Daily Situations

(In this section, indicate how much *difficulty* you experience in these situations, *not* how fluent you are.)

A. How difficult is it for you to communicate in the following general situations?	Not at all Difficult	Not Very Difficult	Somewhat Difficult	Very Difficult	Extremely Difficult
1. Talking with another person "one-on-one"	1	2	3	4	5
2. Talking while under time pressure	1	2	3	4	5
3. Talking in front of a small group of people	1	2	3	4	5
4. Talking in front of a large group of people	1	2	3	4	5
5. Talking with people you <i>do</i> know well (e.g., friends)	1	2	3	4	5
6. Talking with people you <i>do not</i> know well (e.g., strangers)	1	2	3	4	5
7. Talking on the telephone in general	1	2	3	4	5
8. Initiating conversations with other people (e.g., introducing yourself)	1	2	3	4	5
9. Continuing to speak regardless of how your listener responds to you	1	2	3	4	5
10. Standing up for yourself verbally (e.g., defending your opinion, challenging someone who cuts in line in front of you)	1	2	3	4	5

B. How difficult is it for you to communicate in the following situations at work?	Not at all Difficult	Not Very Difficult	Somewhat Difficult	Very Difficult	Extremely Difficult
1. Using the telephone at work	1	2	3	4	5
2. Giving oral presentations or speaking in front of other people at work	1	2	3	4	5
3. Talking with co-workers or other people you work with (e.g., participating in meetings)	1	2	3	4	5
4. Talking with customers or clients	1	2	3	4	5
5. Talking with your supervisor or boss	1	2	3	4	5

C. How difficult is it for you to communicate in the following social situations?	Not at all Difficult	Not Very Difficult	Somewhat Difficult	Very Difficult	Extremely Difficult
1. Participating in social events (e.g., making "small talk" at parties)	1	2	3	4	5
2. Telling stories or jokes	1	2	3	4	5
3. Asking for information (e.g., asking for directions or other people's opinions)	1	2	3	4	5
4. Ordering food in a restaurant	1	2	3	4	5
5. Ordering food at a drive-thru	1	2	3	4	5

D. How difficult is it for you to communicate in the following situations at home?	Not at all Difficult	Not Very Difficult	Somewhat Difficult	Very Difficult	Extremely Difficult
1. Using the telephone at home	1	2	3	4	5
2. Talking to your spouse / significant other	1	2	3	4	5
3. Talking to your children	1	2	3	4	5
4. Talking to members of your extended family	1	2	3	4	5
5. Taking part in family discussions	1	2	3	4	5

## Section IV: Quality of Life

A. How much is your overall quality of life negatively affected by...?	Stuttering <i>negatively affects</i> my quality of life...				
	Not At All	A Little	Some	A Lot	Completely
1. Your stuttering	1	2	3	<input checked="" type="checkbox"/> 4	5
2. Your reactions to your stuttering	1	2	3	<input checked="" type="checkbox"/> 4	5
3. Other people's reactions to your stuttering	1	2	<input checked="" type="checkbox"/> 3	4	5

B. Overall, how much does stuttering interfere with your satisfaction with communication...?	Stuttering <i>interferes</i> with my communication satisfaction...				
	Not At All	A Little	Some	A Lot	Completely
1. In general	1	2	3	<input checked="" type="checkbox"/> 4	5
2. At work	1	2	<input checked="" type="checkbox"/> 3	4	5
3. In social situations	1	2	3	<input checked="" type="checkbox"/> 4	5
4. At home	1	<input checked="" type="checkbox"/> 2	3	4	5

C. Overall, how much does stuttering interfere with your...?	Stuttering <i>interferes</i> with my relationships...				
	Not At All	A Little	Some	A Lot	Completely
1. Relationships with family	<input checked="" type="checkbox"/> 1	2	3	4	5
2. Relationships with friends	1	<input checked="" type="checkbox"/> 2	3	4	5
3. Relationships with other people	1	2	<input checked="" type="checkbox"/> 3	4	5
4. Intimate relationships	1	2	<input checked="" type="checkbox"/> 3	4	5
5. Ability to function in society	1	<input checked="" type="checkbox"/> 2	3	4	5

D. Overall, how much does stuttering interfere with your...?	Stuttering <i>interferes</i> with my career...				
	Not At All	A Little	Some	A Lot	Completely
1. Ability to do your job	<input checked="" type="checkbox"/> 1	2	3	4	5
2. Satisfaction with your job	1	2	3	4	5
3. Ability to advance in your career	1	2	<input checked="" type="checkbox"/> 3	4	5
4. Educational opportunities	1	2	<input checked="" type="checkbox"/> 3	4	5
5. Ability to earn as much as you feel you should	1	2	3	<input checked="" type="checkbox"/> 4	5

E. Overall, how much does stuttering interfere with your...?	Stuttering <i>interferes</i> with my personal life...				
	Not At All	A Little	Some	A Lot	Completely
1. Sense of self-worth or self-esteem	1	2	3	<input checked="" type="checkbox"/> 4	5
2. Overall outlook on life	1	2	3	<input checked="" type="checkbox"/> 4	5
3. Confidence in yourself	1	2	3	<input checked="" type="checkbox"/> 4	5
4. Enthusiasm for life	1	2	3	<input checked="" type="checkbox"/> 4	5
5. Overall health and physical well-being	1	<input checked="" type="checkbox"/> 2	3	4	5
6. Overall stamina or energy level	<input checked="" type="checkbox"/> 1	2	3	4	5
7. Sense of control over your life	1	2	<input checked="" type="checkbox"/> 3	4	5
8. Spiritual well-being	1	<input checked="" type="checkbox"/> 2	3	4	5

## Overall Assessment of the Speaker’s Experience of Stuttering (OASES)

### Scoring Summary

*Instructions.* Calculate **Impact Scores** for each of the 4 sections on the OASES by (a) totaling the number of points in each section and (b) counting the number of items completed in each section. Multiply the number of items completed by 5 to obtain the total points *possible* for each section. The impact score for each section is equal to 100 times the points in each section divided by the total points possible for that section. (Impact scores will always range between 20 and 100.) Determine **Impact Ratings** for each section based on the impact scores in the table at the bottom of the page.

Name: Sample Age: XX Sex:  F Date: 2005

**Section I: General Information (20 Items Total)**  
 Section I Points: 76 Items Completed in Section I: 20  
 Section I Points Possible (Section I Items Completed × 5): 100  
**Section I Impact Score:** 76 **Impact Rating:** Severe

**Section II: Reactions to Stuttering (30 Items Total)**  
 Section II Points: 117 Items Completed in Section II: 30  
 Section II Points Possible (Section II Items Completed × 5): 150  
**Section II Impact Score:** 78 **Impact Rating:** Severe

**Section III: Communication in Daily Situations (25 Items Total)**  
 Section III Points: 74 Items Completed in Section III: 24  
 Section III Points Possible (Section III Items Completed × 5): 120  
**Section III Impact Score:** 61.7 **Impact Rating:** Moderate-to-Severe

**Section IV: Quality of Life (25 Items Total)**  
 Section IV Points: 70 Items Completed in Section IV: 24  
 Section IV Points Possible (Section IV Items Completed × 5): 120  
**Section IV Impact Score:** 58.3 **Impact Rating:** Moderate

**TOTAL IMPACT SCORE (100 Items Total)**  
 Total Points: 337 Total Items Completed: 98  
(Total Points = Section I Points + Section II Points + Section III Points + Section IV Points)  
 (Total Items Completed = Section I Items Completed + Section II Items Completed + Section III Items Completed + Section IV Items Completed)  
 Total Points Possible (Total Items Completed × 5): 490  
**Total Impact Score:** 68.8 **Impact Rating:** Moderate-to-Severe

Impact Rating	Impact Scores
Mild	20.0 – 29.9
Mild-to-Moderate	30.0 – 44.9
Moderate	45.0 – 59.9
Moderate-to-Severe	60.0 – 74.9
Severe	75.0 – 100

## CONTINUING EDUCATION

### Overall Assessment of the Speaker's Experience of Stuttering (OASES): Documenting multiple outcomes in stuttering treatment

#### QUESTIONS

1. According to the article, it has been difficult to employ evidence-based practice in stuttering treatment because . . .
  - a. no measurement scales exist for evaluating the complex stuttering disorder
  - b. measurement scales exist for assessing stuttering, but they have not been widely used in treatment outcomes research
  - c. the existing evidence in the literature focuses primarily on a certain subset of treatment approaches
  - d. (b) and (c)
  - e. (a) and (c)
2. The ICF can be used to provide:
  - a. a common language for discussing disorders throughout the health sciences
  - b. a framework for considering multiple outcomes in treatment
  - c. a starting place for understanding the broad-based nature of stuttering
  - d. a template for creating a multidimensional measurement tool for assessing disorders
  - e. all of the above
3. The OASES was designed:
  - a. To demonstrate that fluency shaping treatments are effective
  - b. To demonstrate that stuttering modification treatments are effective
  - c. To facilitate evaluation of multiple outcomes in stuttering therapy
  - d. and (b)
  - e. (a), (b), and (c)
4. Development of the OASES involved . . .
  - a. random selection of participants who stutter
  - b. comparison of people who stutter with people who do not stutter
  - c. validity and reliability assessment based on a large sample of people who stutter
  - d. comparison of test scores with the frequency of stuttering exhibited by participants
  - e. all of the above
5. Development of the OASES was guided by the following principle(s):
  - a. the instrument should be a pencil-and-paper measure that could be completed in a typical clinical setting
  - b. the instrument should be able to be administered and scored by a clinician in a reasonable period of time
  - c. the instrument should reflect the entirety of the speaker's experience of the stuttering disorder
  - d. the instrument should maintain a strong link with the WHO's ICF
  - e. all of the above

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