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Understanding the Speaker's Experience of Stuttering Can Improve Stuttering Therapy

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This article highlights the value for speech–language pathologists of considering the overall stuttering condition—including speakers' experiences during and around moments of stuttering—in treatment with individuals who stutter. We first highlight a framework for conceptualizing the entirety of the stuttering condition. We then present recent research and clinical perspectives about stuttering to support the claim that speech–language pathologists who account for individual differences in how their clients experience stuttering are better positioned to treat stuttering more effectively. Ultimately, this will yield better treatment outcomes and help clinicians achieve greater gains in quality of life for their clients who stutter. **Key words:** *impact*, *stuttering*, *therapy*, *treatment*

FOR DECADES, researchers and clinicians have highlighted the importance of describing and conceptualizing stuttering in its many facets. Much of this work has focused on disruptions or "disfluencies" that listeners may observe in the speech of people who stutter; these disfluencies are typically referred to as *stuttering* or stuttering behavior (Conture, 1990; Cooper, 1968; Gregory et al., 2003; Wingate, 1964, 2001; Yairi, 2001; Yairi & Ambrose, 2005). From the perspective of a person who stutters, however, the experience of stuttering involves far more than the production of stuttered speech (Cooper, 1968, 1977; Johnson, 1961b; Sheehan, 1970; Sheehan & Sheehan, 1984; Tichenor & Yaruss, 2018, 2019b; Van Riper, 1982; Yaruss, 1998; Yaruss & Quesal, 2004). The focus of this article is to highlight how understanding these broader aspects of living with stuttering can help speech–language pathologists (SLPs) improve their therapy and interactions with people who stutter. (Note that in this article, we are referring to "Childhood Onset Fluency Disorder," sometimes called "developmental" stuttering, to differentiate it from other types of stuttering with neurogenic or psychogenic origin.)

UNDERSTANDING THE STUTTERING CONDITION

The term *adverse impact* is often used to describe the broad range of negative sequelae

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that may be related to a living life as a person who stutters (Tichenor & Yaruss, 2019b; Yaruss & Quesal, 2004). One useful framework for understanding adverse impact is the *International Classification of Functioning, Disability and Health* (ICF), developed by the World Health Organization (WHO, 2001). This framework has been adopted by the American Speech–Language–Hearing Association (ASHA) as reflecting the scope of practice of SLPs (ASHA, 2016). The ICF as applied to stuttering (Tichenor & Yaruss, 2019b; Yaruss, 1998, 2007; Yaruss & Quesal, 2004) conceptualizes the stuttering condition in terms of several interdependent areas. These have been depicted in graphical format (Tichenor & Yaruss, 2019b; Yaruss, 1998; Yaruss & Quesal, 2004), with the most recent update—based on extensive data collected from hundreds of people who stutter—developed by Tichenor and Yaruss (2019b). A schematized adaptation of the graphic by Tichenor and Yaruss is shown in Figure 1 as a guide for the components of the overall stuttering experience described in this article.

The first component of the Tichenor and Yaruss adaptation of the ICF for stuttering is the presumed *etiology* underlying the condition. This etiology is likely genetic in many cases (Kraft & Yairi, 2012), though interactions with environmental and experiential factors are certainly involved. Such genetic and epigenetic differences are presumed to contribute to neurological differences that have been widely documented in both children and adults who stutter (see the study by Etchell et al., 2017, for review). Notably, etiological factors are not accounted for in the ICF as defined by the WHO, for the ICF is designed to reflect the experience of living with health conditions. Nevertheless, these etiological aspects of stuttering are included in the adaptation of the ICF for stuttering because it is useful for researchers and clinicians alike to recognize that the origins of the stuttering condition are found in these genetic, epigenetic, and neurological differences and not, for example, in psychological differences (Yaruss, 1998).

The consequences of these underlying etiological differences are known in the ICF as *impairments* that may affect body function or body structure. In the study of stuttering, these impairments reflect the various differences in motor, linguistic, emotional, cognitive, and temperamental processes that have been well documented in the stuttering research literature (see Bloodstein et al., 2021). These functional differences interact to directly cause the primary symptom of those impairments (Kolk, 1990, 1991; Kolk & Heeschen, 1990) as experienced and described by people who stutter, that is, the sensation of a "loss of control" or of "being stuck" when attempting to speak (Perkins, 1990; Tichenor & Yaruss, 2018, 2019b). (This aspect of the experience of stuttering is discussed in more detail in the second section

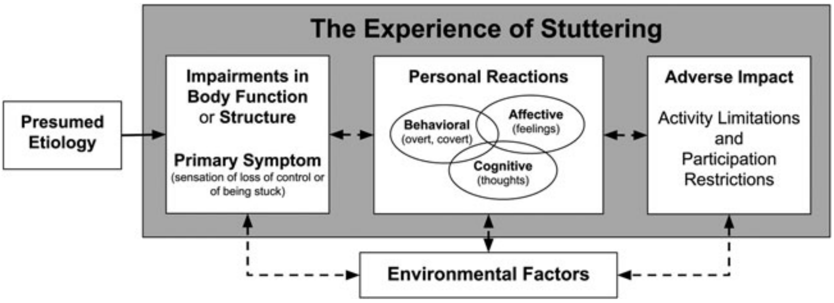

Figure 1. Schematized version of Tichenor and Yaruss (2019), an update of Yaruss and Quesal (2004) representation of how the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) can be applied to stuttering. Copyright © 2021 Seth E. Tichenor, Caryn Herring, and J. Scott Yaruss.

of this article.) The ways in which a person reacts to this primary impairment symptom dictate what a listener hears or an observer sees when a speaker is experiencing a moment of stuttering.

When a person who stutters experiences this sensation of being stuck, out of control, or unable to speak in the way they wish to speak, then they may react in various ways. These individual reactions are described by the next component of the ICF, *personal context or personal reactions.* Examples of personal context include affective, behavioral, and cognitive reactions that may occur as a result of the impairment. These reactions, which are described in more detail in the next section, are highly individualized across people who stutter; none should be viewed as universal or true for every person who stutters. As a person continues to live with stuttering, these affective, behavioral, and cognitive reactions interact, often resulting in increased observable stuttering severity (Tichenor & Yaruss, 2018, 2019b). Negative reactions may become so deeply ingrained that they seem to be automatic or habitual; yet, they remain *learned* coping reactions that a person develops as a result of living with stuttering (Brutten & Shoemaker, 1967). With appropriate treatment, support, and personal experiences, however, these reactions can be changed; indeed, this is a common goal for many therapeutic approaches to stuttering.

Personal context: affective reactions

Affective reactions may include feelings of fear, anger, embarrassment, guilt, or shame (Beilby, 2014; Boyle, 2018; Corcoran & Stewart, 1998; Daniels & Gabel, 2004; Murphy, 1999; Sheehan, 1953, 1970), as well as heightened levels of anxiety in some individuals (Alm, 2014; Craig et al., 2003; Iverach et al., 2018). These affective components can be greatly debilitating, with some individuals even describing their experience of moments of stuttering in terms of emotional pain, feelings of hopelessness, or exhaustion (Tichenor & Yaruss, 2018). Negative affective reactions are reported as common experiences across individuals as they live their lives as people who stutter (Ahlbach & Benson, 1994; Reitzes & Reitzes, 2012). When asked how frequently individuals experience these affective reactions in moments of stuttering, many adults report *often* or *always* feeling ashamed (45%), embarrassed (53%), or emotionally drained (49%; Tichenor & Yaruss, 2019a). These data indicate that negative affective reactions are commonly experienced but also highly individualized in form and occurrence.

Personal context: behavioral reactions

Behavioral reactions, which occur as a speaker attempts to regain control or maintain outwardly fluent speech, can take the form of commonly identified stuttering behaviors, such as repetitions, prolongations, and blocks (Perkins, 1990; Tichenor & Yaruss, 2018, 2019b). In particular, physical tension has been long described a common behavioral reaction (Snidecor, 1955; Tichenor et al., 2017). Behavioral reactions can also be seen in other ways. For example, many people who stutter also avert their gaze when stuttering due to presumed shame or guilt experienced by the person (Manning & Dilollo, 2018; Wingate, 1964). Such behaviors have been hypothesized to occur as a coping or protective mechanism (Iverach et al., 2017), though they directly influence perceived stuttering severity (Tatchell et al., 1983). Covert or interiorized behavioral reactions are also quite common (Constantino et al., 2017; Douglass & Quarrington, 1952; Douglass et al., 2019; Murphy, Quesal, et al., 2007). These include behaviors that are not easily observed by a listener, such as avoidance of sounds, words, or situations or substituting words when speaker perceives that they might stutter (Tichenor & Yaruss, 2018). A recent study of more than 500 adults who stutter revealed that nearly 50% of speakers engaged in covert behaviors at least some of the time, and 10%–20% of the respondents indicated that they often or always engage in covert behaviors (Tichenor & Yaruss, 2019a). Thus, both overt and covert behavioral reactions are quite commonly experienced by people who stutter.

Personal context: cognitive reactions

Cognitive reactions include the thoughts that a person might have regarding their speech and stuttering. Common example of cognitive reactions includes rumination, also known as repetitive negative thinking (RNT), as well as anticipation about future speaking or stuttering experiences (Constantino et al., 2017; Jackson et al., 2015, 2018; Tichenor & Yaruss, 2020a). Repetitive negative thinking is the learned habit of engaging in recurrent, negative, and self-reflective thoughts about one's life, concerns, or experiences (Ehring et al., 2011; Nolen-Hoeksema, 1991, 2004; Watkins, 2008). Such thoughts can be intrusive and often result in decreased quality of life (Ehring et al., 2011; Nolen-Hoeksema et al., 2008; Wrosch & Scheier, 2003). Tichenor and Yaruss (2020) found that adults who stutter who engage in high rates of RNT experience significantly more adverse impact related to stuttering than those who engage in RNT to a lesser degree. Anticipation is the sense that one may soon experience a moment of stuttering (Bloodstein et al., 2021; Jackson et al., 2015; Shapiro, 1999; Starkweather & Givens-Ackerman, 1997; Van Riper, 1982). According to Bloodstein, anticipation is reinforced by past communication experiences, leading to increased fear in subsequent speaking situations (Bloodstein, 1972, 1975; Brocklehurst et al., 2013). Other researchers have referred to anticipation-related thoughts and feelings in more cognitive/affective terms relating to anxiety (Alm, 2004; Craig et al., 2003; Messenger et al., 2004) or fear of negative evaluation by others (Brundage et al., 2017). Tichenor and Yaruss (2020a) suggested that anticipation, as most often discussed in the stuttering literature, may be meaningfully viewed as a stuttering-specific manifestation of RNT: as a moment of stuttering is anticipated, an individual may experience disruptive thoughts about their speaking abilities or about potentially negative listener reactions. Such anticipatory thoughts thereby develop as a natural consequence of experiencing negative communication interactions.

Environmental context

Whereas personal context in the ICF reflects the individual speaker's reactions, *environmental* context reflects the influence of other people in the speaker's life. The environmental context can influence the speaker via a conversation partner or, more generally, via society as a whole. This interaction between environment and speaker further influences the personal reactions discussed previously. For example, many people who stutter have discussed the negative influence that (real or perceived) speaking pressure places on them (Ahlbach & Benson, 1994; Reitzes & Reitzes, 2012). Broader societal influences also include stigma against stuttering (Boyle, 2013, 2015, 2018; Boyle & Blood, 2015; Boyle & Fearon, 2018) and negative public opinions about stuttering and people who stutter (St. Louis, 2020; St. Louis et al., 2016). Society often displays people who stutter in a negative light, perpetuating the ideal of stuttering as something abnormal (Constantino, 2018). Like other components of the ICF, these environmental reactions influence an individual's personal reactions. Experiencing societal judgments about stuttering can lead to personal reactions such as self-stigma, or the feeling that a person does not meet societal expectations (e.g., fluency) due to their own failings or limitations (Boyle, 2018). Feeling external speaking pressure may also cause a person to increase their physical tension when speaking, and this, in turn, can increase observable stuttering severity and overall difficulty with communicating (Tichenor et al., 2017; Tichenor & Yaruss, 2018). Thus, the environmental context has a significant effect on a person's overall experience of stuttering. Unfortunately, this effect is often detrimental to the lives of people who stutter.

Activity limitations and participation restrictions

The impairment(s), the personal reactions, and the environmental reactions can all combine to affect a person's ability to live life as they wish. These real-world consequences are described in the fourth section of the ICF, *activities and participation*. A considerable body of research has highlighted various activity limitations and participation restrictions that people who stutter may experience. For children, negative personal and environmental reactions to stuttering may lead to difficulties in school performance and in extracurricular activities, as well as in their ability to build relationships and develop individual autonomy. Other activity limitations and participation restrictions include being steered toward lower-status occupations (Gabel et al., 2004; McAllister et al., 2012), experiencing financial loss (Blumgart et al., 2010; Gabel et al., 2004; Gerlach et al., 2018), job loss (Constantino et al., 2017), and enduring social rejection (Davis et al., 2002; Van Borsel et al., 2011). Taken together, these aspects of adverse impact negatively affect a person's overall quality of life, and the implications for people who stutter can be pervasive and far-reaching (Craig et al., 2009; Klompas & Ross, 2004; Koedoot et al., 2011).

Summary: the ICF as applied to stuttering

The sensation of being stuck or of losing control, the speaker's personal reactions, the environmental context, and the activity limitations and participation restrictions combine together to describe the overall experience of stuttering (Tichenor & Yaruss, 2019b; Yaruss, 1998; Yaruss & Quesal, 2004). Numerous lines of research continue to further define and specify various aspects of the stuttering condition, adding further detail and examples that help people who stutter, scientists, and clinicians recognize that, "stuttering is more than just stuttering" (Yaruss, 2007, p. 314). In other words, although stuttering may involve disfluent speech, it also involves numerous other experiential aspects that are within the scope of speech-language pathologists to address (ASHA, 2016).

Unfortunately, this fundamental truth about stuttering—and its implications for stuttering therapy—is still debated in some discussions about how SLPs can help people who stutter (see Nippold, 2012). Focusing on fluency as *the* key characteristic of the stuttering condition leads to several potential concerns (Tichenor et al., in press). For example, researchers who require participants to exhibit a certain level of observably disfluent speech as an inclusion criterion for a study may obtain results that apply more to disfluent speech than to people who stutter (Tichenor & Yaruss, 2019a). Likewise, clinicians who focus intervention primarily on fluency miss the opportunity to ensure that their intervention decreases the burden of living with stuttering. Although treatment *may* include working on stuttering behaviors and even fluency, it most certainly should include *more* than those aspects. Thus, a broader consideration of the many ways that stuttering can be experienced will help researchers and clinicians ensure that their study, assessment, and treatment of stuttering address the entire experience of the condition and result in a reduction in the overall impact of stuttering on the life of the person who stutters.

UNDERSTANDING THE MOMENT OF STUTTERING ITSELF

Although the field's understanding of the overall stuttering condition has developed over the years, less has been written about the moment of stuttering itself (i.e., how a person experiences and reacts to feeling stuck or out of control when speaking). A better understanding how people experience the moment of stuttering can lead to a deeper understanding of how speakers cope with stuttering. This, in turn, can directly lead to more effective treatment of not only the speech behaviors associated with stuttering but also the negative sequelae described in the prior section. One explanation for this relative lack of research into the moment of stuttering is the fact that stuttering has almost exclusively been defined through the eyes and ears of listeners. Johnson (1959) stated, "It is to be appreciated that there is no standard operational definition of stuttering or stutterer. Generally speaking, *the word stuttering signifies a judgment made by the listener*" (p. 10; emphasis added). In considering the types of observable behaviors that caused a person to be judged as stuttering, he stated that syllable repetition and sound prolongation were reported more frequently in the stuttering group rather than in the control group, and that those types of speech behaviors are evidently more likely to be classified as stuttering, at least by listeners within our own culture (Johnson, 1959). This research was one of the first attempts at defining stuttering in terms of observable speech-related behaviors.

Over many decades, ongoing work in this area has further refined the demarcation between what behaviors are considered to be stuttered and what behaviors are not considered to be stuttered (Johnson, 1959, 1961a, 1961c). For example, Wingate (1964) labeled repetitions/prolongations of sounds, syllables, and monosyllable words as stuttering while relegating other aspects (e.g., tension, body movements, and struggle) to the status of so-called *accessory* features (also commonly referred to as "secondary" behaviors). Conture (1990) distinguished between within-word and between-word disfluencies, suggesting that the former (generally) reflected the speech behaviors demonstrated by people who stutter and the latter (generally) reflected the speech behaviors of people who do not stutter. In a similar fashion, Gregory et al. discussed this demarcation (i.e., speech behaviors demonstrated by people who stutter vs. speech behaviors that people who do not stutter are sometimes observed to demonstrate) in terms of "less typical" and "more typical" disfluencies (Gregory et al., 2003; Gregory & Hill, 1999). More typical disfluencies are those more likely to be demonstrated by the general population of people who do not stutter. Many current authors use the terms "stuttering-like" and "non-stuttering-like" or "other" disfluencies (Yairi & Ambrose, 2005). Importantly, *all* of these efforts are based on listener judgments (see the studies by Conture, 1990; Gregory et al., 2003; Gregory & Hill, 1999; Teesson et al., 2003; Wingate, 1964; Yairi, 1996, 2001; Yairi & Ambrose, 2005); relatively little input has been drawn from the perspective of speakers who stutter themselves. Although such classifications are widely used, numerous authors have highlighted various challenges with listener-based assessment of stuttering in both research and clinical contexts. These include the variability of the observable behavior (Constantino et al., 2016; Tichenor & Yaruss, 2020b), as well as poor reliability and questionable validity of listener judgments (see the studies by Brundage et al., 2006; Cordes & Ingham, 1994, 1999; Hall et al., 1987; Kully & Boberg, 1988; Martin & Haroldson, 1992; Tichenor et al., 2017). These concerns raise the possibility that the underlying assumption—that the moment of stuttering can be accurately defined on the basis of what a listener sees or hears—may not be valid.

Not all authors have focused on listener-based definitions of stuttering; some individuals have directly considered the experience of people who stutter (Perkins, 1990; Quesal, 1989; Tichenor & Yaruss, 2018, 2019b). The idea that the core or essential experience of stuttering reflects a *loss of control* has its origins in rebuttals to listener-defined paradigms in which certain behaviors were defined as stuttering while other behaviors were defined as "normal" or nonstuttered. Perkins was among the first to propose that the actual difference between stuttered disfluencies and nonstuttered disfluencies is the *internal* experience of the speaker (Perkins, 1983) and not the external appearance of the behavior perceived by a listener. In referencing the experiences of people who stutter, Perkins said, "an indisputable reality for people who consider themselves to be stutterers is that they feels as if they lose control of their speech when they stutter." (Perkins, 1983, p. 247). Perkins defined stuttering as, "a temporary or overt *or covert* loss of control of the ability to move forward fluently in the execution of linguistically formulated speech" (Perkins, 1984, p. 431, emphasis added). Perkins later elaborated on his original point by differentiating between voluntary and automatic control, using the example of how fluency-enhancing strategies affect speech production. When using fluency-enhancing strategies, a person may *appear* to a listener as if they are speaking fluently even though they may be speaking with greater effort (Perkins, 1984). Therefore, any nonspontaneous fluency that they may demonstrate or experience is not the same as the spontaneously fluent speech of people who do not stutter (Constantino et al., 2020). Dayalu and Kalinowski (2002) referred to this effect as "pseudofluency" (p. 87). Relatedly, people may experience stuttering *covertly*, that is, they may feel the loss of control in their speech even without displaying any overt disruption in speech that can be observed by a listener (Douglass et al., 2018; Tichenor & Yaruss, 2018). In both of these cases, a person may be demonstrating perceptibly or observably fluent speech so far as a listener can judge, *even though stuttering is actually happening*.

Therefore, using the apparent absence of observably "stuttered" speech, either as an indicator that a person does not stutter or for evaluating therapy outcomes, limits our understanding of that person's stuttering to surface characteristics only. Tichenor et al. (in press) have argued that such a view may restrict a person from being included in the community of people who stutter, raise barriers that make it more difficult for that person to access therapy (e.g., if a certain percentage or severity of observable stuttering is needed to determine eligibility for therapy in a school setting or for third-party payment), or increase the risk that a person will be discharged from therapy prematurely because they appear to be speaking fluent when they may actually be avoiding speaking altogether. (Such factors are further complicated by the variability of observable stuttering behavior (Constantino et. al, 2020; Tichenor and Yaruss, 2020b).) Thus, surface definitions of the moment of stuttering ignore not only the broader experience of the condition described by the ICF but also the reality of the speaker's experience of that moment.

Perkins' work has inspired investigations seeking to further specify what speakers experience during moments of stuttering. For example, Tichenor and Yaruss (2018) conducted a qualitative exploration of the moment of stuttering with 13 adults who stutter. Results corroborated many past assumptions about the moment of stuttering. Specifically, respondents reported that their experience of the moment of stuttering involves more than just disrupted speech; it also involves cognitive/affective components, such as fear, shame, guilt, and anxiety that occurs both while they are experiencing stuttering and over broader stretches of time. Respondents echoed Perkins's suggestion that the moment of stuttering involves a feeling being stuck or the sensation of losing control. Importantly, this sensation was discussed as a core or essential feature, that is, an aspect of the experience that *causes* the affective, behavioral, and cognitive reactions described previously. Respondents also indicated that the moment of stuttering is associated with various forms of management as speakers attempt to modify, control, prevent, or hide their stuttering from others. In developing the essential structure from their thematic analyses (i.e., the core experience of the moment of stuttering that was common across all participants), Tichenor and Yaruss concluded that,

> The sensation of being stuck occurs when speakers know what they want to say but are unable to say it. This sensation does not directly correspond to the behaviors that listeners may observe (e.g., repetitions, prolongations, and blocks). Rather, speakers may react to the sensation of being stuck with tension or struggle, and these behaviors might be observable. They might also experience being stuck without observable reaction until the sensation passes. Other possible reactions include attempting to restart speaking, prolonging or repeating a sound to hold the conversational floor, avoiding sounds or words, changing words or the message in an attempt to postpone or prevent stuttering, or holding the conversational floor through other conversational means (e.g., starter or filler words). Speakers may also respond by

> using speaking strategies (e.g., reducing tension) through methods learned in treatment or independently. They may also respond by focusing on acceptance or spontaneity (p. 1189).

Larger follow-up studies have replicated and expanded these findings. Tichenor and Yaruss (2019a) surveyed 502 adults who stutter to determine what thoughts, feelings, and behaviors they experience during and around moments of stuttering. Results confirmed that speakers alone are privy to the internal sensation of being stuck or out of control when speaking. Thus, these data support the conclusion by Moore and Perkins (1990, p. 377) that, "listeners do not have the valid information on which to base their judgments" of what constitutes a moment of stuttering. Listeners can only perceive that stuttering has happened based on what the speaker *does* in response to the feeling of loss of control and they can do this only if the person responds in an outwardly visible way. If a person does not respond in a visible way, then stuttering might well have happened, but the listener might not know. This can occur if the speaker changed words, paused, discontinued speaking, or used some other covert behavior to mask or hide the underlying disruption.

The ways in which people who stutter respond to the feeling of loss of control are variable across situations and over time (Constantino et al., 2016; Tichenor & Yaruss, 2020b) and highly influenced by each speaker's personal experiences. For example, Tichenor and Yaruss (2019a) asked adults who stutter what their goals were when speaking. Analyses determined that responses fell along two factors: (a) to be more fluent/not stutter when speaking and (b) to say what they want to say regardless of stuttering. The authors found that the more likely a person is to have the goal of speaking more fluently/not stuttering, the more likely they are to experience adverse impact related to stuttering. Adults who stutter whose goal is to be more fluent/not stutter are significantly more likely to avoid situations, sounds, or words; to push or struggle with tension; or to experience shame, guilt, or fear associated with stuttering. A person whose goal is to be more open about stuttering and to say what they want to say regardless of how fluent they might be showed the opposite pattern of results. That is, they were less likely to avoid situations, sounds, or words; to push or struggle with tension; or to experience shame, guilt, or fear. Thus, a person's goal when speaking significantly influences how they react to the sensation of being stuck or of losing control when speaking.

This line of research has significant implications for SLPs who work with individuals who stutter: Unless we come to understand who a person is, how they approach speaking, how they manage the condition in their life, and more, we cannot truly understand their experiences related to stuttering. Considering these (and other) fundamental aspects of a person's experiences is therefore *critical* information for planning effective intervention. Without such consideration, treatment approaches will be more generic and likely less effective because they will not address the speaker's unique experiences and coping patterns.

IMPLICATIONS FOR STUTTERING ASSESSMENT AND TREATMENT

Historically, much of stuttering therapy has focused on decreasing the occurrence or severity of overt stuttering behaviors, using techniques involving speech modification (e.g., techniques for enhancing speech fluency) or stuttering modification (e.g., techniques for reducing tension or struggle surrounding moments of stuttering). Treatments targeting observable fluency have been shown to be effective at increasing perceptibly fluent speech in both children and adults who stutter (de Sonneville-Koedoot et al., 2015; Jones et al., 2005; Neumann et al., 2017). Many authors have also described the benefits of stuttering modification in increasing the ease of speaking (Van Riper, 1973). Together, these two approaches comprise the standard of speech treatment for people who stutter (Bloodstein et al., 2021).

Yet, just as stuttering involves more than disfluent speech (Yaruss, 2007), treatment for stuttering should also address more than just disfluent speech to decrease negative experiences associated with the condition (Yaruss et al., 2012).

Following the components of the ICF model can help clinicians understand how each person experiences stuttering in their own way. Thus, treatment should focus on the ways a person responds to the sensation of being stuck or of losing control when speaking, the specific forms of adverse impact that the person experiences, the reactions of those in that person's environment, and the unique activity limitations or participation restrictions they experience in their lives. Following are several examples of how clinicians can tailor therapy to address specific aspects of adverse impact that their clients may experience.

Decreasing negative personal reactions

As noted previously, many people who stutter experience negative affective, behavioral, and cognitive reactions associated with stuttering; as they come to better understand these reactions, they can change them and thereby reduce this aspect of the adverse impact of stuttering. Clinicians should recognize that changing negative reactions can be difficult, in part because it is completely normal and understandable for people who stutter to have difficulty coping with the repeated sensation of feeling stuck, as well as the repeated negative reactions from listeners. Unique speaking situations occur many times each day, and the effect of habitual repeated negative experiences can be significant. The variability and unpredictability of the speaker's experience of the loss of control compound these negative reactions (Tichenor & Yaruss, 2020b). Moreover, these reactions develop over a lifetime, so it is expected that it will take time and effort to change them. Fortunately, several approaches to therapy can be used to decrease the frequency and severity of these reactions. Following are a few current examples.

Mindfulness

One approach for helping speakers reduce their negative reactions during a moment of stuttering is *mindfulness*. Mindfulness is a broad term that can be used to refer to a number of techniques or processes broadly aimed at, "increasing awareness and responding skillfully to mental processes that contribute to emotional distress and maladaptive behavior" (Bishop et al., 2004, p. 230). Boyle (2011) provided an apt tutorial for how speech–language pathologists can use mindfulness strategies, such as increased attention, to decrease adverse impact in their clients who stutter. Having a client attend to what they are doing when they are feeling stuck (e.g., by increasing their attention to the moment of stuttering) can help counteract continued use of less helpful behavioral reactions, such as closing their eyes or tensing their muscles. SLPs can also help speakers decrease such behavioral reactions by guiding clients to increase their attention to what they are doing, thinking, or feeling during moments of stuttering. For example, an SLP might help a client "freeze" or stay in a moment of stuttering *while it is happening* to give the speaker the time and opportunity to think more deeply about that moment of stuttering (Guitar, 2019; Reardon-Reeves & Yaruss, 2013). As the speaker becomes more aware of their physical behaviors (e.g., tensing), thoughts (e.g., "I can't do it."), and feelings (e.g., fear) during that moment of stuttering, they can explore whether those reactions are helpful or necessary. As the speaker's understanding of these behaviors, thoughts, and feelings expands further, they can seek to modify them, and this can lead to moments of stuttering that are physically easier or less uncomfortable. Such modifications can ultimately lead to changes in the way the person speaks or stutters; they can also lead to changes in how a person thinks or feels about stuttering. It is important to note that such therapy must be individualized to each speaker's needs. For example, people who stutter show wide variations in both the location and the degree of physical tension they experience in their body when stuttering (Tichenor et al., 2017), so clinicians should not assume that a particular instruction for reducing tension would apply to all speakers. Mindfulness techniques help ensure that treatment is appropriately individualized for each unique speaker's experience of physical tension.

Mindfulness techniques can be particularly effective for addressing affective and cognitive reactions to stuttering. As noted previously, many people who stutter engage in repetitive negative, with thoughts such as "I am stuttering (or I am about to stutter), and that is bad," "I am stuttering, and people are thinking poorly of me," or "I am stuttering, and I should feel bad that I stutter." One key principle of mindfulness that can help in such situations is *nonjudgment*, or being "non-evaluative about one's experiences in the present moment" (Dekeyser et al., 2008, p. 1236). Practicing nonjudgment involves letting thoughts occur *without* feeling the emotions that may previously have been attached to those thoughts. Thus, the automatic thought of "I am stuttering, and that is bad" can instead become, simply, "I am stuttering." Detaching or defusing the emotion from the thought (Anderson & Levy, 2009; Jha et al., 2010; Wells & Papageorgiou, 2004) can help reduce the impact of negative automatic thoughts. There is growing research that mindfulness-based therapies are effective at decreasing the burden of living with stuttering (Beilby et al., 2012; Cheasman, 2013; Gupta, 2015; Gupta et al., 2016; Palasik & Hannan, 2013). A clinician whose therapy incorporates mindfulness-based techniques, such as staying in a moment and practicing nonjudgment, can help clients decrease both the frequency and the severity of RNT (see Tichenor & Yaruss, 2020a, for discussion). Again, this effect can be achieved only through consideration of what individual clients are experiencing; clinicians must assess each client's specific repetitive negative thoughts before initiating the process of changing RNT in therapy.

Desensitization

Another aspect of therapy that can be used to decrease the frequency and severity of negative personal reactions is *desensitization*, or the process of minimizing adverse reactions by gradually exposing oneself to uncomfortable stimuli (Foa & Kozak, 1986; Rapee et al., 2000; Wolpe, 1958). Desensitization has been used in stuttering therapy for many years (see Murphy, Yaruss, et al., 2007; Reardon-Reeves & Yaruss, 2013; Van Riper, 1973). Voluntarily stuttering, also known as pseudostuttering, intentional stuttering, bouncing, or negative practice (Dunlap, 1932; Gregory et al., 2003; Guitar, 2019; Ham, 1990; Ingham, 1984; Manning & Dilollo, 2018; Nicholas, 2015; Sheehan, 1970; Sheehan & Voas, 1957; Van Riper, 1973), is among the most commonly used desensitization strategies in stuttering therapy. Voluntary stuttering involves the intentional production of speech behaviors that sound like actual stuttering behavior; this allows speakers to experience some of the discomfort associated with true stuttering but in a safer or more controlled manner or environment. As speakers learn to tolerate voluntary stuttering with less emotional distress, they can subsequently increase the tension or frequency of their "stuttering" behaviors to better replicate their actual moments of stuttering. Repeated exposure helps increase speakers' tolerance of actual moments of stuttering, and this, in turn, helps decrease other affective, cognitive, and behavioral reactions. Specifically, as speakers learn to tolerate the sensation of loss of control, their emotional reactions such as panic and fear can be reduced, and this allows them to experience moments of stuttering more easily.

Desensitization can also be used to help speakers transform their responses to environmental reactions to their stuttering, such as being laughed at or hung up on while on the telephone. Clinicians can help their clients approach this through using a hierarchy that helps clients move from easier to harder situations as they practice tolerating other people's reactions to their stuttering (e.g., Reardon-Reeves & Yaruss, 2013). Again, this hierarchy is individualized for each client; no two people will have the exact same hierarchy of feared situations. Initially, speakers should practice facing their fears in safe, controlled environments, such as the therapy room. As their comfort grows, they can move on toward more difficult, real-world situations; clinicians can help plan and structure this aspect of therapy by working with the speaker to determine a list of increasingly difficult situations specific to the speaker. For example, if a client fears being hung up on, the clinician can start by creating opportunities for the speaker to use the phone while in the therapy room, then progress toward increasingly difficult situations, such as using the phone while calling the clinician in another room, then using the phone to call a close friend, and then using the phone to call a store. A final, more challenging, task may involve more "real-world" types of tasks, such as calling restaurants with the hope of being hung up on so that the speaker can develop resilience to that feared situation. Repeated exposure (and being hung up on numerous times) helps lessen the negative emotional reaction, and this helps reduce the overall adverse impact of stuttering (and the fear of stuttering) on the speaker's life.

Cognitive therapy

Mindfulness and desensitization are just some of the tools that SLPs can use to help speakers reduce negative reactions to stuttering. Cognitive therapy approaches, such as Cognitive–Behavioral Therapy (CBT) and Acceptance and Commitment Therapy (ACT; Beilby et al., 2012; Beilby & Byrnes, 2012; Blood, 1995; Cheasman, 2013; Emerick, 1988; Gupta et al., 2016; Helgadóttir et al., 2014; Kelman & Wheeler, 2015; Menzies et al., 2008, 2009; Palasik & Hannan, 2013), have also been shown to be valuable for decreasing negative personal reactions to stuttering. For example, CBT can be used to decrease the frequency or severity of negative thoughts, feelings, and behaviors related to stuttering. The underlying principle of CBT is that thoughts, feelings, and behaviors are interconnected (Beck, 1967, 1976; Ellis, 1957, 1962). Therefore, when a negative thought is altered, the associated feelings and behaviors are also altered. The process of CBT includes identifying negative thoughts, collecting evidence related to those thoughts, and ultimately changing those less helpful thoughts to more helpful thoughts. For example, a negative thought might be, "no one likes me because I stutter." Through CBT, the individual might examine the evidence behind that thought (e.g., creating a list of friends who like them regardless of the stuttering). This evidence is then used to evaluate the original thought to determine whether it is valid. For example, a person might realize that they have many friends who do not actually care whether or not they stutter. This gives speakers the opportunity to then replace that negative thought with a more neutral or positive thought, thereby decreasing their negative reactions surrounding stuttering. Several studies have shown that CBT is effective at decreasing feelings of anxiety and increasing positive reactions to stuttering (Kelman & Wheeler, 2015; Menzies et al., 2008; Murphy, Yaruss, et al., 2007; St Clare et al., 2009).

Acceptance and Commitment Therapy is rooted in the philosophy that negative thoughts do not necessarily have to be changed; instead, they can be acknowledged and accepted. Through ACT, speakers can learn that negative thoughts and emotions can be present, but they do not have to dictate how a person acts or reacts (Fletcher & Hayes, 2005; Hayes et al., 2006). A key component of ACT is mindfulness, as described previously, because mindfulness helps speakers understand their actions, feelings, and thoughts more fully. Individuals are encouraged to use this deeper understanding of their experiences in support of actions that are focused on their values rather than allowing negative reactions to lead toward further negative thoughts or actions that are inconsistent with their goals. Clinician can help speakers create meaningful goals and tailor therapy activities to meet each individual's unique needs. For example, it may be important for a client to give a presentation at work or school. Before giving a presentation, an individual may be feeling anxious and having negative thoughts such as, "I'm so bad at giving presentations. I'm going to fail." Through ACT, speakers can recognize that those thoughts and feelings exist; the thoughts do not necessarily have to be changed or minimized. The speaker can then show compassion toward themselves and consider an inner dialogue such as, "This presentation means a lot, so it makes sense that I'm feeling nervous. But I know this presentation is important for me to do." Because the individual is focused on taking action *regardless* of the feelings and thoughts that they are having in the moment, their goal shifts from trying to eliminate the negative thoughts to simply giving the presentation. Like CBT, ACT has shown to be effective in reducing overall adverse impact of stuttering (Beilby et al., 2012; Beilby & Byrnes, 2012; Cheasman, 2013; Palasik & Hannan, 2013).

Decreasing the influence of environment

The environmental context component of the ICF refers to external reactions to stuttering such as societal stigma, bullying, and discrimination. Unfortunately, negative environmental influences cannot always be prevented. Ample evidence has shown that people who stutter are more likely to experience discrimination, bullying, and other negative reactions (Blumgart et al., 2010; Davis et al., 2002; Gabel et al., 2004; Gerlach et al., 2018; McAllister et al., 2012; St. Louis, 2020; St. Louis et al., 2016; Van Borsel et al., 2011). Nevertheless, therapeutic approaches can help individual speakers cope with bullying and discrimination and, ultimately, minimize the negative effects of these environmental reactions. Examples include educating others about stuttering, self-advocacy, and self-disclosing stuttering (Boyle et al., 2018; Boyle & Gabel, 2020; Byrd, Croft, et al., 2017; Byrd, McGill, et al., 2017; Croft & Byrd, 2021; McGill et al., 2018; Murphy, Yaruss, et al., 2007; Snyder et al., 2021; Yaruss et al., 2018). Educating others may be therapeutic for the person who stutters, as well, because learning to talk more openly about stuttering can help decrease self-stigma and decrease the frequency of more covert behavioral reactions.

Self-advocacy involves speaking up for oneself and making one's needs known. It can take many forms; the specific self-advocacy approach that a speaker chooses will be highly individualized. Some speakers may ask others to be patient with them as they speak, and others may ask for increased time to speak in order to reduce pressures on themselves. Speakers may ask for accommodations in their environment to decrease the burden that speaking places on them. These might include asking to go first when giving a presentation or talk, or asking to talk via videoconferencing rather than the telephone. Self-disclosure of stuttering involves acknowledging the fact that a person stutters. Like other aspects of therapy, self-disclosure can be accomplished in numerous ways, and clinicians need to be prepared to work with each individual client to find the strategy that is right for them. For example, some speakers may simply state, "I stutter," when addressing a listener. Others may provide more detail: "I stutter, so it is helpful for me if you can be patient as I speak." Voluntary stuttering (including the pseudostuttering described previously) is also a form of self-disclosure, because it can make the stuttering behavior more apparent to others. Regardless of the form of self-disclosure that a speaker chooses, the very act of talking openly about stuttering helps other people in the environment to gain a better understanding of the condition. This ultimately serves to reduce stigma and discrimination. Importantly, all of these aspects of treatment are interrelated: desensitization allows a speaker to approach self-advocacy tasks; self-advocacy strategies help educate others while empowering the speaker, and empowered speakers are more likely to engage in speaking situations and experience reduced negative reactions.

Decreasing activity limitations and participation restrictions

All of the strategies for helping people cope with the sensation of loss of control, as well as those for addressing personal and environmental reactions, combine to reduce limitations in daily activities and restrictions in participation that people who stutter may experience. To ensure that these gains translate to improvements in daily life, it is critical for clinicians to extend therapy to real-world situations (Yaruss & Reardon, 2003). Therapy cannot just stay in the therapy room; in order for benefits to be experienced in other settings, it is necessary for therapy to incorporate those other settings through the process of generalization. Similar to the process used for desensitization, clinicians can use hierarchies to help clients move from the relatively safe environment of the therapy room to more real and more difficult situations outside of the therapy room. This principle applies to a host of treatment goals that target increasing the ability to engage in life's activities. For example, speaking on the phone may provoke unique fear or anxiety for some people who stutter. A person who stutters might be able to make the phone call with a certain sort of person (e.g., family members, friends, neighbors) but not others (e.g., strangers). Alternatively, this person might be more able to stutter openly in a noisy environment versus a quiet one. The clinician in both of these examples can systematically manipulate the context or the environment to allow the person who stutters to be challenged while still being set up for success. In this way, tightly focused and manageable goals make the process of generalization easier, as individuals build upon success in controlled environments (such as accomplishing a task following a clinician's model) and work up to their ultimate goals such as accomplishing the same task in the classroom or at work. Thus, planning for and promoting generalization in therapy greatly increase the impact therapy can have on the life of a client. A clinician who plans intervention based on current understandings of the impact of stuttering based upon recent research, combined with a thorough understanding of each unique client's individual experiences related to stuttering, has the capability and the background that is necessary to effect meaningful change.

SUMMARY

Speech–language pathologists can play an important role in decreasing the burden that too often affects the lives of people who stutter. For decades, some researchers and clinicians have acknowledged that the experience of stuttering is more than just disfluent speech. Although personal experiences have long been incorporated within some approaches to stuttering therapy, there remains room for growth. This article has outlined how the broader experience of stuttering can be conceptualized on the basis of the ICF framework, how moments of stuttering are perceived by people who stutter, and how adverse impact related to stuttering can be more effectively addressed in therapy by considering the unique experiences of individual speakers who stutter. When SLPs account for the individualized ways that each client experiences the stuttering condition, they have the opportunity to increase the value and efficacy of their therapy and, ultimately, help reduce the impact of stuttering on their clients' lives.

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