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**SELF-STIGMA OF STUTTERING: IMPLICATIONS FOR SELF-ESTEEM,
SELF-EFFICACY, AND LIFE SATISFACTION**

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by

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ABSTRACT

Stuttering is a communication disorder that is often stigmatized in our society and people who stutter may internalize this stigma. Although research has been conducted regarding stigma associated with stuttering, no research to date has analyzed different theoretical levels of stigma and how these relate to aspects of psychological well-being among adults who stutter. The purpose of this study was to create a psychometrically sound scale that measured different levels of internalized stigma (i.e., self-stigma) and analyze their relationships to self-esteem, self-efficacy, and life satisfaction. It was hypothesized that the experimental scale would demonstrate acceptable psychometric properties and that stigma self-concurrence would be negatively related to self-esteem, self-efficacy, and satisfaction with life among adults who stutter. Participants were 291 adults who stutter (ages 18 or older) recruited from the National Stuttering Association, as well as Board Recognized Specialists in Fluency Disorders. A Web-based survey including the Rosenberg Self-Esteem Scale, the General Self-Efficacy Scale, the Satisfaction With Life Scale, and the Perceived Stuttering Severity Scale was given to participants along with an experimental scale called the Self-Stigma of Stuttering Scale, or 4S, intended to measure self-stigma of people who stutter. The 4S demonstrated adequate reliability and signs of initial construct validity. Factor analysis revealed underlying components supportive of the hypothesized multidimensional model of stigma. Stigma self-concurrence, and to a lesser extent stereotype agreement, were negatively correlated with self-esteem, self-efficacy, and life satisfaction, even beyond perceived stuttering severity. Stigma self-concurrence was a significant predictor of self-

esteem, self-efficacy, and life satisfaction among people who stutter, above and beyond demographic and stuttering-related variables. It is concluded that many people who stutter are resilient and can buffer self-esteem, self-efficacy, and life satisfaction even in the face of public stigma. However, those who internalize stigma and apply stigmatizing attitudes to themselves experience lower levels of psychological well-being. Speech-language pathologists should value and prioritize identification and modification of self-stigma in their adult clients who stutter.

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Chapter 1

Introduction

People who stutter (PWS) have to cope with involuntary disruptions in speech production that can make oral communication difficult and frustrating. In addition to these physical challenges, societal reactions to stuttering result in stigma, which manifests in negative stereotypes, prejudiced reactions, and discrimination toward PWS. Furthermore, PWS may internalize negative attitudes of the public and experience decrements in psychological well-being and restricted societal participation. Due to its potentially harmful implications, addressing self-stigma should be a priority for speech-language pathologists working with clients who stutter. This introduction provides (a) a description of stigma and its theoretical models (b) a discussion of the impact of stigma on psychological well-being (c) a review of research discussing the connections between stuttering, stigma, and aspects of psychological well-being, (d) an overview of the purpose and potential implications of this study, and (e) specific research questions and hypotheses.

What is Stigma?

The traditional perspective on stigma comes from Goffman (1963), who stated that stigma is both a trait and the outcome of being known to possess the trait. Specifically, a stigmatized trait is some attribute, or mark, that discredits and reduces an

individual “from a whole and usual person to a tainted, discounted one” (p. 3). As an outcome, stigma occurs when negative social meanings associated with the discrediting attribute become linked to the individual. This process results in a damaged social identity, reduced societal acceptance, and limited opportunities for the stigmatized person. Many groups of people have experienced, or continue to experience stigma including people of color, women, homosexuals, overweight individuals, individuals with physical or intellectual disabilities, less educated people, impoverished people, and people with mental illness (Corrigan, Larson, & Kuwabara, 2010). More contemporary definitions of stigma emphasize the notion that stigma is relationship- and context-specific, meaning it is not an intrinsic or objective attribute residing in a person, but rather it exists in particular social contexts (Barreto & Ellemers, 2010; Crocker, Major, & Steele, 1998; Shelton, Alegre, & Son, 2010).

Stigmatizing conditions can be linked to appearance, behavior, or group membership (Crocker et al., 1998). Traits that are stigmatized vary on several different dimensions including concealability (whether the attribute can be hidden from others), course (the changeability and pattern of the condition over time), disruptiveness (how much the condition interferes with social interaction), aesthetic qualities (how much the condition upsets others through the five senses), origin (how the condition was acquired and who is responsible), and peril (the kind and amount of danger the condition represents to other people) (Jones et al., 1984; Rao et al., 2009). These different dimensions of stigma have implications for how society reacts to individuals with stigmatized conditions. For example, a stigmatizing condition that is perceived to be outside of people’s control and not due to any fault of their own (e.g., blindness) may

elicit sympathy and concern from the public. However, if people are perceived to be responsible for their condition, as is often the case with alcoholism or drug addiction, blame and moral judgment from the public are more prevalent (Corrigan, 2000; Corrigan et al., 2000; Crocker et al., 1998; Weiner, Perry, & Magnusson, 1988).

Another example of how the consequences of having a stigmatized condition may vary depending on different dimensions of the stigma is the issue of concealability. Although there may be some benefits of having a concealable stigma (e.g., less social disapproval or avoidance from others) (Jones et al., 1984), there are also many negative implications (Hatzenbuehler, 2009; Pachankis, 2007; Quinn & Chaudoir, 2009). Hiding a concealable stigma for fear of being stigmatized may come at the cost of negative effects on mental and physical health, including hypertension, (Link & Phelan, 2006; Major & O'Brien, 2005) negative affect (Frable, Hoey, & Platt, 1998), and preoccupation with stigma-relevant thoughts (Smart & Wegner, 1999). There is much debate in the area of social psychology about how preferable it is to have a highly visible stigma (e.g., obesity, facial disfigurement) or concealable stigma (e.g., mental illness or HIV infection). Each type may have unique negative consequences depending on the situation (Chaudoir & Quinn, 2010; Corrigan et al., 2010a; Corrigan & Matthews, 2003; Crocker & Major, 1989).

Public Stigma and Self-Stigma

Current theoretical models divide stigma into public stigma and self-stigma (Corrigan et al., 2010b; Rao et al., 2009; Rüsçh, Angermeyer, & Corrigan, 2005). Public

stigma begins as a signal, or mark, that members of a group possess that make them devalued in the eyes of non-stigmatized group members (Corrigan & Watson, 2002). These signals that lead to stigma vary widely in their expression and may include symptoms of a disease or disorder, skill deficits, appearance, and labels which identify group members as having a particular illness or disability (Corrigan, Mueser, Bond, Drake, & Solomon, 2008). These signals lead to cognitive and affective reactions in the form of stereotypes and prejudice. These cognitive and affective responses can then lead to discriminatory behavior. The concepts of stereotypes, prejudice, and discrimination will be described in detail in the following paragraphs.

Stereotypes are knowledge structures learned by members of a group. They can provide mental shortcuts for making sense of our environment by categorizing information about groups of people (e.g., “People who stutter are less competent”). Stereotypes are social because they represent notions that are generally agreed upon by members of society. They are commonly used because they are efficient at creating impressions and expectations of people belonging to a stereotyped group of people (Corrigan et al., 2010b). Unfortunately, these efficient shortcuts for categorizing information and making sense of the environment are not always correct, and may lead us to misjudge individuals belonging to stereotyped groups.

Just because stereotypes exist about certain groups of people does not necessarily mean that all members of society agree with these stereotypes. For example, we might be aware of certain stereotypes about a particular ethnic group but refuse to endorse them. Prejudice, however, represents endorsement and agreement with negative stereotypes (e.g., “I agree, people who stutter are less competent”). In addition, prejudice produces a

negative emotional reaction to the stereotyped group (e.g., “They make me uncomfortable”) (Corrigan et al., 2008). Prejudice is a cognitive and affective response that generally involves a negative evaluation of a group of people (Corrigan et al., 2010b). Prejudice leads to discrimination, which is a behavioral response. For example, prejudice that produces discomfort can lead to behavioral patterns which can harm members of stigmatized groups (e.g., teasing or bullying, ignoring, withholding help or assistance, not hiring them for work). The process of public stigma is shown in Figure 1.

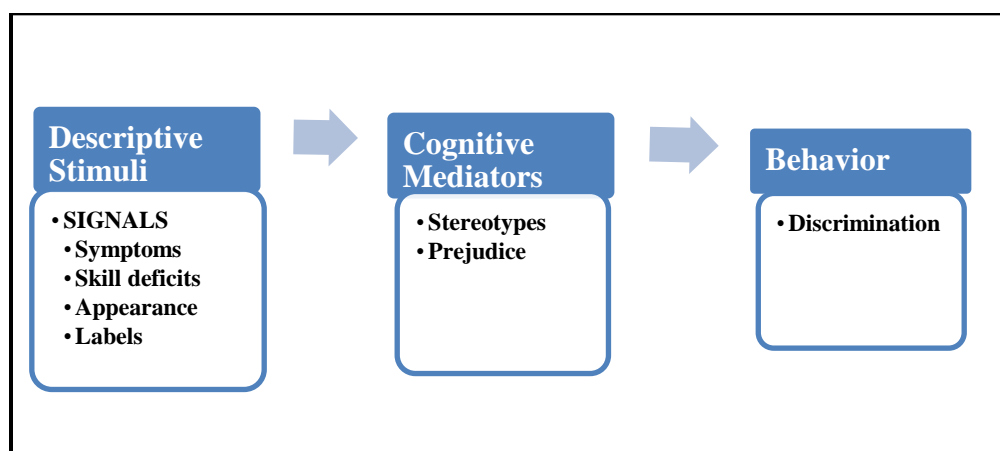


Figure 1. The process of public stigma. Source: Corrigan et al. (2008).

According to Link and Phelan (2006), public stigma involves a person being labeled, stereotyped, excluded from the non-stigmatized group, being discriminated against and losing status, all in the context of a power imbalance, with beliefs of more powerful groups prevailing. Public stigma has negative consequences for the stigmatized individual including diminished quality of life and mental health, and restricted

opportunities in employment, education, housing, relationships, and community functions (Corrigan et al., 2010b; Major & O'Brien, 2005; Steele, 1997; Steele & Aronson, 1995).

Whereas public stigma is what the public does to the stigmatized group in the form of generating and endorsing stereotypes, prejudice, and discrimination; self-stigma is what the stigmatized group does to itself (Corrigan et al., 2010b). Self-stigma refers to the internalization of the negative attitudes of society among the stigmatized group and its negative consequences (Corrigan, Larson, & Rüsçh, 2009; Holmes & River, 1998; Rüsçh et al., 2005). Similar to public stigma, self-stigma involves stereotypes, prejudice, and discrimination, however self-stigma involves the stigmatized individuals internalizing these aspects of stigma. Stereotypes become negative beliefs about the self (e.g., incompetence, character weakness). Prejudice develops when the stigmatized individual agrees with the stereotype and experiences a negative emotional reaction in the form of reduced self-esteem and self-efficacy (e.g., "I stutter, it is my fault, and I won't be successful"). The distinction between public stigma and self-stigma can be seen in Figure 2.

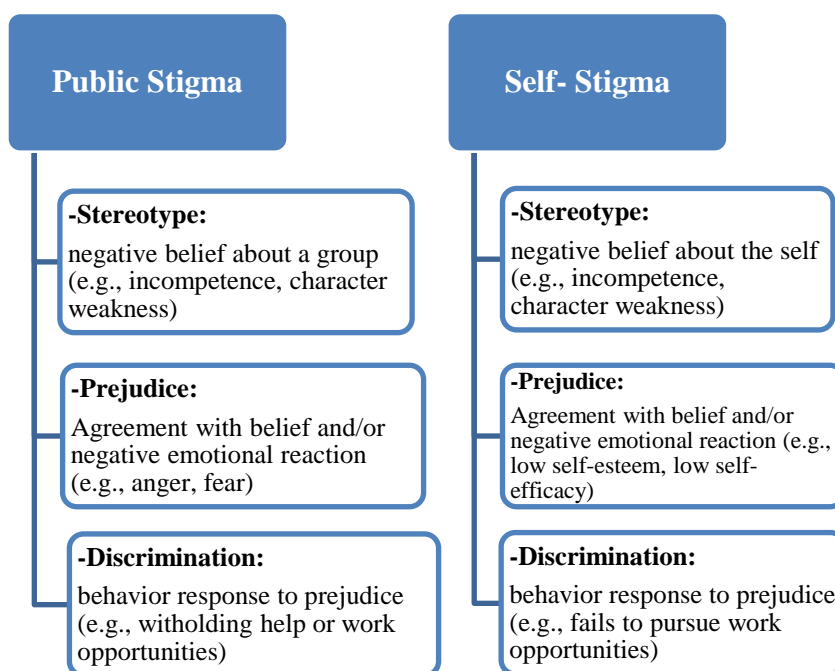


Figure 2. Differences between public stigma and self-stigma. Source: Corrigan et al. (2008).

Low self-esteem (a judgment of one's self-worth) and low self-efficacy (a judgment of one's capability at a given point in time) are associated with demoralization and undermined confidence in achieving life goals. This could lead to self-discriminating behavior in the form of individuals' failure to pursue work, housing, independent living, meaningful relationships, or other social opportunities (e.g., "I stutter and I won't be able to succeed, so I won't pursue a job that requires lots of speaking") (Corrigan, Larson, & Rüschi, 2009; Corrigan & Watson, 2002; Corrigan et al., 2010b; Link, 1982, 1987; Perlick et al., 2001; Rüschi et al., 2005). Corrigan et al. (2009) labeled this lack of confidence in the ability to achieve life goals the "Why try" effect (e.g., "Why should I try to get work? Someone like me will not be able to handle a job that requires a lot of speaking" or "Why should I try to develop intimate relationships? Someone like me is not worthy of that").

This self-prejudice and self-discrimination would be expected to have negative implications for individuals' pursuit of life goals, well-being, and quality of life (Corrigan, 2004). Indeed, research has shown that self-stigma has been associated with reduced self-esteem (Berger, Ferrans, & Lashley, 2001; Boyd-Ritsher, Otilingam, & Grajales, 2003; Corrigan et al., 2006; Crabtree, Haslam, & Postmes, 2010; Frable, Wortman, & Joseph, 1997; Kellison, Bussing, Bell, & Gravan, 2010; King et al., 2007; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001; Rüschi et al., 2006a; Werner, Aviv, & Barak, 2008;), reduced self-efficacy (Corrigan et al., 2006, 2009; Rüschi et al., 2006a; Watson, Corrigan, Larson, & Sells, 2007), quality of life (Jacoby, 2002; Jacoby & Austin, 2007; Rüschi et al., 2006a, b; Rüschi, Corrigan, Todd, & Bodenhausen, 2010), social interaction and adaptation (Berger et al., 2001; Perlick et al., 2001) and overall psychological well-being (Frable et al., 1997; Kellison et al., 2009).

Self-stigma has also been found to be associated with reduced mental health including helplessness, depression, and anxiety (Berger et al., 2001; Kellison et al., 2009; Mak, Poon, Pun, & Cheung, 2007; Yen et al., 2005), and impaired physical health status (Barreto & Ellemers, 2010). Self-stigma may have negative clinical implications as it has been shown that decreased utilization of clinical services (Corrigan, 2004), more negative recovery orientation (Boyd-Ritsher et al., 2003) and decreased adherence to treatment (Sirey et al., 2001) are all related to self-stigma. It is important to note that although self-stigma is being presented separately from public stigma, there is interaction between the two constructs as self-stigma is clearly influenced by public stigma (Corrigan, 2004).

Corrigan et al. (2010b) also describe another group of individuals who may be harmed by stigma—those who avoid seeking treatment for their disorder in order to

remain unmarked. The authors describe how many people with mental illness avoid seeking treatment, which could potentially benefit them greatly, due to concerns about being identified and labeled mentally ill. People who avoid being labeled as having a concealable stigma may be aware of negative stereotypes related to their condition, and may perhaps agree with them. However, these individuals refuse to apply this label to themselves and do everything possible to avoid having their mark discovered by other people. Corrigan et al. (2010b) stated that label avoidance is about completely disassociating from the stigmatized group to avoid the consequences of public and self-stigma. However, as discussed before, keeping a concealable stigma hidden can result in negative consequences as well (Frale, Hoey, & Platt, 1998; Hatzenbuehler, 2009; Link & Phelan, 2006, Major & O'Brien, 2006, Pachankis, 2007; Quinn & Chaudoir, 2009, Smart & Wegner, 1999)

A Multi-Level Model of Stigma

Corrigan and his colleagues developed a theoretical model of self-stigma that is comprised of several different levels (Corrigan & Watson, 2002; Corrigan, Watson, & Barr, 2006; Corrigan et al., 2010b). The first level is called *stereotype awareness* in which stigmatized individuals become aware of the negative stereotypes associated with their condition that are held by the public (e.g., “I believe that the public thinks that people who stutter are incompetent”). Stereotype awareness is perceived stigma whereas the actual event of discriminatory behavior is called enacted stigma (Jacoby, 1994). The second level of the stigma model is called *stereotype agreement* in which individuals

with a stigmatized condition agree with and express the same stereotypes about other members of the stigmatized group that are held by the general public (e.g., “I agree with the public, people who stutter are incompetent and they make me uncomfortable”). The third level of the model is called *self-concurrence* in which individuals internalize and apply the negative attitudes and beliefs found in the public to themselves specifically (e.g., “Because I stutter, I am less competent”). Finally, self-concurrence with the negative belief leads to decrements in psychological well-being including self-esteem and self-efficacy.

An important aspect of this multilevel model of stigma is that it suggests that simply being aware of negative stereotypes against one’s group, or even agreeing with them, are not enough to create self-stigma per se. Therefore, the first two levels of this self-stigma model (awareness and agreement) are hypothesized to be necessary but not sufficient for self-stigma. Corrigan and colleagues believe that the process of self-stigma becomes harmful to psychological well-being only with the addition of self-concurrence (e.g., “Because I stutter, I am strange”) (Corrigan et al., 2006; Corrigan et al., 2010b). Perceiving negative stereotypes (stereotype awareness), and even agreeing that they are true for most members of the stigmatized group (stereotype agreement) may not have any impact on the self, however, internalizing and concurring with those negative stereotypes will be associated with psychological well-being (Corrigan, 1998; Corrigan et al., 2006). This process of different levels of stigma internalization is displayed in Figure 3.

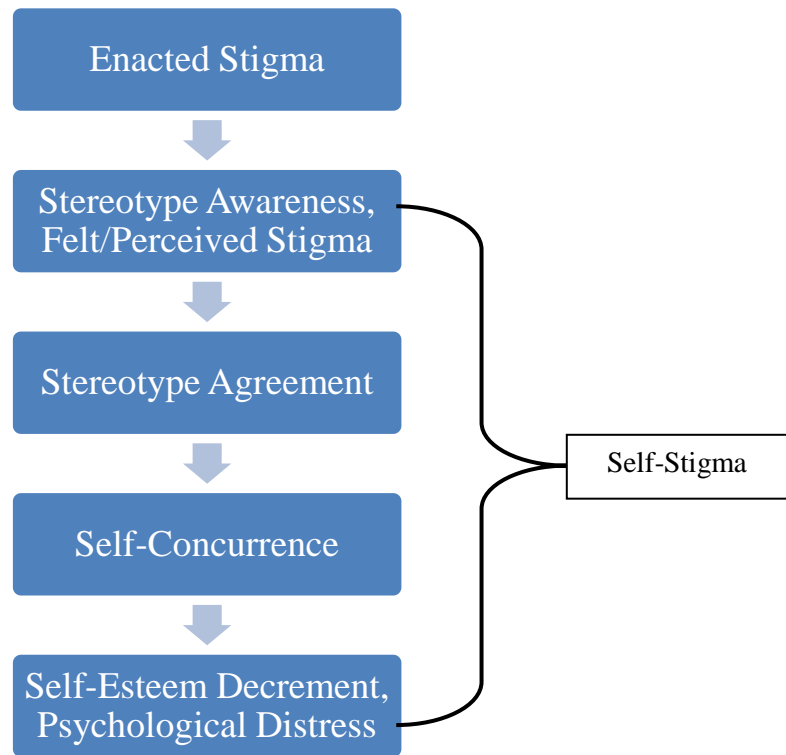


Figure 3. The process of self-stigma. Source: Rao et al. (2009).

The Impact of Stigma on the Self

The issue of how stigma impacts how individuals think about themselves has been the subject of much research. In particular, some specific constructs have been perceived as particularly relevant to stigma: self-esteem, self-efficacy, and subjective well-being (Barreto & Ellemers, 2010; Corrigan et al., 2009; Kellison et al., 2009). Self-esteem refers to generalized feelings of self-worth, self-regard, and self-acceptance that people have for themselves (Rosenberg, 1965; 1979). Essentially, self-esteem relates to how people feel about themselves in a global sense. Self-esteem is a major component of an individual's self-concept. Self-esteem as a general or global construct is conceptually and

empirically different from other constructs such as dimension specific self-evaluation (e.g., self-evaluation in academics, athletics, or personal appearance), and collective self-esteem or evaluations of one's social identity (i.e., evaluations of the value of one's social group) (Crocker & Major, 1989). For example, it is possible for a person to hold his or her social group in low regard, or have a low self-appraisal in a specific dimension of life, and yet have high self-esteem in a global sense. It is this global, or general type of self-esteem that is of interest in this study. Self-esteem is important to study because it is a central component of mental health and general psychological well-being and it has implications for one's achievements and accomplishments, social interactions, and ability to cope with environmental stressors (Battle, 1994; Crocker, 1999).

Self-esteem can be distinguished from self-efficacy which represents one's judgment of capability to execute a certain level of performance (Bandura, 1977). Bandura (1986) defined self-efficacy as "people's judgments of their abilities to organize and execute courses of action required to attain designated types of performance" (p. 391). Higher levels of self-efficacy correspond with higher achievements and lower levels of self-efficacy correspond with lower accomplishments (Bandura, 1982). Self-efficacy plays a key role in life satisfaction and psychological well-being in that it impacts behavior, life goals and aspirations, and perceptions of impediments and opportunities in social contexts (Bandura, 1997). Although they are both important components of psychological well-being, self-esteem and self-efficacy are independent phenomenon. For example, a person may have high efficacy in a particular situation while still having low self-esteem, and vice versa.

Another construct, subjective well-being, is also thought to be relevant to self-stigma (Barreto & Ellemers, 2010). An important element of subjective well-being is individuals' cognitive judgments about their satisfaction with their lives. Life satisfaction is therefore the cognitive component of subjective well-being and measures how well people's current life situation matches a desired standard. Life satisfaction is an important element in overall quality of life that reflects people's values and goals through a conscious evaluation of life circumstances and a comparison of those circumstances to unique sets of standards for how life should be (Pavot & Diener, 1993).

Many classic psychological theories have predicted that people who are stigmatized by society will internalize negative views about themselves and experience negative psychological consequences such as low self-esteem (Allport, 1979; Goffman, 1963). For example, symbolic interactionists support a looking-glass self hypothesis which is the notion that one's self-concept develops through social interaction and reflects the appraisals of other people (Cooley, 1956). Therefore, a person who is aware that he or she is stigmatized by society would integrate these negative views into the self-concept and experience reduced self-esteem. However, empirical evidence for this theory is mixed as it is often observed that the self-esteem of stigmatized group members is very similar, sometimes even higher, than self-esteem of non-stigmatized groups (Crocker, 1999). This finding has been observed in studies that have analyzed ethnicity and race, gender, physical disfigurement, obesity, mental and physical disabilities, mental illness, and sexual orientation (see Crocker & Major, 1989, for a review).

It is evident from these findings that individuals who are stereotyped and discriminated against are not all simply passive victims of public stigma (Crocker &

Major, 1989; Quinn & Chaudoir, 2009). There is a large unexplained variance in the relationship between stigma and aspects of mental health (Mak et al., 2007). Some individuals with a stigmatized condition exhibit diminished self-esteem and lowered self-efficacy and others do not (Corrigan et al., 2009). There may be many personal or situational factors that play a mediating or moderating role in a person's responses to stigma and may serve to buffer self-esteem and self-efficacy among members of devalued or stigmatized groups in society (Corrigan & Watson, 2002; Crabtree et al., 2010; Frable et al., 1997; Leach, Rodriguez-Mosquera, Vliek, & Hirt, 2010; Major, Kaiser, O'Brien, & McCoy, 2007; Major & O'Brien, 2005; Sibitz et al., 2011; Watson et al., 2007).

One potential buffer to self-esteem and self-efficacy among stigmatized populations is their level of acceptance or internalization of the negative attitudes from the public. People who are stigmatized may be aware of the stigma but not endorse it (Corrigan, 1998). Perceiving that a stigma toward one's group exists may simply be knowledge of a cognitive structure that has no impact on the self (Corrigan et al., 2006). Knowledge of the structure cannot be erased, however internalization of the stigma can be changed so that the person does not endorse the stigma (Corrigan, 1998). Those who have internalized the negative views of society toward their group should be at heightened risk for low self-esteem (Jones et al., 1984; Rosenberg, 1979). This variable of internalization relates to the multi-level model of stigma presented previously in that Corrigan and colleagues hypothesize that only internalization or self-concurrence with stigma leaves one vulnerable to decrements in psychological well-being (Corrigan et al., 2009; Corrigan & Watson, 2002).

There are many other aspects of a stigmatized condition that may possibly moderate the relationship between stigma and psychological well-being including type of onset (sudden vs. gradual), course (time limited and reversible vs. chronic and prolonged), consistency/stability (relatively stable vs. unstable with periods of exacerbation and remission), time since acquisition, concealability, perceived responsibility for the condition, and how important the stigmatized condition is perceived to be by the stigmatized individuals (Crocker & Major, 1989; Livneh & Antonak, 1997). All of these variables may be relevant in how people adapt to a stigmatized condition. In addition, there are many personal and environmental variables that may be related to psychological well-being among stigmatized individuals including coping style and ability, personality characteristics, and perceived social support (Livneh & Antonak, 1997). Combinations of these different demographic, disability-related, personal, and environmental factors may have implications for aspects of individuals' psychological well-being including self-esteem and self-efficacy.

Stuttering and Stigma

Stuttering and public stigma

There is an abundance of research that has looked at negative stereotypes of PWS from a wide variety of populations. The methods used in most of these studies include participants filling out semantic differential scales of personality characteristics (Woods

& Williams, 1976), and listing adjectives to describe a hypothetical PWS, or PWS as a group (Lass, Ruscello, Pannbacker, Schmitt, & Middleton, 1989). Recently, studies using mixed methods including open-ended questions have been used to determine public perceptions of stuttering and PWS (Hughes, Gabel, Irani, & Schlagheck, 2010; Schlagheck, Gabel, & Hughes, 2009).

PWS are consistently thought to possess several negative or undesirable personality characteristics by many groups of people including beliefs that PWS are: introverted, shy, anxious, nervous, quiet, tense, guarded, fearful, embarrassed, and frustrated (Kalinowski, Stuart, & Armson, 1996). With a few exceptions (Irani & Gabel, 2008; Swartz, Gabel, & Irani, 2009) these beliefs have been found in wide range of populations including lay people (Craig, Tran, & Craig, 2003; Crowe & Cooper, 1977; Doody, Kalinowski, & Stuart, 1993; Ham, 1990; Kalinowski, Armson, Stuart, & Lerman, 1993; Kalinowski et al., 1996; Schlagheck et al., 2009; Van Borsel, Verniers, & Bouvry, 1999), teachers (Crowe & Walton, 1981; Dorsey & Guenther, 2000; Lass et al., 1992; 1994; Woods, 1978; Yeakle & Cooper, 1986), special educators (Ruscello, Lass, Schmitt, & Panbacker, 1994), healthcare professionals (Silverman & Bongey, 1997), employers (Hurst & Cooper, 1983a), vocational rehabilitation counselors (Hurst & Cooper, 1983b), college students and professors (Boyle, Blood, & Blood, 2009; Dorsey & Guenther, 2000; Hughes et al., 2010; MacKinnon, Hall, & MacIntyre, 2007; Silverman & Paynter, 1990), and even speech-language pathologists (Cooper & Cooper, 1996; Hult & Wirtz, 1994; Kalinowski et al., 1993; Lass et al., 1989; Ragsdale & Ashby, 1982; Turnbaugh, Guitar, & Hoffman, 1979; Yairi & Williams, 1970). It has also been found that school

age children hold similar negative perceptions about PWS as adults do (Frank, Jackson, Pimentel, & Greenwood, 2003).

Research on moderator variables related to public stigma for stuttering are equivocal. Some studies report that females tend to view PWS more positively than males do on personality and pleasantness dimensions (Burley & Rinaldi, 1986; Schlagheck et al., 2009; Weisel & Spektor, 1998) and some detected no gender difference (Boyle et al., 2009; Hughes et al., 2010; Patterson & Pring, 1991). The same ambiguity exists for familiarity with PWS. Some studies report that on-going contact with at least one PWS is associated with less stereotypical views of PWS in general and more favorable views of the PWS (Klassen 2001; 2002, Schlagheck et al., 2009) while others found no such familiarity effect (Boyle et al., 2009; Doody et al., 1993; Hughes et al., 2010; Hult & Wirtz, 1994; Woods & Williams, 1976). However, it does appear clear that education level is not a determining factor in perceptions of PWS, as many highly educated individuals hold negative stereotypes toward PWS as well (Dorsey & Guenther, 2000; Silverman & Paynter, 1990). In addition, people tend to stigmatize PWS more when they attribute stuttering to psychological causes, rather than genetic or unidentified causes (Boyle et al., 2009).

Without a doubt, more research on moderating variables associated with stuttering stereotypes needs to be conducted. Hughes et al. (2010) conducted a qualitative analysis of university students' perceptions of PWS and found more of a mixture of both positive and negative stereotypes than has traditionally been found using strictly quantitative methods. The authors found that PWS are thought of as being nice, patient, friendly, and trustworthy, while at the same time shy, nervous, incompetent, and unemployable. These

results are similar to a quantitative study by Boyle et al. (2009) in which PWS were thought to be friendly, cooperative, and pleasant, although guarded, nervous, shy, withdrawn, tense, and afraid at the same time. Hughes et al. (2010) explain these results using a model proposed by Cuddy, Fiske, & Glick (2008) which categorizes judgments about a stigmatized group along dimensions of warmth and competence. PWS, they contend, appear to be perceived as high in warmth (e.g., friendly, helpful, nice, etc.) but low in competence. This combination of high-warmth and low-competence elicits feelings of pity and passive harm (e.g., avoidance) from the general public (Cuddy et al., 2008).

Other studies support the findings that PWS are believed to be less competent or intelligent than their fluent counterparts. Nurses rate physicians who stutter as less intelligent, competent, confident, educated, and reputable compared with physicians who do not stutter (Silverman & Bongey, 1997). University students view both lawyers and factory workers who stutter as less competent than their fluent counterparts (Silverman & Paynter, 1990). These prejudiced reactions can lead to discrimination against PWS. Many groups including employers (Hurst & Cooper, 1983a), vocational rehabilitation counselors (Hurst & Cooper, 1983), and university students (Gabel, Blood, Tellis, & Althouse, 2004; Schlagheck et al., 2009) believe that stuttering negatively impacts employment possibilities for PWS and that jobs requiring frequent oral communication are inappropriate choices for PWS.

The public stigma of stuttering can also be seen in the entertainment industry and news media. Johnson (2008) and Kuster (2011) describe several feature films which depict the character who stutters as being flawed in some way. In motion pictures such as

Pan's Labyrinth (2006), *Pearl Harbor* (2001), and *The Cowboys* (1972), PWS are depicted as incapable of handling a crisis and crumbling under pressure to the extent that their own lives or the lives of others are put in jeopardy. In movies like *My Cousin Vinny* (1992), and *A Fish Called Wanda* (1988), stuttering is portrayed as comical and something to mock. It also represents something that makes the characters appear less competent and other characters take them less seriously as a consequence. In other movies such as *Harry Potter, the Sorcerer's Stone* (2001), *Primal Fear* (1996), and *One Flew Over the Cuckoo's Nest* (1975), stuttering is portrayed as an underlying symptom of psychological maladjustment, a trait possessed by murderers, evil people, or emotionally and psychologically disturbed individuals. Major motion pictures can impact public perceptions of stuttering among the public, and although some recent films such as *The King's Speech* (2010), and *Rocket Science* (2007), seem to represent stuttering in a mostly positive light, many others do not and may help reinforce negative stereotypes about people who stutter.

The news media also plays a role in shaping public perceptions about stuttering. Many popular television news programs have attempted to sensationalize stuttering and portray it as something to be pitied. After the development of the SpeechEasy, an in-the-ear device that produces altered auditory feedback, several major news and entertainment television programs seemed to give impression that the SpeechEasy was a quick cure for stuttering. Carefully edited "before" and "after" video clips that contrasted struggled speech with fluency created the impression that there was a quick fix for stuttering. Furthermore, these programs seemed to communicate the message that PWS are dependent on an external cure in order for them to live a good and happy life.

Negative stereotypes of people who stutter can also be seen in children's entertainment and reading material as well. For example, the classic Warner Brothers cartoon character Porky Pig presents stuttering as something humorous and an indicator of a character flaw. He is routinely put into traumatic situations to which he must react, experiences ridicule from tormentors, as if often cast as inferior to other characters (Johnson, 1987). Bushey and Martin (1988) reviewed 20 juvenile fiction books that contained a main character who stuttered. They concluded that many of the characters were portrayed negatively, including being withdrawn or emotionally disturbed. Logan, Mullins and Jones (2008) reviewed 29 children's books and observed that some books imply that stuttering is a symptom of emotional distress. The authors also noted that most books presented negative listener responses to stuttering including impatience and well as teasing, bullying, and ridicule.

Bullying is not just a problem for fictional characters who stutter, a growing body of research suggests that it is a major problem for a substantial number of children and adolescents who stutter (Hugh-Jones & Smith, 1999). It has been found that children who stutter are at a higher risk of experiencing bullying compared with children who do not stutter by a ratio of about 4 to 1 (Blood & Blood, 2004; 2007; Blood et al., 2011) and that a great majority (81%) of children who stutter report being upset by the bullying (Langevin, Bortnick, Hammer, & Weibe, 1998). Stuttering has been observed to negatively impact social interaction, even among preschool children (Langevin, Packman, & Onslow, 2009). Children who stutter are likely to be teased (Evans, Healey, Kawai, & Rowland, 2008), be rejected more often, categorized as "less popular," less likely to be named "leaders," and more likely to be seen as having lower social status

compared to fluent peers (Davis, Howell, & Cook, 2002). These stereotypes and behavioral reactions from fluent peers toward children who stutter may have negative implications for academic advancement. If children who stutter are labeled as being shy, timid, fearful, non-assertive, and less likely to communicate, they may have less opportunities to take on leadership roles and speak up in class or activities.

Stuttering during adolescence may have even farther reaching implications. In a recent study by Van Borsel, Brepoels, and De Coene (2011), participants rated their attractiveness and willingness to engage in a romantic relationship with age-matched pictures of people from the opposite sex. Verbal descriptions of a person in a picture were given to the participants, and in half of the pictures, the sentence “He/she is a person who stutters” was inserted into the verbal description. The people in pictures with the accompanying label of being a PWS were rated as less attractive as a group than people without that label. In addition, the participants reported less likelihood of wanting to engage in a romantic relationship with the labeled PWS as compared with people who do not stutter. In summary, it appears that there is a public stigma experienced by PWS which may impact vocational, educational, and social dimensions of life.

It appears clear that many PWS face public stigma, but what are the origins of these negative stereotypes? Many theories have been posited regarding the process of stigmatization in general. Goffman (1963) stated that a person possessing just one attribute devalued by society can lead to the perception of a “spoiled identity” for the individual. Longmore (1985) hypothesized that a visible disability will “obscure all other characteristics behind that one and will swallow up the social identity of the individual within that restrictive category” (p. 419). Wright (1983) wrote about a “spread

phenomenon” and “fundamental negative bias” in which negative perceptions of a specific disability will spread to other aspects of the person such as intelligence, competence, or personality. These descriptions sound similar to the experiences of some PWS who feel stigmatized, as can be detected in this quote from the authors of a qualitative study about the experience of being a PWS: “All else that was positive about them was obscured and discounted, as the presence of their stuttering captured their listener’s attention and became the primary focus” (Corcoran & Stewart, 1998, p. 254).

Regarding origins of stereotypes associated with stuttering specifically, many theories have been put forth. Woods and Williams (1976) believed that high trait anxiety in PWS is inferred through observation of state anxiety during speech. Kalinowski et al. (1996) similarly believed that exposure to PWS and observation of the stuttering moment itself is the key factor in the formation of the stuttering stereotypes. These authors state that physical tension and struggle are the most salient and vivid behaviors associated with stuttering. The public then infers that an individual demonstrating behaviors characterized by tension, struggle, and hesitation also possesses character traits that reflect those behaviors (Doody et al., 1993; Kalinowski et al., 1987). White and Collins (1984) found a high positive correlation between participants’ adjective descriptions of a PWS and a normal speaker with an episode of disfluent speech. This led the authors to believe that people who do not stutter infer anxiety, tension, nervousness, and embarrassment from their own experiences with temporary disfluent speaking moments and apply them as a constant personality trait for PWS.

MacKinnon et al. (2007) expanded this notion with their “anchoring-adjustment” theory of stuttering stereotype formation. These authors obtained results similar to White

and Collins (1984) which again showed high positive correlations between a PWS and a normal speaker with state disfluencies, representing how participants “anchored” their judgments about PWS in their knowledge of their own experiences of state disfluency. Participants were then found to have made small “adjustments” to these attitudes, shown through less negative ratings of the PWS compared with the state disfluent person. This adjustment phase represents the listener’s realization that temporary disfluency and stuttering are not exactly the same. However, MacKinnon et al. (2007) reported that participants were underestimating the differences between a person with a permanent, uncontrollable stutter, and a person experiencing state disfluency. The authors explained that this could be due to people stopping their adjustments before considering all possible explanations for stuttering—an example of accuracy sacrificed for efficiency in cognitive processing.

Regardless of the precise origins of the stuttering stereotype, it appears difficult to change among members of the public. Researchers have that found student speech-language pathologists’ exposure to PWS in clinical and group therapy settings may actually lead to an increase in some negative stereotypes including nervousness, tenseness, and reticence (Leahy, 1994). A study by McGee, Kalinowski, and Stewart (1996) found that negative stereotypes of PWS (e.g., nervous, shy increased, guarded, tense, quiet, insecure) increased following watching a one hour video of adults who stutter. Snyder (2001) found minimal changes in SLP graduate students’ attitudes toward PWS after showing either a factual based movie on stuttering or an emotionally appealing video about the courage of PWS. Recently, Flynn and St. Louis (2011) measured the effects of live oral presentation given by a PWS relative to a video about PWS. Both

demonstrated that some attitudes can be improved, however, a live presentation was more effective in producing attitude change than was a professionally made video. Conflicting findings in these studies can probably be related to the stimuli and how the information was presented to the participants. Clearly, further research is needed to determine the factors required to produce positive attitude change toward PWS and reduce stereotypes.

Stuttering and self-stigma

As a result of exposure to stigma from the public, PWS may be at risk for self-stigma. There have been many qualitative research studies that demonstrate self-stigma among PWS and the negative implications this has for psychological well-being. First of all, it is clear that some PWS believe that others will perceive them as “mentally defective,” “stupid,” “strange,” “not good enough,” “a fool,” “incompetent,” “freak of nature,” “not a whole person,” “mentally retarded,” “inferior,” “socially crippled,” “not normal,” “an imbecile,” “an idiot,” or “crazy” because of their stuttering (Bricker-Katz, Lincoln, & McCabe, 2010; Corcoran & Stewart, 1998; Klompass & Ross, 2004; Plexico, Manning, & Levitt, 2009; Whaley & Parker, 2000). These beliefs about how others are perceiving them may be internalized and integrated as part of the self-concept of the PWS, as illustrated by these quotes: “Absolutely, stuttering has affected my self-esteem, self-image, self-identity, and the way I see and value myself” (Klompass & Ross, 2004, p.295) and “...well, because I stutter...I don’t deserve to say what I was going to say. I

think it kinda brings down my self-worth at times. When I have, like, when looking for a job, that oh, I'm not worthy of that" (Plexico et al., 2009, p.98).

In addition to this qualitative research, quantitative data has also been collected from larger groups of PWS which demonstrate that they generally hold the same stereotypes about undesirable personality characteristics of PWS that are commonly held among the general public (Craig et al., 2003; Kalinowski, Lerman, & Watt, 1987; Lass et al., 1995; MacKinnon, Hall, & McIntyre, 2007; Woods & Williams, 1976). Furthermore, it is clear that many PWS believe that stuttering interferes with employability, and a considerable percentage have turned down jobs or promotions because of their stuttering (Hayhow, Cray, & Enderby, 2002; Klein & Hood, 2004). Participation restriction can be seen in other areas besides employment. Many PWS believe that they are restricted in their participation in any desired activities that involve speaking (Bricker-Katz et al., 2010; Daniels, Hagstrom, & Gabel, 2006) indicating general patterns of participation restriction in society for some PWS. These findings from qualitative and quantitative research suggest that stereotypes, prejudiced reactions, and discriminatory behavior can be internalized among PWS.

These findings may help us understand why much recent research has found decreased psychological well-being and mental health among many adults who stutter. Many troubling findings have been found over the past several years among groups of PWS including the presence of shame and self-consciousness (Patraka-Ginsberg, 2000), heightened presence and risk for many mental health problems including personality disorders (Iverach, Jones, et al., 2009a), social and generalized anxiety disorders and social phobia (Blumgart, Tran, & Craig, 2010; Iverach, O'Brian et al., 2009; Iverach et

al., 2010; Stein, Baird, & Walker, 1996), neuroticism (Iverach et al., 2010), negative mood states (Tran, Blumgart, & Craig, 2011), and reduced overall quality of life including social and emotional functioning (Craig, Blumgart, & Tran, 2009) compared with fluent controls. The researchers conducting these studies are clear in stating their belief that these psychological variables are the result of stuttering rather than the cause. They believe that these psychological findings are likely to be the result of living with a chronic communication disorder and that it would be unnatural for adults who stutter to not have these negative reactions to repeated experiences with social penalties and negative consequences associated with stuttering (Iverach et al., 2009; Iverach et al., 2011). The social penalties spoken of by these researchers indicate public stigma and negative consequences associated with stuttering could include self-stigma.

Connections Between Stuttering, Stigma, and Well-Being

The previously stated findings of the stigma of stuttering can be applied to the multi-level model of stigma described earlier. There is evidence that PWS are aware of the fact that they may be perceived negatively by the public (Bricker-Katz et al., 2010; Plexico et al., 2009) which demonstrates stereotype awareness. There is also evidence many PWS hold the same negative views about other PWS that are held among the general public (Craig et al., 2003; Kalinowski et al., 1987), indicating stereotype agreement. However, although PWS may agree with negative stereotypes about other PWS, or a hypothetical PWS, studies have shown that many PWS rate themselves personally in a positive, non-stereotypical manner (Fransella, 1968; Kalinowski et al.,

1987; Manning, Dailey, & Wallace, 1987) and believe that stuttering is significantly more handicapping for the “average person who stutters” than for themselves (Klein & Hood, 2004). These findings indicate a lack of self-concurrence or internalization among many PWS. According to the multi-level model of stigma, those PWS who do not self-concur or internalize the stigma should not demonstrate a decrement in self-esteem.

The evidence that PWS may not concur with stigma even though they are aware of it and apply it to other PWS may be a coping mechanism to buffer self-esteem and mitigate the negative effects of being stigmatized. It is important to remember that global self-esteem is different from other psychological dimensions such as anxiety or depressive mood states. Therefore it is possible for PWS to experience detrimental psychological consequences because of living with stuttering (Blumgart, Tran, & Craig, 2010; Iverach, Jones, et al., 2009) and yet maintain global self-esteem (Crocker & Major, 1989). Surprisingly, there has been minimal quantitative research done investigating the self-esteem of PWS compared to people who do not stutter. The few studies that have used between group comparisons of the self-esteem of PWS and people who do not stutter and findings indicate that a majority of PWS have self-esteem within normal limits or comparable to people who do not stutter (Blood & Blood, 2004; Blood, Blood, Tellis, & Gabel, 2003; Blood et al., 2011; Yovetich, Leschied, & Flicht, 2000). However, these studies were done with adolescents and school-age children and not adults. Although several qualitative studies have found that reduced self-esteem can result from stuttering, these studies are limited in their generalizability.

In addition to self-esteem, self-efficacy has been studied among PWS as well. It has been found that, as a group, PWS exhibit lower self-efficacy for speaking than people

who do not stutter (Bray, Kehle, Lawless, & Theodore, 2003; Ornstein & Manning, 1985) which perhaps is not surprising given that an intrinsic component of stuttering is difficulty with the process of fluent speech production.

Examining group differences between PWS and people who do not stutter on measures like self-esteem and self-efficacy is important but the results may be difficult to interpret due to large within group variability on these measures. The more important topic may be to analyze the variables within the stigmatized group that may leave individuals more vulnerable to decreased self-esteem and self-efficacy (Friedman & Brownell, 1995). There is much variability in how stigmatized individuals respond to their stigmatized conditions. As described earlier, one major source of this variability could be the extent to which stigmatized individuals accept and internalize negative attitudes of society and apply them to themselves (i.e., self-concurrence) (Corrigan & Watson, 2002; Crocker & Major, 1989).

Another source of variability may be the person's stuttering severity. As mentioned previously, many theorists believe that more noticeable, socially disruptive conditions will lead to more stigma (Jones et al., 1984) therefore one might expect that increased stuttering severity would be related to lower self-esteem. Previous research is equivocal regarding the relationship between psychological well-being and stuttering severity. It has been demonstrated that shame and self-consciousness are positively related to stuttering severity (Patraka-Ginsberg, 2000) and that increased stuttering frequency is demonstrated in clients identified as having mental disorders (Iverach, Jones, et al., 2009b). However in other studies, weak relationships have been found

between stuttering severity and quality of life (Craig et al., 2009), and between stuttering severity and negative mood states or psychological distress (Tran et al., 2011).

As mentioned previously, there could also be a host of other variables associated with self-stigma that might be expected to contribute to self-esteem, self-efficacy, and life satisfaction. These factors may be disability related factors (e.g., type of onset, course, consistency/stability, perceived responsibility, time since acquisition, visibility), personal or individual factors (e.g., personality, coping and problem solving skills, life orientation, importance of the stigma in the self-concept, religious/spiritual/ philosophical beliefs), and environmental factors (e.g., family support and acceptance, availability of self-help and mutual aid groups, professional services rendered, and access to available treatments and assistive technologies) (Crocker & Major, 1989; Livneh & Antonak, 1997; Smart, 2001). Some of these factors, including environmental and disability-related factors are tangible and usually easily measureable while factors in the individual are more difficult to measure (Smart, 2001). These factors will also be important to account for in order to more fully understand connections between stigmatized conditions and aspects of psychological well-being including self-esteem, self-efficacy, life satisfaction.

Purpose of the Current Study

Many speech-language pathologists have theorized that stigma may shape PWS in that they will modify their self-concepts so that they match the perceptions that others have of them (Woods, 1978; Woods & Williams, 1976). Essentially, this view represents the looking-glass self hypothesis presented earlier. A common view is that the negative

stereotypes that others have of PWS, particularly speech-language pathologists, will influence not only their speech behaviors, but also self-evaluations and actions (Turnbaugh, Guitar, & Hoffman, 1979; Woods & Williams, 1976). In essence, this traditional perspective hypothesizes that stereotype awareness would lead to internalization of those negative views. However, the multi-level model of stigma presented in this paper predicts that mere awareness of stigma, without self-concurrence, is not enough to produce self-stigma or have implications for negative psychological consequences.

The purpose of this study is to design a psychometrically sound measure of self-stigma in PWS and test a multi-level model of stigma in the context of stuttering. Specifically, it is of interest to know if internalized stigma, particularly self-concurrence, is negatively related to self-esteem, self-efficacy, and life satisfaction. As described earlier, these constructs were chosen because they are crucial components of mental health and well-being. Mentally healthy individuals value themselves, respond adaptively to meet the challenges and stresses of everyday life, and pursue goals and aspirations that make life fulfilling (Hales & Hales, 1995). Improving mental health, well-being, and quality of life are major goals of speech-language pathologists when working with people who stutter (Tran et al., 2011; Yaruss, 2010). This idea has been reinforced with the recent findings that reduced mental health among PWS may be associated with avoidance of speaking situations (Iverach, Jones, et al., 2009b) and failure to maintain benefits of speech modification after therapy (Iverach et al., 2009a).

To measure the stigma associated with stuttering effectively, it seemed appropriate to create and tailor a scale related to individuals who stutter specifically,

rather than use a more general measure of stigma. There have been many scales developed to measure perceptions, attitudes, and feelings of adults who stutter (Andrews & Cutler, 1974; Erickson, 1969; Ornstein & Manning, 1985; Riley, Riley, & Maguire, 2004; Woolf, 1967 Yaruss & Quesal, 2006). For example, the “S-Scale” (Erickson, 1969) and its 24 item adaptation (Andrews & Cutler, 1974) measure the attitudes of PWS across different speaking situations. The Stutterer’s Self-Rating of Reactions to Speech Situations (Darley & Spriesterbach, 1978) is a 40 item measure which attempts to measure the extent of avoidance and dislike of certain speaking situations. Woolf’s (1967) Perceptions of Stuttering Inventory (PSI) is a 60 item checklist that looks at struggle, avoidance, and expectancy issues related to stuttering. Despite the numerous scales available to measure attitudes and perceptions of adults who stutter, a scale has not yet been developed which measures the stigma specifically associated with stuttering in a multidimensional framework which captures the major aspects of stigma. A major purpose of this study was to create such a scale. This study used this newly developed scale to analyze variables that may put PWS at risk for reduced psychological well-being. Not concurring with stigma could be a protective mechanism that PWS employ to buffer self-esteem, self-efficacy, and satisfaction with life.

Research Questions and Hypotheses

After a review of the literature, and using the multi-level model of stigma (Corrigan, 2004; Corrigan et al., 2009; Corrigan & Watson, 2002) as a theoretical model, the following primary research questions and corresponding hypotheses were generated:

1. What are the psychometric properties of the 4S regarding internal consistency, temporal stability, factor structure, content validity and initial construct validity?

Hypothesis: The scale will demonstrate adequate internal consistency and temporal stability, there will be three major factors that emerge (stereotype awareness, stereotype agreement, and self-concurrence), and initial construct validity will be supported through negative correlations between self-concurrence and self-esteem, self-efficacy, and life satisfaction while controlling for perceived stuttering severity.

2. Is self-concurrence a significant predictor of self-esteem, self-efficacy, and life satisfaction for adults who stutter above and beyond demographic and stuttering-related variables?

Hypothesis: Self-concurrence will be a significant predictor of self-esteem, self-efficacy, and life satisfaction above and beyond demographic and stuttering related variables.

A secondary research question involved asking which stuttering-related, personal/individual, demographic, and environmental factors may be related to aspects of psychological well-being including self-esteem, self-efficacy, and life satisfaction among adults who stutter. This was important to determine because it allowed any of these relevant factors to be controlled for in analyses related to the predictive strength of self-stigma on the dependent variables.

Chapter 2

Methods

Participants

The participants in this study were 291 PWS who were 18 years of age or older. The number of participants required was determined by conducting a power analysis in the computer software program G*Power Version 3.1 (Buchner, Erdfelder, Paul, & Lang, 2009). This a priori analysis was conducted on the assumptions that (1) multiple regression analyses with up to 10 predictor variables at a time would be conducted, (2) α would be set at .05, (3) a minimum power level of .80 was adequate, and (4) a medium effect size, $f^2 = .15$ (in this case representing the magnitude of the relationship between self-stigma and psychological well-being) can be detected. This effect size was selected because of results of a meta-analysis demonstrated the correlation between self-stigma and mental health was $-.28$ (Mak et al., 2007). According to Cohen (1992), this is a medium correlational effect size, which could be recognized in daily life. To meet the assumptions listed above, it was determined that $N = 118$, $F(10, 107) = 1.92$.

In addition to this analysis, it needed to be determined what an adequate sample size was for analyzing psychometric properties of the novel scale. Factor analysis needed to be conducted to determine dimensionality of the scale. Streiner (1994) stated that adequate solutions for factor analysis can be obtained with a ratio of 5 participants for every variable in the scale, as long as there are 100 participants in the sample. Many other

researchers follow the guideline of having at least 5 participants per item (Floyd & Widaman, 1995). To determine the number of participants required for a valid factor analysis in this study, it needed to be determined how many items were included in the experimental scale. With 73 items on this novel scale for this study, it was estimated that 365 participants would be needed for 73 items, following the 5:1 ratio ($5 \times 73 = 365$). Although this target was not obtained in this study, the 291 responses allowed for factor analysis of separate subsections of the 4S. After some items were eliminated from the original item pool, factor analyses with adequate power were able to be conducted on revised versions of the entire scale which included 45 items and then finally 33 items ($5 \times 45 = 225$; and $5 \times 33 = 165$).

Survey Mode

The survey mode for this study was Web-based. This was done in order to maximize the number of participants able to access and complete the survey. Compared to traditional mail surveys, Web-based surveys of PWS are a more recent method (Venkatagiri, 2009) and it is difficult to calculate response rates in this mode because it cannot always be known how many people received the survey. If the number of recipients is well known, Web surveys with PWS have generally yielded a 25% response rate which is comparable to most web surveys (Tetnowski, personal communication, March 9, 2011).

Web based surveys have some advantages over traditional mail surveys in that they are more efficient in distribution and data management (Kaplowitz, Hadlock, &

Levine, 2004), allow for a larger number of potential respondents (provided the respondents have access to the internet), and they are perceived by many survey respondents to be easier to fill out and less likely to be misplaced (Kiernan, Kiernan, Oyler, & Gilles, 2005). However, in some studies Web surveys yielded lower response rates than traditional mail surveys (Archer, 2003; Cobanoglu, Warde, & Moreo, 2001; Cook, Heath, & Thomson, 2000; Couper, 2000; McDonald & Adam, 2003) possibly due to respondents having multiple e-mail addresses, concerns over internet security, and the likelihood that Web surveys will be viewed as “spam” or “junk mail” (Sills & Song, 2002). Other studies however, demonstrate that among populations in which each member has internet access, response rates of Web surveys can be comparable or even higher than traditional mail surveys provided that pre-notification is sent before the Web survey is delivered (Kaplowitz et al., 2004; Kiernan et al., 2005). There appear to be both costs and benefits associated with both Web and traditional mail survey modes, however a Web survey allowed for potentially more people to respond compared with a traditional mail survey.

Recruitment of Participants

Participants for this study were recruited through self-selection of members of the National Stuttering Association (NSA) and clients of Board Recognized Fluency Specialists. Self-selection was necessary because it provided access to the largest clusters of PWS and increased the number of participants able to respond to the survey. Although random sampling is the ideal choice in survey research, truly random samples of large

numbers of PWS in the general population are difficult to access due to lack of any formal identification structure, such as membership lists or client lists. Self-selection has been used in many other surveys of PWS (Craig et al., 2009; Hayhow et al., 2002; Klein & Hood, 2004; Venkatagiri, 2009).

One of the biggest recruitment tools for this study was the NSA. The NSA is the largest non-profit self-help organization for PWS in the United States with over 100 support group chapters across the country. The NSA provides advocacy, outreach, and education to PWS, professionals, and the public regarding stuttering. Although it is reasonable to question the recruitment of participants through an organization which is based on self-help and empowerment of PWS to measure the self-stigma of stuttering, it is clear that the NSA is not a homogenous group. Surveys of NSA members have shown that they represent a wide range of socio-economic levels, geographical regions, ages, stuttering severity levels, and attitudes and beliefs about stuttering and stuttering treatment are diverse (Yaruss et al., 2002a; 2002b).

In addition to the use of NSA members, other recruitment strategies were used to enhance heterogeneity of respondents. In order to access PWS who are not necessarily involved in support groups associated with the NSA, fluency specialists were contacted through a list of Board Recognized Specialists in Fluency Disorders which is available online. These professionals have access to clients who may not be in any way involved in the self-help community.

Unfortunately, these sampling methods leave out PWS who have not identified themselves as PWS, or have not sought out therapy or self-help. Although this could be problematic, it is a constraint which most research in stuttering faces. If individuals do

not self-identify as PWS or if they do not seek therapy or support, it will be incredibly difficult to recruit these individuals in research studies. On the other hand, this may not be as large of a problem as it first seems. The author has observed a wide variety of PWS attending NSA conferences and support groups. For example, some attendees are very open and proud of their stuttering, and some state that they are very secretive about stuttering in their everyday lives. Again, PWS represent a diverse landscape, even among those who participate in self-help groups. These observations are backed up research on the characteristics and beliefs of members of the NSA (Yaruss et al., 2002a; 2002b).

Procedure

The Web survey for this study was created using Qualtrics Survey Research Suite software Version 28,206 (Qualtrics Labs, Inc., Provo, UT). After approval for this project was obtained from the National Stuttering Association Research Committee (NSARC) and the Institutional Review Boards (IRB) at The Pennsylvania State University, the NSA publicized the survey through sending mass e-mails to all people on the NSA database in the United States. The Dillman (2008) method was used for determining the number of requests sent to potential participants as well as the amount of time between requests. An initial e-mail sent out to the NSA database with a brief introduction and description of the survey along with the web link to the survey that could be taken online. Approximately three weeks later, a second reminder email was sent out describing the importance of participation for the most representative results. The reminder notification again included a link to the Web survey. A final e-mail requesting the participation of

those who had not yet completed the survey was sent to the NSA database approximately six weeks after the second message. For each request, the NSA executive director emailed the surveys to the NSA database, not the author. All participants listed on the database lived in the United States, however, it is possible that the e-mail was forwarded by recipients to other PWS who lived in other countries.

A similar procedure was followed with Board Recognized Specialists in Fluency Disorders (BRS-FD) in the United States. These specialists were identified from a website listing their names and contact information. These individuals were first sent a pre-notification e-mail that alerted them to the future request they would be receiving to forward the survey to their adult clients who stutter or anyone else that they know who stutters. About two days later, these individuals were e-mailed a brief description of the study and its purpose along with a link to take the survey online, and a request to forward the email to clients or group members. Approximately one week after the second contact, a reminder e-mail was sent to these same individuals, again with a link to take the survey online and a request to forward the message. A final reminder e-mail was sent to the BRS-FD about one month after the third contact. Contacts to BRFS were made by the author because contact information for these individuals was publically available online.

After participants opened the link contained in the e-mail, they had to agree to the terms of the overview and consent form which described the components and purpose of the study and a statement of confidentiality of results as well as data security. The consent form that participants agreed to is shown in Appendix A. If they agreed to complete the survey, the participants were given two screening questions to begin. The first question asking if the participant is a person who stutters and the second question

asking if the participant is 18 years of age or older. If participants answered “no” to either of these questions, the survey was terminated and they were not able to continue. The surveys that the respondents completed were comprised of several different components including, in order, the experimental scale created by the author measuring self-stigma, three previously existing psychosocial measures of self-esteem, life satisfaction, self-efficacy, a previously existing scale measuring perceived stuttering severity, and a section measuring demographic and stuttering-related information. Detailed descriptions of the different components of the survey are presented in the following section.

Instruments

The Self-Stigma of Stuttering Scale (4S)

The 4S was an experimental scale that was developed as part of this research project. The general idea and content of this scale was adapted from the Self-Stigma of Mental Illness Scale (SSMIS) developed by Patrick Corrigan and his colleagues that has been used in several research studies (Corrigan et al., 2006; Rüscher et al., 2006a). The 4S includes different subscales measuring different aspects of self-stigma. The first four sections intended to examine stereotype awareness, which is the extent to which PWS think that most people will devalue or discriminate against them. This section contains different subsections that address stereotypes (e.g., “I think the public believes that most persons who stutter are insecure”), prejudiced reactions (e.g., “When talking to a person who stutters, most people in the general public feel pity for the person who stutters”), and

discriminatory behaviors (“Most people in the general public believe that people who stutter should avoid jobs that require lots of talking”). These sections are also similar to the Devaluation-Discrimination subscale of Link’s perceived stigma measure (Link, 1987; Link, Mirotznik, & Cullen, 1991). Subsequent sections of the scale intended to measure stereotype agreement and stereotype self-concurrence. The introductory clauses or wording of items are different for each section. The introduction for stereotype agreement was “I believe that most persons who stutter are...” and the introductory clause for self-concurrence was “Because I stutter, I feel...” or “Because I stutter, I stop myself from...” Responses were given on a five-point agreement scale (1 = strongly disagree, 2 = somewhat agree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree). The responses were averaged to generate scores for subscales as well as the total scale. See Appendix B for all items included in the original version of the 4S. Appendix C shows the final revised version of the 4S following removal of ineffective items. Please note that the values appearing beside the response categories shown in the appendices are for the benefit of the reader and were not visible to the participants.

The SSMIS, which was originally used for individuals with mental illness, needed to be adapted specifically for PWS in this study. Many strategies were used in order to maximize content validity of the scale for PWS. These included an in-depth literature review, interview questions and discussions with PWS, an expert review given by professionals with a record of publication in psychosocial aspects of stuttering and a personal history of stuttering, as well as pilot testing with people who stutter. These methods are described in detail in the following sections.

Literature review

Potential items for the survey were first generated based on a review of the literature of self-stigma and psychosocial aspects of stuttering. Specifically, there are many qualitative studies on PWS which provide rich descriptions of the stigma associated with stuttering from the perspectives of PWS (Corcoran & Stewart, 1998; Crichton-Smith, 2002; Klompass & Ross, 2004). In addition, ideas for items were generated from previous scales measuring stigma associated with other conditions such as epilepsy, physical disfigurement, mental illness, HIV infection, and chronic neurological illness (Berger, Frerrans, & Lashley, 2001; Corrigan et al., 2006; Jacoby, 1994; Lawrence, Fauerbach, Heinberg, Doctor, & Thombs, 2006; Rao et al., 2009) and scales looking at stigma specifically related to PWS (St. Louis, Reichel, Yaruss, & Boyd-Lubker, 2009; Woods & Williams, 1976). Studies examining public stigma of stuttering over several decades were also used to identify common perceptions of PWS (Crowe & Cooper, 1977; Hughes et al., 2010; Kalinowski et al., 1996, Van Borsel et al., 1999).

To ensure that all relevant aspects of self-stigma were addressed, Corrigan and Watson's (2002) theoretical model of self-stigma was used as a guide for assigning potential items to "bins," or areas, corresponding to different elements of stigma (e.g., stereotypes, prejudice, discrimination) within each level of the self-stigma process (stereotype awareness, stereotype agreement, self-concurrence). A large table was created with these different classifications in which elements of stigma found during the literature review were placed or "binned." Once items were "binned" they were then "winnowed," or systematically removed due to redundancy, confusing language, or

limited applicability to the population of PWS. These “binning” and “winnowing” techniques have been used to identify and evaluate questionnaire items and are considered important components of item pool development (DeWalt, Rothrock, Yount, & Stone, 2007).

Interviews and discussions with PWS

The review of the literature provided a starting point for direct input from PWS. Focus groups, interviews, and discussions can help determine the thinking patterns and vocabulary style used in the target population. In addition, talking with PWS would likely identify gaps in content not presented in the literature (DeWalt et al., 2007). This was a crucial step in developing a survey that is anchored in the experiences of PWS. Because the stigma associated with stuttering has been studied in the past, participants in these interviews and discussions were asked to confirm, modify, or add to predetermined items measuring stigmatizing attitudes toward PWS. Twenty PWS were approached at an annual convention of the NSA and asked if they would agree to participate in the research study by answering a couple of brief questions about stuttering. PWS were asked to complete the sentence, “I think the public (or most people) believes that most persons who stutter...” In addition, participants were asked “How do you think most people in the general public feel when talking to a person who stutters?” Answers to these questions indicated beliefs about stereotypes directed at PWS from the general public as well as potential prejudice in the form of emotional reactions from the public when talking to a PWS.

The content of these discussions was recorded and analyzed through recall and handwritten notes taken by the researcher during the interview. The words or phrases given by the participants were then categorized into different components of stigma where they were binned and winnowed along with terms recorded through the literature search. The inclusion of interviews and discussions with members of target populations for scale development has been used extensively (Boyd-Ritscher, Otilingam, & Grajales, 2003; Corrigan et al., 2006; DeWalt et al., 2009; Jacoby, Baker, Smith, Dewey, & Chadwick, 1993; King et al., 2007; Rao et al., 2009; Sayles et al., 2008).

Expert review

Once all of the items for the 4S were generated and reduced following literature review and discussions with people who stutter, the potential item list was submitted to three experts in the areas of the stigma and psychosocial factors associated with stuttering. These experts were researchers with publication records in stigma and stuttering and were also people who stutter. They served as content reviewers to evaluate how well each item tapped the concept of self-stigma related to stuttering in terms of clarity and relevance. The reviewers were given a written description of the model of stigma being used in this project to ensure consistent interpretation of the construct. Reviewers were able to ask questions, judge the comprehensiveness of the item pool, and give suggestions for modifications or additional items to fill in any perceived gaps. They were specifically asked to comment on the appropriateness of wording, response categories, layout and organization, redundancy of items, and comprehensiveness of the

overall survey. Utilizing experts in the field as content reviewers in constructing new surveys has been done by many researchers (Berger et al., 2001; Jacoby et al., 1993; Lawrence et al., 2006; Vogel, Wade, Haake, 2006).

The comments from the reviewers were very helpful in refining the survey. Reviewers made suggestions regarding the order of survey items, the comprehensiveness of the generated items, and appropriate wording of concepts. Specific changes to the survey were made following feedback from the reviewers. For example, one reviewer recommended more items in the stereotype agreement and self-concurrence sections. As a result, six new items that tapped into areas not covered previously were added to the scale in those sections. In addition, in response to another reviewer's recommendations, wording changes were made to limit potential misinterpretation of terms. For example, "sorry for the person who stutters" was changed to "pity for the person who stutters" and "should avoid public speaking" was changed to "should avoid speaking in front of groups of people" in the stereotype awareness section and "less socially skilled than people who don't stutter" was changed to "less sociable than people who don't stutter" in the self-concurrence section.

Pilot study

In the next stage of the survey development process, a pilot study was conducted with 22 PWS. Pilot testing and obtaining feedback on the survey is commonly done in the refinement stage of survey development (Rao et al., 2009; Sayles et al., 2008).

Participants for the pilot study were self-selected members of the NSA. They were e-

mailed a link to take the pilot survey online. Pilot study participants provided written feedback to the author via e-mail regarding their thoughts about the survey. Participants in this pilot study were queried on the language, comprehensibility, format (including response option range), and relevance of items. Revisions were made to the survey based on participant feedback. The feedback from participants about the survey was very positive. Comments from participants regarding the survey included “interesting,” “clear and straightforward,” “not too long and not too short,” and “I liked the diversity in the way in which the questions were asked.” The average length of time it took participants to complete the full set of surveys (the 4S and 4 other questionnaires along with demographic and stuttering-related information) was around 12 minutes.

Some participants expressed that some questions were difficult to answer but they tried as hard as they could. For example, one participant reported having difficulty answering the question “How did your stuttering begin?” and suggested it be changed to “How do you *think* your stuttering began?” in the demographic/clinical section of the survey to represent a more subjective answer. Other final wording changes were made to the survey to reduce vagueness or possible multiple answer scenarios, particularly in the demographics section. In addition, four items were added to this section to measure perceived causality of stuttering, perceived importance of fluency, and quality of services received for stuttering including treatment and support groups.

Twenty-two PWS (14 males, 8 females) participated in this pilot study before the complete survey was distributed to a wider group of people. The pilot study was important in terms of determining initial reliability of items on the scale, as well as determining whether changes should be made to the individual items or the scale as a

whole. Again, this step was performed to increase validity and reliability of the scale in addition to making potential changes before the survey was distributed to the larger sample. Ages of the participants ranged from 21 to 32 ($M = 26.5$, $SD = 3$). Participants included 2 (9%) African Americans, 2 (9%) Hispanic Americans, and 18 (82%) white, non-Hispanics. Twenty-one (95%) of the participants had received, or were currently receiving speech therapy and one participant had never received therapy. Nineteen (86%) of the participants had been, or were currently, a member of a support group for stuttering and three (14%) had never been.

Factor analysis to determine dimensionality of the scale could not be conducted on the total stigma score in the pilot data due to the limited number of observations in comparison to the number of variables on the scale. Cronbach's coefficient alpha was determined to assess the internal consistency of the variables in the 4S. This is a measure of reliability, frequently used in the social sciences, that analyzes the interrelatedness of the variables that form certain constructs. Typically, it is desired for coefficient alpha to be at least 0.70 or higher to indicate acceptable internal consistency (Nunally, 1978). The coefficient alpha for the stereotype agreement section was 0.74 indicating acceptable internal consistency. The coefficient alpha did not increase substantially with the deletion of any one variable in this portion of the scale, therefore all theoretically derived variables were kept for stereotype agreement. A coefficient alpha of 0.83 was obtained for the 'self-concurrence' section and 0.79 was obtained for stereotype awareness indicating acceptable internal consistency. Similar to computation with the stereotype agreement section, a series of computations were performed deleting specific variables. Again, the coefficient alpha the coefficient alpha level did not increase after omitting any

of the items. The alpha level for each section did not rise dramatically with the deletion of any one variable and therefore all theoretically derived variables were kept for stereotype awareness and self-concurrence. The coefficient alpha for the overall 4S scale was 0.85 which indicated good internal consistency.

The results of the pilot study suggested that the development of the 4S could be continued with a larger number of participants in order to assess dimensions of the scale using factor analysis and identify which items might be deleted from the scale. It was also necessary to obtain greater participant diversity. This process would increase reliability of the scale.

Rosenberg Self-Esteem Scale (RSES)

The RSES (Rosenberg, 1989) was used to measure self-esteem. This is a 10-item scale with items designed to measure self-worth. Five items on the scale are positively worded (e.g., “I feel I have a number of good qualities”) and five items are negatively worded and reverse scored (e.g., “I feel I do not have much to be proud of”). The responses are measured on a 4-point scale (Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1) and the score represents the sum of the responses, which can range from 10 to 40 with higher scores representing higher self-esteem. The RSES has been shown to be a reliable ($\alpha = .88$), unidimensional, and valid scale that is frequently used in self-esteem research (Corrigan et al., 2006; Rüsçh et al., 2006a; Watson et al., 2007). The RSES is provided in Appendix D.

Satisfaction With Life Scale (SWLS)

The SWLS (Diener, Emmons, Larsen, & Griffin, 1985) is a measure of global life satisfaction. The scale is a cognitively driven rather than affectively driven appraisal of life satisfaction containing 5 items (e.g., “In most ways my life is close to ideal”). Responses are measured on a 7-point scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = agree, 7 = strongly agree). Scores are calculated by summing the responses for each item and range from 5 to 35 with higher scores representing higher life satisfaction. The SWLS has been shown to demonstrate unidimensionality, good reliability ($\alpha = .87$), construct validity (Diener et al., 1985; Pavot & Diener, 1993; Pavot, Diener, Colvin, & Sandvik, 1991) and has been used frequently in research measuring life satisfaction (Pavot & Diener, 2008). The SLWS is provided in Appendix E.

The General Self-Efficacy Scale (GSES)

The GSES (Schwarzer & Jerusalem, 1995) is designed to assess general feelings of self-efficacy, or belief in the ability to cope with daily hassles and adapt to stressful life experiences. The scale contains 10 items (e.g., “I am confident that I could deal efficiently with unexpected events”) and is measured on a 4 point response scale (1 = not at all true, 2 = hardly true, 3 = moderately true, 4 = exactly true). The final composite score is obtained by adding the response to each item, with a range from 10 to 40 with higher scores indicating higher levels of general self-efficacy. The GSES demonstrates adequate psychometric properties including unidimensionality, internal consistency (α

ranged from .76 to .90 in a series of studies), construct validity, and has been used extensively in research measuring self-efficacy (Luszczynska, Gutierrez-Dona, & Schwarzer, 2004; Scholz, Gutierrez-Dona, Sud, & Schwarzer, 2002). The GSES is provided in Appendix F.

Perceived Stuttering Severity

Perceived stuttering severity was measured using a self-report method described by O’Brian, Packman, and Onslow (2004a), with a scale used in previous research studies (Iverach et al., 2009b; O’Brian, Jones, Packman, Menzies, & Onslow, 2011) in which participants rate their typical stuttering severity for each of eight different speaking situations. Measuring perceived stuttering severity across several different situations is important because stuttering may vary dramatically depending on communication contexts. Responses are measured on a 9 point scale (1 = no stuttering and 9 = extremely severed stuttering) for each of the eight items. No other points on the scale are specifically identified. “Typical” stuttering severity was defined using the description of O’Brian et al. (2011) as “the severity of your speech for the majority of the day.” The eight speaking situations measured included: (1) talking with a family member, (2) talking with a familiar person, not a family member, (3) talking in a group of people, (4) talking with a stranger, (5) talking with an authority figure such as a work manager or teacher, (6) talking on the telephone, (7) ordering food or drink, and (8) giving their name and address. Participant ratings were averaged across all eight situations to provide a total

score which represents the perceived typical severity rating. This stuttering severity self-report instrument is shown in Appendix G.

Self-report ratings for stuttering severity have some limitations including lack of objectivity in analysis of the frequency of physical speech disruptions (e.g., percentage of syllables or words stuttered), duration of speech disruptions, and concomitant or secondary stuttering behaviors (e.g., facial tension, eye blinking, grimacing, etc.), that can be obtained from something like the Stuttering Severity Instrument (SSI-4) (Riley, 2009). This self-report measure can only assume that participants would base their ratings on frequency, duration, and concomitant behaviors. However, self-report of stuttering severity may be useful in its own right because it may be a more holistic measure compared with data obtained from one speech sample in one particular situation (O'Brian et al., 2004a).

In addition, self-report is a relatively easy, practical, and reliable way to obtain data from a large number of PWS regarding perceived severity over time and different situations (O'Brian et al., 2004a; O'Brian, Packman, Onslow, & O'Brian, 2004). Seventy-eight percent agreement within 1 point was found in stuttering severity ratings between PWS and clinicians based on recordings of speech samples of the PWS across a variety of situations both inside and outside the clinic (O'Brian et al., 2004a). A Spearman rank order correlation of .91 has been reported between the mean percentage of syllables stuttered (%SS) and mean ratings of 9-point stuttering severity scale (SEV) judged by 12 SLPs with expertise in stuttering (O'Brian et al., 2004b). In the same study, the stuttering severity scale demonstrated 92% intrajudge agreement within 1 point and 83.7% interjudge agreement within 1 point on a variety of speech samples from 90 adults

who stutter. The authors concluded that the results their study “...supports the use of either a % SS measure or a 9-point SEV scale in research and clinical practice. Both tools are reliable and can largely be used interchangeably for the measurement of stuttering” (O’Brian et al., 2004b, p. 1086).

Demographic and stuttering-related information

Demographic information collected included items regarding gender, age, and ethnicity. Stuttering-related information focused on perceptions about stuttering including time of onset, time since acquisition, consistency or stability/course, perceived cause, and perceived responsibility, perceived visibility, and involvement in therapy and support groups for stuttering. These questions were included because they may be relevant to people’s adaptation to a disability such as stuttering (Smart, 2001). Information was also obtained regarding treatment and support group history including availability, length, and effectiveness of services, as well as reasons for participating in those services. The demographic and stuttering-related information section is included in Appendix H.

Data Analysis

Statistical analyses were conducted to test the hypotheses of each research question. The following section provides each research question followed by their corresponding statistical analysis. Data analysis was conducted using Minitab Version 16, SPSS Version 19, and Mplus Version 6.11.

Research Question 1

What are the psychometric properties of the 4S regarding internal consistency, temporal stability, factor structure, content validity and initial construct validity?

Internal consistency was evaluated using Cronbach's coefficient alpha for the overall 4S as well as its subscales. Temporal stability was assessed with Pearson product moment correlations and point-to-point agreement percentages between participant scores on the original test and scores obtained during a re-test which occurred approximately 2 weeks later. To determine underlying factor structure of the 4S, exploratory factor analysis using principal components method of extraction was conducted. Decisions regarding how many factors to retain were guided by the widely used criterion of retaining factors with eigenvalues greater than 1 (Kaiser, 1960). In essence, this means that factors were only retained if they accounted for at least as much variability as one original variable. In addition, scree tests were conducted which plotted eigenvalues on simple line plots (Cattell, 1966) to aid in the decision of the number of factors to retain. Orthogonal analysis and varimax rotation were used because the goal was to detect a clear pattern of loadings by maximizing the variance of the factors. Confirmatory factor analysis (CFA) was then conducted on the final set of items to analyze model fit. The fit statistic for the final three factor model was the root mean squared error of approximation (RMSEA) which is the discrepancy per degree of freedom of the model and data covariance matrices (Hoyle, 2000). Values between 0.080 and 0.051 represent a reasonable approximation and values equal to or less than 0.050 represent a close fit (Browne & Cudeck, 1993). Content validity of the 4S was increased through careful

construction of the scale including an in-depth literature review, interviews with PWS, expert content review, and pilot testing. Initial construct validity was measured by performing correlations between self-stigma and self-esteem, self-efficacy, and satisfaction with life, and partial correlations between these variables controlling for perceived stuttering severity.

Research Question 2

Is self-concurrence a significant predictor of self-esteem, self-efficacy, and life satisfaction for adults who stutter above and beyond demographic and stuttering-related variables?

Separate hierarchical multiple regression analyses were conducted to answer this question. Self-esteem, self-efficacy, and life satisfaction were entered as the dependent variables and stigma self-concurrence was entered as the predictor variable, along with relevant demographic and stuttering-related variables being entered into the model as covariates. Change in R^2 values were obtained to determine how much of the variance in self-esteem, self-efficacy, and life satisfaction scores was accounted for by stigma self-concurrence above and beyond other demographic and stuttering-related variables in the model. Each dependent variable and its relations to self-stigma were analyzed separately rather than using a multivariate approach (i.e., MANOVA or multivariate regression) because the primary goals of the study were to compare the effects of different independent variables on the dependent variables rather than how the effects of the independent variables vary across the dependent variables.

Secondary research questions

What demographic or stuttering-related factors may be related to aspects of psychological well-being including self-esteem, self-efficacy, and life satisfaction among adults who stutter?

Bivariate correlations and ANOVA tests were conducted to examine potential interrelationships between demographic (e.g., age, gender) and stuttering-related parameters (e.g., stuttering severity, support group involvement) and criterion variables of self-esteem, self-efficacy, and life satisfaction.

How do people who stutter respond to open ended questions about the stigma related to being a PWS?

Written documents taken by the author describing PWS' answers to open-ended questions regarding stereotyped beliefs and negative emotional reactions held by the public were analyzed. All answers given by participants were transcribed. The answers were then binned into specific categories and frequency counts were taken to determine the most prevalent answers given.

Chapter 3

Results

This section describes the qualitative analysis that contributed to scale development, psychometric analysis of the 4S, results regarding the relationships between self-stigma associated with stuttering and elements of psychological well-being including self-esteem, self-efficacy, and life satisfaction, and results of hierarchical multiple regression analyses.

Qualitative Analysis

Asking open ended questions of PWS was considered to be an important part of scale development which would allow for comparing the language used by PWS to what is described in the literature concerning the stigma associated with stuttering. In that way, the language used in the scale could be tailored specifically to the experiences, and language used to convey those experiences, of PWS. These interviews with 20 PWS contributed to the content validity of the new scale.

The vast majority of PWS interviewed in this study reported answers regarding how they think they are perceived by people in the public, and how people in the public feel when talking to them, using terms that were judged to be negative by the author and another speech-language pathologist who is a Board Recognized Specialist in Fluency Disorders. In general, the most consistent findings were that PWS believed that others in

the general public perceived PWS to be nervous and less intelligent and that people felt some degree of discomfort talking to PWS. A substantial number of the participants reported that they believed the general public views PWS as less intelligent than others (11 instances, 55%) and nervous (10 instances, 50%). Twenty-five percent of the participants believed that the public views PWS as confused, and 15% believed that PWS are viewed as mentally unstable or psychologically disturbed. In addition, 55% of participants reported that they thought the general public felt some degree of discomfort when talking to PWS, 35% reported that people were confused when talking to PWS, 30% believed that people were impatient when talking to PWS, 15% believed that people think they should help out the PWS, 10% believed that people felt bad/sorry for PWS, and 5% thought that the public was inquisitive, not bothered, and even relieved.

These findings were obtained from an analysis of open ended responses from 20 PWS. In response to a request to fill in the blank at the end of the following sentence: “I think that most people in the public believe that PWS...” 34 different answers were obtained from the 20 participants. All of these 34 answers were perceived to be negative by the two judges. The most common response to this question centered on participants believing that people in the public view PWS as less intelligent than other people due to stuttering. Eleven separate responses could be categorized as falling under the “less intelligent” category. The specific words used by the participants and their frequency of use were: “less intelligent” (4 instances), and “dumb,” “not smart,” “stupid,” “slow,” “ignorant,” “mental retardation,” and “less capable” were each mentioned in one instance each.

The second most common response appeared to be that the participants thought people in the general public believe PWS are nervous. Ten responses (50%) were interpreted as being in the category of “nervous.” Specific terms used and their frequencies in this category were: “nervous” (8 instances), “anxious” (1 instance), and “uncomfortable” (1 instance). Another category identified in the participants’ responses was “confusion.” Five responses (25%) were categorized as being in the “confusion” category. Terms used in this category were: “confused” (2 instances), “indecisive” (1 instance), “don’t know what they want to say” (1 instance), and “haphazard” (1 instance). Some participants (15%) believed that people in the public think that PWS were mentally unstable, responding with “psychological problem” (2 instances), and “unstable mentally” (1 instance). Other responses included: “have a disability” (2 instances) and “can’t be effective communicators” (1 instance).

In response to the question “how do you think most people in the general public feel when talking to a PWS?” a majority of the participant responses were also negative. Specifically, there were 32 different answers given to this question among the 20 participants, and 22 (69%) of the responses were judged to be negative by the two judges. The most common response was related to a feeling of discomfort when talking to a PWS. Eleven participants (55%) used terms related to feelings of discomfort. The specific terms used and their frequencies were: “uncomfortable” (6 instances), “anxious” (3 instances), “nervous” (1 instance), and “embarrassed” (1 instance). The second most common response was related to confusion. Seven participants (35%) used terms related to confusion including: “confused” (3 instances), “don’t know how to react” (2 instances), “uncertain” (1 instance), and “surprised” (1 instance). The third most common

response was related to impatience. Six participants (30%) used terms associated with impatience including: “impatient” (3 instances), “frustrated” (2 instances), and “annoyed” (1 instance). Other responses to this question included: “feel like they should help us” (3 instances), “feel bad/sorry for us” (2 instances), “inquisitive” (1 instance), “not bothered” (1 instance), and “relieved after they find out what is going on” (1 instance).

Exploratory Data Analysis

Participant characteristics

Four hundred and forty-six people opened the link to the online survey that was conducted after the pilot study. However, there were many responses that could not be included in the final analysis including 64 responses from people who did not stutter, 11 from people under the age of 18, and 80 people who opened the link but did not complete any section the survey beyond the first few screening questions. Therefore the total number of responses from PWS and age 18 or older included for data analysis was 291 (178 males, 97 females, and 16 participants who did not specify their gender). A response rate could not be calculated because Web surveys being forwarded do not allow for knowledge of how many people had the opportunity to complete the survey.

Demographic and stuttering-related information of participants is presented in Table 1.

Table 1. Sample Characteristics.

	Mean (S.D.) or % (n)
Demographic and Stuttering-Related Characteristics	(N = 291)*
<i>Age</i>	39.70 (15.89)
<i>Age that stuttering began</i>	5.92 (4.86)
<i>Years since onset of stuttering</i>	34.94 (17.08)
<i>Years in speech therapy</i>	7.01 (7.64)
<i>Years attending support groups for stuttering</i>	5.86 (6.63)
<i>Gender</i>	
Male	65% (178)
Female	35% (97)
<i>Ethnicity</i>	
African American	12% (33)
Asian American	2% (6)
Caucasian, non-Hispanic	75% (207)
Hispanic American	4% (11)
Other	7% (20)
<i>Stuttering onset history</i>	
Suddenly and without warning	47% (125)
Slowly over time	53% (141)
<i>Perceived cause of stuttering</i>	
Differences in how the brain works	66% (182)
Psychological or emotional problems	14% (39)
Unsure of what causes stuttering	20% (55)
<i>Stability of stuttering over the lifetime</i>	

	Mean (S.D.) or % (n)
<i>Demographic and Stuttering-Related Characteristics</i>	
	(N = 291)*
<hr/>	
It has stayed relatively stable over time	17% (47)
It has varied and changed over time	83% (230)
<i>Perceived chronicity of stuttering</i>	
It will go away by itself	0.72% (2)
It will go away if I practice being fluent	13% (36)
I will probably stutter for the rest of my life to some degree	86% (240)
<i>Visibility of stuttering</i>	
Not at all visible	5% (14)
Slightly visible	34% (95)
Moderately visible	38% (105)
Very visible	23% (63)
<i>Importance of fluency</i>	
Not important at all	5% (14)
Slightly important	18% (51)
Moderately important	38% (107)
Extremely important	38% (107)
<i>History of attending speech therapy</i>	
Yes	88% (246)
No	12% (32)
<i>Helpfulness of speech therapy</i>	
Extremely helpful	31% (76)
Moderately helpful	36% (88)
A little helpful	24% (60)

	Mean (S.D.) or % (n)
Demographic and Stuttering-Related Characteristics	(N = 291)*
<hr/>	
Not at all helpful	9% (22)
<i>History of attending support groups for stuttering</i>	
Yes	63% (175)
No	37% (104)
<i>Helpfulness of support groups</i>	
Extremely helpful	45% (79)
Moderately helpful	29% (50)
A little helpful	23% (40)
Not at all helpful	3% (5)
<i>Biggest reasons for participating in support groups</i>	
To meet other people who stutter	74% (129)
To practice speech therapy techniques	37% (64)
To share feelings, thoughts, and experiences	81% (142)
To talk in a safe place	50% (87)
To learn and understand more about stuttering	59% (104)
To help others feel better about themselves	46% (81)
Other	6% (11)

Note. * For some variables, the percentage is based on a smaller *N* due to missing data or because only a smaller subset of participants could answer the question based on previous answers. Also note that all information, including stuttering-related characteristics, was obtained by self-report.

Normative data and scale scores

Participant scores for all scales, including comparisons to normative data, are presented in Table 2. To score the 4S and its subscales the participants' responses were averaged, yielding a number between 1 and 5. For statistical purposes, participants were considered to have high levels of self-stigma if their average score was above 3 and low levels of self-stigma if their average scores were below 3. This scoring was based on the fact that a score of exactly 3 represented the theoretical midpoint of neither agreeing nor disagreeing with stigma, scores higher than 3 represented agreeing with stigma, and scores less than 3 represented disagreeing with stigma. This average score should be interpreted in terms of absolute self-stigma rather than relative self-stigma (i.e., relatively low values may still reside above the midpoint of the scale). As can be seen from the means presented in Table 2, a large proportion of the participants (86%) were highly aware of the public stigma associated with stuttering but a relatively small proportion (19%) agreed highly with these stigmatizing views as they apply to other PWS. However, a higher percentage of PWS (39%) applied these stigmatizing attitudes to themselves.

A majority of participants' scores on self-esteem, self-efficacy, and life satisfaction were above the theoretical midpoints of the scales indicating high absolute levels of self-esteem, self-efficacy, and satisfaction with life among adults who stutter. However, normative data shows that means for these measures are usually above the theoretical midpoint of the scales indicating that generally positive self-esteem, self-efficacy, and satisfaction with life are the norm, especially in Western countries (Pavot & Diener, 1995; Schmitt & Allik, 2005; Scholz et al., 2002; Sinclair et al., 2010).

Although the RSES and the GSES do not have explicit cutoffs for high and low levels of self-esteem or self-efficacy, the results can be compared with other normative samples of adults in the United States. The mean RSES score of PWS ($M = 32.16$, $SD = 6.05$) was basically identical to the means reported for adults in the United States. Schmitt and Allik (2005) reported a mean RSES score of 32.21 ($SD = 5.01$), and Sinclair et al. (2010) reported an overall mean score of 32.62 ($SD = 5.80$). Regarding self-efficacy, the mean GSES for PWS ($M = 31.87$, $SD = 4.85$) was above the mean reported for adults in the United States. Scholz et al. (2002) reported a mean GSES score of 29.60 ($SD = 4.0$). Regarding satisfaction with life, the mean SWLS score for PWS ($M = 22.39$, $SD = 7.45$) was slightly lower but well within 1 SD of normative data on adults in the United States. Pavot and Diener (1993) present a review of a series of studies which report an overall mean of 24.02 ($SD = 6.37$).

Looking at perceived stuttering severity, the overall average stuttering severity score for this group of PWS was 4.46 ($SD = 1.72$) indicating that most of the participants rated their overall stuttering severity across different situations a little lower than the theoretical midpoint between no stuttering and extremely severe stuttering. However, as Table 2 demonstrates, average scores varied across speaking situations as was expected due to the situational variability of stuttering. For instance, the situations in which participants rated themselves most disfluent was in talking with an authority figure such as a work manager or teacher, and talking on the telephone. The situation in which participants reported their speech as least disfluent was in talking with a family member. Also, the distribution of average severity scores approximated normal distribution but was slightly positively skewed with 177 out of 278 participants (63.67%) reporting scores

that were at the midpoint of the scale or below. This demonstrates that a majority of participants rated their stuttering severity as below the theoretical midpoint between no stuttering and extremely severe stuttering. Positively skewed distributions of perceived stuttering severity have been found in previous research as well (see O'Brian et al., 2004b).

Table 2. Participant Scores on All Scales.

Measure	Mean (S.D.) or % (n)
	(N = 291)*
<i>Overall self-stigma</i>	3.03 (0.50)
High overall self-stigma	53% (148)
Low overall self-stigma	47% (132)
<i>Stigma awareness</i>	3.61 (0.54)
High stigma awareness	86% (249)
Low stigma awareness	14% (40)
<i>Stereotype agreement</i>	2.56 (0.61)
High stereotype agreement	19% (54)
Low stereotype agreement	81% (230)
<i>Stigma self-concurrence</i>	2.70 (0.92)
High stigma self-concurrence	39% (110)
Low stigma self-concurrence	61% (174)
<i>Self-esteem</i>	32.16 (6.05)
Within 1 SD of normative data	51% (143)
Above 1 SD of normative data	25% (70)

Measure	Mean (S.D.) or % (<i>n</i>)
	(<i>N</i> = 291)*
<hr/>	
Below 1 SD of normative data	24% (68)
<i>Satisfaction with Life</i>	22.39 (7.45)
Within 1 SD of normative data	61% (171)
Above 1 SD of normative data	12% (33)
Below 1 SD of normative data	27% (77)
<i>Self-efficacy</i>	31.87 (4.85)
Within 1 SD of normative data	66% (184)
Above 1 SD of normative data	19% (53)
Below 1 SD of normative data	14% (40)
<i>Perceived stuttering-severity</i>	4.46 (1.72)
Talking with a family member	3.39 (2.02)
Talking with a familiar person, not a family member	3.49 (1.71)
Talking in a group of people	4.87 (2.17)
Talking with a stranger	4.62 (2.19)
Talking with an authority figure	5.09 (2.26)
Talking on the telephone	5.08 (2.44)
Ordering food or drink	4.33 (2.40)
Giving your name or address	4.85 (2.62)

Note. * For some variables, the percent is based on a smaller *N* due to missing data. Sources for normative data on self-esteem: Shmitt & Allik (2005) and Sinclair et al. (2010). Source for normative data on satisfaction with life: Pavot & Diener (1993). Source for normative data on self-efficacy: Scholz et al. (2002).

Associations between dependent variables and demographic/stuttering related variables

A series of bivariate correlations and one-way ANOVAs were conducted to explore whether certain demographic or stuttering-related variables were significantly associated with self-esteem, self-efficacy, and life satisfaction. These analyses helped to determine what other factors, beyond the independent variables of interest, were relevant to consider when describing self-esteem, self-efficacy, and life satisfaction of PWS. Knowing these variables allowed for the use of covariates in future analyses to determine the relative strength of self-stigma in predicting the dependent variables. Pearson correlations were obtained between the dependent variables and a series of other theoretically relevant variables including current age, age at which stuttering began, number of years stuttering, length of time in speech therapy, length of time in support groups, helpfulness of therapy, helpfulness of support groups, perceived visibility of stuttering, and perceived importance of fluency. Point-biserial correlations were computed to examine the relations between the three criterion variables and gender, type of stuttering onset, course of stuttering over the lifetime, enrollment in speech therapy, and participation in support groups for people who stutter (response levels were dichotomized as either 0 or 1 for each response category). One-way ANOVAs were conducted between the dependent variables and ethnicity, perceived cause of stuttering, and anticipated future course of stuttering. It is important to note that in all of the analyses involving self-esteem, self-efficacy, and life satisfaction, average scores were used for calculations rather than sums. This was done to minimize the impact of any missing responses.

Table 3 shows the demographic and stuttering-related variables that were significantly correlated with self-esteem, self-efficacy, and life satisfaction. Results indicated that age, age that stuttering began, number of years stuttering, helpfulness of treatment, perceived stuttering severity, perceived stuttering visibility, and importance of fluency, and type of onset of stuttering (dichotomized into 0 = slowly over time and 1 = suddenly and without warning), were all significantly correlated with at least one of the variables of interest. Thus, each of these variables was subsequently utilized as a covariate in regression analyses.

Table 3. Zero-Order Correlations Between Study Variables of Interest and Relevant Demographic and Stuttering-Related Variables.

Variables	Degrees of freedom	Pearson correlation coefficient	95% CI
<i>Self-esteem</i>			
Age	240	.20***	.08, .32
Number of years stuttering	267	.24***	.12, .35
Helpfulness of treatment	244	.21***	.09, .33
Perceived stuttering severity	276	-.40***	-.49, -.30
Perceived stuttering visibility	275	-.29***	-.39, -.18
Importance of fluency	277	-.18**	-.29, -.06
Type of stuttering onset	264	-.13*	-.25, -.01
<i>Self-Efficacy</i>			
Helpfulness of treatment	244	.17*	.05, .29
Perceived stuttering severity	276	-.20***	-.31, -.09
<i>Satisfaction with Life</i>			
Number of years stuttering	267	.17**	.05, .28
Age stuttering began	252	-.15*	-.27, -.03
Perceived stuttering severity	276	-.31***	-.41, -.20
Perceived stuttering visibility	275	-.26***	-.37, -.15

Note. *p < .05, **p < .01, ***p ≤ .001.

Research Question 1

What are the psychometric properties of the 4S regarding internal consistency, temporal stability, factor structure, content validity and initial construct validity?

Exploratory data analysis was conducted before more complex analyses. In the exploratory data analysis, descriptive statistics including means and variances for each question in the 4S were determined along with histograms showing the distribution of the responses for each item. This was done in order to identify and aid in the decision to potentially eliminate items having highly skewed or uneven distributions and retain items showing a broad range of distributions that were able to discriminate at different points along the response continuum. Six items in the 4S were identified as being highly skewed with 85% or higher agreement or disagreement on a particular item. All of these items were later removed from the scale after factor analysis which revealed that they did not load highly on any factor, or they were deemed to be inconsistent with the construct of interest.

Factor analysis

To identify latent factors and examine the dimensionality of the scale, several different rounds of exploratory factor analysis using principal components extraction method and varimax rotation were conducted for the theoretical subcategories of the 4S: stereotype agreement, stereotype awareness, and self-concurrence. Although the analysis was guided by prior theory, confirmatory factor analysis was not utilized in the first step

due to a different population being measured as well as a different set of items being used compared with previous research on this topic. In other words, items were put into the 4S that intentionally went beyond the more narrow categories discussed in previous research and theory in order to determine boundaries of the constructs (Clark & Watson, 1995), and principal components extraction is an optimal approach for reducing data, especially from a scale with many items (Floyd & Widaman, 1995).

A range of different factors was extracted in each analysis to examine the interpretability of each extracted factor. For example, if many split loadings were obtained in an analysis, more factors were subsequently extracted. If any nonsensical or doublet factors were identified (i.e., pairs of items with weak theoretical connection to the constructs of interest), it was an indication that too many factors had been extracted or that certain items needed to be eliminated. Completing these analyses allowed for more specificity of the components of stigma and a more detailed analysis of which items were not relevant to the theoretical constructs of interest.

Step 1

A factor analysis was conducted on the “stereotype awareness” subset of items using the Kaiser (1960) method (i.e., retaining factors with eigenvalues greater than 1) in conjunction with scree plot analysis (Cattell, 1966) as criteria for retaining factors. Significant loadings were considered to be .40 or above at this stage of the analysis (Clark & Watson, 1995). This initial analysis yielded 12 factors with eigenvalues over 1. In order to simplify the process and make the factors more interpretable, the items in the

“stereotype awareness” subset were further broken down into theoretical categories of awareness of stereotypes from the public, awareness of negative emotional reactions from the public, and awareness of discrimination/prejudiced reactions from the public, all of which are theoretical subcomponents of the various levels of stigma outlined by Corrigan and Watson (2002). A separate factor analysis on the items in each of these categories was conducted, resulting in 3 different factor analyses.

In this stage of the analysis, items were eliminated if they appeared redundant with other items, if they loaded highly (.40 or above) on multiple factors, or on factors that seemed to have questionable relevance to the theoretical underlying components of stigma described in this paper. In addition, if only two items loaded strongly on a later factor, these items were judged as being conceptually weaker than the primary factor and less conceptually sound, and as a result eliminated from the scale. There were originally 39 items in this section, however 21 items were deleted after this stage of the analysis. In the awareness of stereotypes from the public analysis, 5 items were eliminated. Items 6, 12, 13, and 14 were eliminated due to loading on different factors that were judged as having questionable relevance to the concept of stigma as defined in this paper. Item 9 was eliminated because it loaded highly on multiple factors.

In the analysis of items related to “awareness of emotional reactions from the public,” 7 items were eliminated. Items 18 and 23 were eliminated because they loaded highly on multiple factors, items 19, 24, 25 and 26 were eliminated due to having questionable relevance with the theoretical constructs of interest. In addition, item 27 was eliminated due to redundancy with other items in the section.

In analysis of items related to “awareness of discrimination/prejudiced reactions,” items 31 and 32 were eliminated because they did not load highly on any factor, and item 33 was eliminated because it loaded highly on multiple factors. Items 34 and 39 were eliminated because they were judged to be redundant with other items in the section. Items 37 and 38 were eliminated because they appeared to comprise a factor related to romantic relationships comprised of only two items. Similarly, items 35, 36, were eliminated because they loaded on a third factor that appeared to be related to friendships comprised of only two items. Having only two strong loadings is considered a doublet factor which is considered conceptually weak (Chesney, Neilands, Chambers, Taylor, & Folkman, 2006).

After deletion of all of these items, a factor analysis of the remaining items was conducted and four factors emerged with eigenvalues of 5.56, 1.89, 1.60, and 1.32 accounting for 58% of the total variance. After varimax rotation, six items loaded onto the first factor labeled “awareness of positive stereotypes,” 6 items loaded onto second factor labeled “awareness of emotional reactions from the public,” 3 items loaded onto the third factor labeled “awareness of prejudiced reactions from the public,” and 3 items loaded onto the fourth factor labeled “awareness of negative stereotypes.” Factors and items are presented with their loadings after rotation in Table 4.

Table 4. Factor Analysis of Stigma Awareness Items.

Variable	Factor 1	Factor 2	Factor 3	Factor 4
4. Most people in the general public believe that PWS are self-confident	.609			
5. Most people in the general public believe that PWS are friendly	.687			
7. Most people in the general public believe that PWS are intelligent	.651			
8. Most people in the general public believe that PWS are capable	.689			
10. Most people in the general public believe that PWS are outgoing	.623			
11. Most people in the general public believe that PWS are mentally healthy	.664			
15. When talking to a PWS, most people in the general public feel patient		.555		
16. When talking to a PWS, most people in the general public feel annoyed		.656		
17. When talking to a PWS, most people in the general public feel frustrated		.734		
20. When talking to a PWS, most people in the general public feel comfortable		.414		
21. When talking to a PWS, most people in the general public feel anxious		.707		
22. When talking to a PWS, most people in the general public feel embarrassed		.762		
28. Most people in the general public believe that PWS should avoid speaking in front of groups of people			.799	

Variable	Factor 1	Factor 2	Factor 3	Factor 4
29. Most people in the general public believe that PWS should have other people speak for them			.828	
30. Most people in the general public believe that PWS should avoid jobs that require lots of talking			.671	
1. Most people in the general public believe that PWS are nervous				.776
2. Most people in the general public believe that PWS are shy				.792
3. Most people in the general public believe that PWS are insecure				.664

Step 2

A factor analysis on items related to “stereotype agreement” was conducted. There were originally 11 items in this section, however, 3 items were eliminated after this step in the analysis. Items 42, 49, and 50 were eliminated due to questionable relevance to the constructs of interest. After elimination of these items, another factor analysis was conducted on the remaining items. A two factor solution was obtained with eigenvalues 2.87 and 1.59 accounting for 56% of the total variance. After varimax rotation, 3 items loaded onto the first factor labeled “agreement with capability stereotypes” and 5 items

loaded onto the second factor labeled “agreement with personality stereotypes.” Factors and items are presented with their loadings after rotation in Table 5.

Table 5. Factor Analysis of Stereotype Agreement Items.

Variable	Factor 1	Factor 2
43. I believe that most people who stutter are intelligent	.885	
44. I believe that most people who stutter are capable	.922	
45. I believe that most people who stutter are incompetent	.715	
40. I believe that most people who stutter are nervous		.601
41. I believe that most people who stutter are self-confident		.651
46. I believe that most people who stutter are insecure		.767
47. I believe that most people who stutter are outgoing		.658
48. I believe that most people who stutter are shy		.599

Step 3

A factor analysis was conducted on items related to “stereotype self-concurrence.” This section originally had 23 items, and 3 were deleted during this stage of the analysis. This initial analysis yielded 4 factors with eigenvalues over 1. In order to simplify the process and make the factors more interpretable, “self-concurrence” was further broken down into theoretical categories of “self-concurrence with negative

stereotypes” and “self-discrimination” and two separate factor analyses were run on each of these dimensions. In the “self-concurrence with negative stereotypes” section, item 51 was eliminated because of high loadings on two factors, and items 63 and 64 were eliminated due to questionable relevance. In the self-discrimination section, no items were deleted at this stage.

Another factor analysis was then run on the 20 items remaining items. A three factor solution was obtained with eigenvalues of 8.50, 2.03, and 1.61 accounting for 61% of the total variance. After varimax rotation, 11 items loaded onto the first factor labeled “self-discrimination,” 6 items loaded onto the second factor labeled “self-concurrence with personality stereotypes,” and 3 factors loaded onto the third factor labeled “self-concurrence with capability stereotypes.” Factors and items are presented with their loadings after rotation in Table 6.

Table 6. Factor Analysis of Stigma Self-Concurrence Items.

Variable	Factor 1	Factor 2	Factor 3
63. Because I stutter I stop myself from taking jobs that require lots of talking	.634		
64. Because I stutter I stop myself from accepting promotions at work	.716		
65. Because I stutter I stop myself from selecting the career that I really want	.698		
66. Because I stutter I stop myself from asking for promotions at work	.769		
67. Because I stutter I stop myself from going for higher education opportunities	.743		

Variable	Factor 1	Factor 2	Factor 3
68. Because I stutter I stop myself from talking to people I know well	.631		
69. Because I stutter I stop myself from talking to people I don't know well	.636		
70. Because I stutter I stop myself from starting conversations with other people	.607		
71. Because I stutter I stop myself from speaking in front of a group of people	.641		
72. Because I stutter I stop myself from participating in social events	.714		
73. Because I stutter I stop myself from taking part in discussions	.769		
52. Because I stutter I feel more nervous than people who don't stutter		.586	
53. Because I stutter I feel just as confident as people who don't stutter		.624	
54. Because I stutter I feel just as secure as people who don't stutter		.616	
58. Because I stutter I feel less sociable than people who don't stutter		.776	
59. Because I stutter I feel just as outgoing as people who don't stutter		.742	
62. Because I stutter I feel less assertive than people who don't stutter		.522	
55. Because I stutter I feel less capable than people who don't stutter			.722
56. Because I stutter I feel less competent than people who don't stutter			.736
57. Because I stutter I feel just as intelligent as people who don't stutter			.546

Step 4

A factor analysis was conducted on the entire 4S in its revised version after exclusion of 26 items described in the previous steps. Performing the factor analysis on the revised item pool resulted in increased parsimony and simplified the constructs being measured. Power for this analysis was sufficient because the minimum number of cases was exceeded (i.e., five times the number of items, $46 \times 5 = 230$, which is less than the 247 participants included in the overall analysis). Scree test analysis indicated that three major factors should be extracted for the most parsimonious solution. A factor analysis specifying a 3-factor extraction using varimax rotation was conducted. Eigenvalues of 9.74, 5.06, and 3.32 were obtained accounting for 39.4% of the total variance. Factors and items are presented with their loadings after rotation in Table 7. Because the total 4S measures a more general construct including many more items than any of the smaller preliminary analyses, a criteria of .35 was used in determining factor loadings (Clark & Watson, 1995). It is justified to move loading criteria slightly downward for an analysis with more items and measuring a wider construct (ACITS, The University of Texas at Austin Statistical Services, 1995). Using this criterion, only two items, 2 and 57, did not load at least .35 on any variable and these items were eliminated from the scale.

Table 7. Factor Analysis of 4S After Second Round of Item Deletions.

Variable	Factor 1	Factor 2	Factor 3
52. Because I stutter I feel more nervous than people who don't stutter	.526		
53. Because I stutter I feel just as confident as people who don't stutter	.477		
54. Because I stutter I feel just as secure as people who don't stutter	.524		
55. Because I stutter I feel less capable than people who don't stutter	.491		
56. Because I stutter I feel less competent than people who don't stutter	.520		
57. Because I stutter I feel just as intelligent as people who don't stutter	.241		
58. Because I stutter I feel less sociable than people who don't stutter	.520		
59. Because I stutter I feel just as outgoing as people who don't stutter	.394		
62. Because I stutter I feel less assertive than people who don't stutter	.412		
63. Because I stutter I stop myself from taking jobs that require lots of talking	.704		
64. Because I stutter I stop myself from accepting promotions at work	.746		
65. Because I stutter I stop myself from selecting the career that I really want	.760		
66. Because I stutter I stop myself from asking for promotions at work	.772		
67. Because I stutter I stop myself from going for higher education opportunities	.665		
68. Because I stutter I stop myself from talking to people I know well	.588		
69. Because I stutter I stop myself from talking to people I don't know well	.762		
70. Because I stutter I stop myself from starting conversations with other people	.767		

Variable	Factor 1	Factor 2	Factor 3
71. Because I stutter I stop myself from speaking in front of a group of people	.700		
72. Because I stutter I stop myself from participating in social events	.778		
73. Because I stutter I stop myself from taking part in discussions	.837		
1. Most people in the general public believe that PWS are nervous		.370	
2. Most people in the general public believe that PWS are shy		.335	
3. Most people in the general public believe that PWS are insecure		.506	
4. Most people in the general public believe that PWS are self-confident		.418	
5. Most people in the general public believe that PWS are friendly		.484	
7. Most people in the general public believe that PWS are intelligent		.619	
8. Most people in the general public believe that PWS are capable		.698	
10. Most people in the general public believe that PWS are outgoing		.425	
11. Most people in the general public believe that PWS are mentally healthy		.547	
15. When talking to a PWS, most people in the general public feel patient		.608	
16. When talking to a PWS, most people in the general public feel annoyed		.573	
17. When talking to a PWS, most people in the general public feel frustrated		.571	
20. When talking to a PWS, most people in the general public feel comfortable		.552	
21. When talking to a PWS, most people in the general public feel anxious		.545	

Variable	Factor 1	Factor 2	Factor 3
22. When talking to a PWS, most people in the general public feel embarrassed		.513	
28. Most people in the general public believe that PWS should avoid speaking in front of groups of people		.680	
29. Most people in the general public believe that PWS should have other people speak for them		.654	
30. Most people in the general public believe that PWS should avoid jobs that require lots of talking		.648	
40. I believe that most people who stutter are nervous			.550
41. I believe that most people who stutter are self-confident			.610
43. I believe that most people who stutter are intelligent			.548
44. I believe that most people who stutter are capable			.562
45. I believe that most people who stutter are incompetent			.476
46. I believe that most people who stutter are insecure			.587
47. I believe that most people who stutter are outgoing			.578
48. I believe that most people who stutter are shy			.386

Step 5

As will be explained in the following paragraphs, several more items were eliminated from the scale in the final round of analysis. Four more items were deleted from the “stigma awareness” subcategory, resulting in a total of 14 items in that section.

One more item was deleted from the “stereotype agreement” subscale resulting in a total of 7 items in that section, and 8 items were deleted from the stigma self-concurrence subscale resulting in a total of 12 items for that subscale. Item 1 was eliminated because it was heavily skewed with 85% of the respondents agreeing with the statement. Items 2 and 57 were deleted because they loaded less than .35 on any factor.

There were many high correlations between certain variables that were judged to be redundant, items 7 and 8 ($r = .74$), items 16 and 17 ($r = .67$), items 43 and 44 ($r = .76$), items 53 and 54 ($r = .89$), items 55 and 56 ($r = .74$), items 58 and 59 ($r = .59$), items 64 and 66 ($r = .69$), items 69 and 70 ($r = .84$), and items 69 and 72 ($r = .72$). As a result, items 7, 17, 43, 54, 56, 59, 66, 69, and 70 were dropped from the final scale in favor of the other stronger item from the pair. In addition, item 71 was eliminated because it was believed that this item would be poor in discriminating PWS from people who do not stutter, as speaking in front of a group of people is a commonly feared and avoided situation among many groups of people.

A final factor analysis was then conducted on the remaining 33 items. A three factor solution was obtained with eigenvalues 6.59, 4.06, and 2.72 accounting for 40.5% of the total variance. After varimax rotation, 12 items loaded onto the first factor labeled “stigma self-concurrence,” 14 items loaded on to the second factor labeled “stigma awareness,” and 7 items loaded onto the third factor labeled “stereotype agreement.” Factor loadings for the final scale can be seen in Table 8. Note that two of the factor labels are different from the labels given by Corrigan et al. (2006) which specified stereotypes only. The factors in this study related to awareness and self-concurrence contained more than stereotypes, as many of the items reflected prejudiced reactions and

discriminatory behavior making the more general term “stigma” seem more appropriate for the factor label than the narrower “stereotype” label.

The final revised version of the 4S contained 33 items instead of the original 73. Most items on the 4S had their highest loading on the expected factor and a much lower loading on the other factors. With the exception of items 53 and 62, all other items on the 4S loaded higher than any other items on their respective scales. Split loadings are not uncommon in factor analysis and these items were retained because there was a strong theoretical justification for keeping them within a certain factor. The results suggest that most items on the 4S are capturing unique aspects of stigma related to stuttering in the domains of stigma awareness, stereotype agreement, and stigma self-concurrence. The final set of items and factor loadings are presented in Table 8.

Table 8. Factor Analysis of Final Version of the 4S.

Variable	Factor 1	Factor 2	Factor 3
52. Because I stutter, I feel more nervous than people who don't stutter	.484		
53. Because I stutter, I feel just as confident as people who don't stutter	.443		
55. Because I stutter, I feel less capable than people who don't stutter	.490		
58. Because I stutter, I feel less sociable than people who don't stutter	.480		
62. Because I stutter, I feel less assertive than people who don't stutter	.379		
63. Because I stutter, I stop myself from taking jobs that require lots of talking	.702		
64. Because I stutter, I stop myself from accepting promotions at work	.773		

Variable	Factor 1	Factor 2	Factor 3
65. Because I stutter, I stop myself from going for higher education opportunities	.730		
68. Because I stutter, I stop myself from talking to people that I know well	.629		
72. Because I stutter, I stop myself from participating in social events	.772		
73. Because I stutter, I stop myself from taking part in discussions	.837		
3. Most people in the public believe that people who stutter are insecure		.470	
4. Most people in the public believe that people who stutter are self-confident		.445	
5. Most people in the public believe that people who stutter are friendly		.516	
8. Most people in the public believe that people who stutter are capable		.706	
10. Most people in the public believe that people who stutter are outgoing		.463	
11. Most people in the public believe that people who stutter are mentally healthy		.581	
15. When talking to a person who stutters, most people in the general public feel patient.		.613	
16. When talking to a person who stutters, most people in the general public feel annoyed.		.502	
20. When talking to a person who stutters, most people in the general public feel comfortable.		.576	
21. When talking to a person who stutters, most people in the general public feel anxious.		.541	
22. When talking to a person who stutters, most people in the general public feel embarrassed		.535	
28. Most people in the general public believe that people who stutter should avoid speaking in front of groups of people		.698	

Variable	Factor 1	Factor 2	Factor 3
29. Most people in the general public believe that people who stutter should have other people speak for them		.657	
30. Most people in the general public believe that people who stutter should avoid jobs that require lots of talking		.666	
40. I believe that most people who stutter are nervous			.630
41. I believe that most people who stutter are self-confident			.641
44. I believe that most people who stutter are capable			.397
45. I believe that most people who stutter are incompetent			.416
46. I believe that most people who stutter are insecure			.677
47. I believe that most people who stutter are outgoing			.613
48. I believe that most people who stutter are shy			.494

Step 6

A CFA using Mplus Version 6.11 (Muthén & Muthén, 1998-2011) was conducted on the 33-item 4S and supported the 3-factor structure of stigma awareness, stereotype agreement, and stigma self-concurrence and the items loading on those factors. In this analysis, item error terms within subscales, but not across subscales, were allowed to correlate with each other. This model specification made sense theoretically because pairs of items within a factor would likely share variance apart from the variance explained by the factor due to item content overlap. The CFA resulted in satisfactory fit indices,

$\chi^2(463) = 853.47$, $p < .0001$, and RMSEA = .054, 90% CI [.048, .059]. The confidence interval for RMSEA contains values representing close model fit (below .050) and reasonable model fit (between .051 and .080) (Brown & Cudeck, 1993). Therefore, at best the model would be considered a close fit for the data and at worst a reasonable fit.

Relationships among subscales

Correlations between subscales and the total scale are shown in Table 9. All correlations are statistically significant except between stigma awareness and stereotype agreement. In addition, intrasubscale item correlations (i.e., among items making up each subscale) were systematically larger than interitem subscale correlations (i.e., between items of different subscales), justifying the separation of items into distinct subscales (Clark & Watson, 1995). All subscales had a moderate to strong correlation with the overall 4S score. Because it was expected that these various subscales are related to stigma, these significant correlations were expected.

Table 9. Pearson Product Moment Correlations among 4S and Subscales.

	Stigma Awareness	Stereotype Agreement	Stigma Self-Concurrence
Stereotype agreement	.06		
Stigma Self-Concurrence	.20**	.27***	
Overall 4S	.64***	.48***	.84***

Note. **p = .001; ***p < .001

Reliability: Internal consistency and temporal stability

Establishing reliability is an important aspect of the psychometric analysis of any new scale. Reliability is the proportion of variance attributable to the latent variable being measured. A reliable instrument performs in consistent and predictable ways and reflects more of the true score of a variable rather than any extraneous factors (DeVellis, 2012). Two different types of reliability, internal consistency and temporal stability, were assessed in this study. To assess internal consistency, coefficient alphas were calculated for the 4S and the three subscales. Table 10 contains the alpha measures which provide evidence of internal consistency reliability, as they are all at between .70 and .89 which

are included in the acceptable to very good range of alpha levels described by Nunally (1978).

To assess temporal stability, test-retest correlations were calculated between responses to the original questionnaire and a follow-up questionnaire sent out 2 weeks later. Forty-one participants completed the questionnaire a second time, approximately 2 weeks apart. These participants were recruited through convenience sample, consisting of individuals who indicated on the initial survey that they would be willing to take the survey again in 2 weeks. Table 10 displays test-retest correlations and point-to-point agreement percentages for the 4S and its subscales. Test-retest correlation for the overall 4S was .80. Correlations for the subscales ranged from .55 to .83. It should be noted that test-retest coefficients for the subsections of stereotype agreement and stigma awareness were below .70. Different levels of minimum acceptable test-retest reliability, ranging from .50 to .70, have been recommended by different experts (Dilorio, 2005; Nunally & Bernstein, 1994; Streiner & Norman, 2003). Streiner and Norman (2003) state that it is difficult to determine an absolute cutoff point for acceptable test-retest reliability because it largely depends on what is being measured (e.g. state vs. trait characteristics) and how long of a gap there is between test and retest. That said, those authors recommended comparing the coefficient obtained with those obtained from other instruments measuring similar constructs. The test-retest values obtained for the 4S are comparable to other stigma questionnaires taken two weeks apart that have been used with adults with a variety of disorders including mental illness, HIV, attention hyperactivity disorder (ADHD), and chronic illness. These stigma scales have found test-retest correlations for specific subscales in the range of .55 – .90 and overall correlations for the total scale in

the range of .71 – .92 (Berger et al., 2001; Boyd Ritsher et al., 2003; Corrigan et al., 2006; Kellison et al., 2010).

Another method for analyzing test-retest reliability was conducted, namely, point-to-point agreement percentages. This method provided a supplemental measure beyond the Pearson correlation coefficient for test-retest reliability to illustrate the temporal stability of the 4S, particularly stereotype agreement and stereotype awareness, as these were the subscales with coefficients lower than .70. Overall percentages were calculated for the number of responses that remained exactly the same from test to retest, as well as the overall percentages for the number of responses that differed by one point or less from test to retest. This method has been used in survey research in communication sciences and disorders (St. Louis et al., 2009). Table 10 shows correlation coefficients as well as cumulative percentages for point-to-point agreement for responses made approximately two weeks apart for the total 4S as well as each subscale. The table shows that nearly 55% the responses were exactly the same for the overall 4S from test to retest, and nearly 86% were within 1 point. Similar results were found for the stereotype agreement and stigma awareness subscales. The results of these analyses indicate that the 4S demonstrates acceptable reliability.

Table 10. Reliability Statistics for 4S and Subscales.

	Coefficient Alpha	Test-Retest Correlation	Percentage of Identical Ratings	Percentage of Ratings \pm 1
Overall 4S	.87	.80	54.5	85.6
Stigma Awareness subscale	.84	.62	52.1	88.2
Stereotype Agreement subscale	.70	.55	58.6	86.8
Stigma Self- Concurrence subscale	.89	.82	55.0	81.8

Note. The last two columns represent cumulative percentages for point-to-point agreement of 1 – 5 ratings made approximately two weeks apart by 41 individuals who stutter.

Content Validity

Content validity refers to the degree to which a set of items reflects a content domain. DeVellis (2012) states that, “In theory, a scale has content validity when its items are a randomly chosen subset of the universe of appropriate items” (p. 60). This is accomplished by ensuring that all relevant aspects related to the variable of interest are represented in the scale. Content validity is closely linked to the conceptual definition of what the scale is supposed to measure, and the content of the scale must capture the

conceptual definition. It is important to note that establishing reliability is necessary but not sufficient for demonstrating validity.

In this study, several steps were taken to increase the content validity of the 4S including establishing a working definition and specific features of self-stigma (i.e., stereotypes, prejudiced reactions, and discriminatory behaviors) as well as different levels of internalization (i.e., awareness, agreement, and self-concurrence). Appropriate content for the 4S was geared to those elements and developed through an iterative process which included a broad literature review of self-stigma, interviews with PWS to understand how they conceptualize certain aspects of stigma, content expert reviews of the items originally developed to check their relevance, and a pilot study which sought feedback of participants regarding the items on the scale. Taken together, these steps increased the likelihood that the content included in the scale was relevant to self-stigma and measuring what it intended to measure, thereby supporting content validity.

Construct Validity

Construct validity is concerned with the theoretical relationship of some variable to other variables. Specifically it is "...the extent to which a measure 'behaves' the way that the construct it purports to measure should behave with regard to established measures of other constructs" (DeVellis, 2012, p. 64). In this study, the variable of self-concurrence was theorized to be negatively related to self-esteem, self-efficacy, and satisfaction with life. The correlations between these variables found in this study support the predicted pattern, as can be seen in Table 11. Stigma self-concurrence had a strong

negative correlation with self-esteem, and medium negative correlations with self-efficacy and satisfaction with life. This means that high stigma self-concurrence is related to lower self-esteem, self-efficacy, and life satisfaction.

Stigma awareness was not predicted to be significantly correlated with the dependent variables, and this indeed was the case in this study. Although a small negative and significant correlation was found between stigma awareness and self-esteem, this relationship was no longer significant after partialling out perceived stuttering severity. Stereotype agreement also had a medium negative correlation with self-esteem and self-efficacy and a small negative correlation with satisfaction with life, all of which were statistically significant. These findings indicate that higher levels of stereotype agreement are related to lower self-esteem, self-efficacy, and satisfaction with life. This finding did not match the predictions of Corrigan et al. (2006) who theorized that only self-concurrence would be linked to self-esteem and self-efficacy. However, the notion that self-stigma is a multilevel variable was supported in this study as seen through the increasingly negative correlations between self-stigma and the dependent variables with deeper levels of stigma internalization. That is, the negative correlations became stronger as the process moved from stigma awareness to stereotype agreement to stigma self-concurrence. The fact that the 4S could distinguish between the different levels of self-stigma, as seen through their different correlational strengths with the dependent variables, supports the theory of stigma as a multilevel variable. These findings, plus the fact that the deepest level of internalization (i.e., self-concurrence) was most negatively correlated with self-esteem, self-efficacy, and life satisfaction, support the initial construct validity of the 4S.

Table 11 displays all of the zero-order correlations between the different levels of self-stigma and self-esteem, self-efficacy, and life satisfaction. In addition, this table shows partial correlations between these variables, controlling for perceived stuttering severity. Theory suggests that self-stigma is an important aspect of publically stigmatized condition which may be relevant to well-being beyond the physical symptoms of a disability (Corrigan et al., 2010b). In this study, this translated to the hypothesis that stigma self-concurrence would be negatively related to the dependent variables while controlling for perceived stuttering severity and this was indeed the case.

Table 11. Zero-Order and Partial Correlations among Self-Stigma Subscales, Self-Esteem, Self-Efficacy, and Satisfaction with Life.

	Self-Esteem	Self-Efficacy	Satisfaction with Life
Stigma Awareness	-.16* ^a -.09 ^b	-.11	-.12
Stereotype Agreement	-.32*** ^a -.31*** ^b	-.38*** ^a -.33*** ^b	-.23*** ^a -.21*** ^b
Stigma Self-Concurrence	-.64*** ^a -.57*** ^b	-.42*** ^a -.37*** ^b	-.47*** ^a -.39*** ^b
Overall 4S	-.60*** ^a -.52*** ^b	-.43*** ^a -.39*** ^b	-.44*** ^a -.36*** ^b

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Superscript ^a = zero-order Pearson correlations, and superscript ^b = partial correlations, controlled for perceived stuttering severity.

Research Question 2

Is self-concurrence a significant predictor of self-esteem, self-efficacy, and life satisfaction for adults who stutter above and beyond demographic and stuttering-related variables?

Three separate hierarchical multiple regression equations were constructed to examine the relationship of stigma self-concurrence to self-esteem, self-efficacy, and life satisfaction in the overall sample. This approach is optimal for examining specific theoretically based hypotheses (Petrocelli, 2003). A predetermined theoretically based plan for the order of predictor variable entry was imposed on the data such that relevant stuttering-related variables (as determined by prior correlational analyses) were entered as a block in Step 1 and stigma self-concurrence was entered as the predictor variable in Step 2 for each equation. Because no demographic variables were found to be significantly related to any of the outcome variables, stuttering-related variables were entered into the first step, following the principal of causal priority (Cohen & Cohen, 1983) guided by theory suggesting that living with stuttering precedes cognitive and affective concerns related to stuttering (Iverach et al., 2009; Iverach et al., 2011). Examination of Tolerance and Variance Inflation Factor (VIF) for all regression equations revealed that multicollinearity was not a concern in any of the analyses. Results indicated that, after controlling for stuttering-related variables, stigma self-concurrence significantly predicted self-esteem, $t(226) = -10.27, p < .001$, self-efficacy, $t(240) = -5.66, p < .001$, and satisfaction with life, $t(246) = -6.58, p < .001$. Notably, self-stigma

accounted for 25%, 11%, and 13% of the variance in self-esteem, self-efficacy, and satisfaction with life, respectively, above and beyond the variation accounted for relevant stuttering-related parameters (Table 12).

Table 12. Hierarchical Regression Analyses of Stigma Self-Concurrence Predicting Self-Esteem, Self-Efficacy, and Satisfaction With Life.

Step	Variable	Standardized β	t for within-step predictors	R^2 Change for step	Cumulative R^2	F Change for step
Self-esteem as outcome variable						
1	Onset type	-.04	-.68	.23	.23	11.02***
	Years Stuttering	.17	2.82**			
	Stuttering Visibility	-.15	-2.00*			
	Fluency Importance	-.13	-2.15*			
	Stuttering Severity	-.21	-2.79**			
	Helpfulness of Tx	.17	2.82**			
2	Self-concurrence	-.60	-10.27***	.25	.48	105.56***
Self-efficacy as outcome variable						
1	Helpfulness of Tx	.14	.219*	.07	.07	8.77***
	Stuttering severity	-.20	-3.22***			
2	Self-concurrence	-.37	-5.66***	.11	.18	32.05***
Life satisfaction as outcome variable						
1	Age stutter started	-.10	-1.67	.15	.15	11.15***
	Years stuttering	.10	1.63			
	Stuttering visibility	-.12	-1.57			
	Stuttering severity	-.25	-3.34***			
2	Self-concurrence	-.40	-6.58***	.13	.28	43.27***

Note. * $p < .05$, ** $p < .01$, *** $p \leq .001$.

Chapter 4

Discussion

Summary, interpretations, and implications of findings

This study focused on the development of the 4S, a scale to measure the stigma associated with stuttering across different levels of stigma. Assessments of reliability and factor analysis to determine dimensionality of the scale were conducted. Findings suggest that the psychometric properties of the 4S are adequate for research purposes.

Specifically, reliability measures indicate that the 4S has acceptable temporal stability and acceptable to very good internal consistency. The 4S is made up of three constructs: stigma awareness, stereotype agreement, and stigma self-concurrence. Initial construct validity was supported in that stigma self-concurrence was negatively correlated with self-esteem, self-efficacy, and life satisfaction supporting the hypothesis that a negative relationship would be found between high levels of these variables, even while taking into account perceived stuttering severity. Also, supporting the hypothesis of the study, stigma self-concurrence was a significant predictor of self-esteem, self-efficacy, and life satisfaction, beyond demographic and stuttering-related variables.

Psychometric analysis of the 4S supports the notion that this scale is psychometrically sound scale that can be administered in a relatively brief period of time (approximately 5 minutes) that can tap into multiple levels of stigma that appear to be valuable for understanding the beliefs of PWS regarding the stigma related to stuttering.

In particular, the stereotype agreement and stigma self-concurrence subscales appear to be of importance to measure due to their relationships with critical elements of psychological well-being (i.e., self-esteem, self-efficacy, and life satisfaction). Clinically, this scale may provide speech-language pathologists with a relatively quick assessment of important psychosocial aspects of stuttering in their clients and determine their need for counseling on issues pertaining to stigma. Clinicians may want to assess self-stigma in the initial evaluation and use it as a treatment outcome measure throughout and at termination of treatment that will indicate whether clients have reduced self-stigmatizing attitudes. As demonstrated in this study, this is an important topic to address in adult stuttering therapy because of the relevance that stereotype agreement and stigma self-concurrence have for understanding important elements of psychological well-being including self-esteem, self-efficacy, and life satisfaction, even beyond stuttering severity. Speech-language pathologists can uphold their responsibility to increase quality of life in their adult clients who stutter by helping to reduce activity limitations, participation restrictions, and barriers created by contextual factors by actively addressing self-stigma during clinical interactions. Of course, a major aspect of adult stuttering therapy is modifying speech to reduce the degree of speech impairment, however, addressing self-stigma is a valuable component to therapy that can potentially improve well-being regardless of level of fluency achieved or the presence of negative societal reactions to stuttering.

Other notable findings from this study were the significant positive intercorrelations between the different levels of stigma, with the exception of the relationship between stigma awareness and stereotype agreement. Therefore, PWS being

aware of a public stigma about their group has no significant association with whether they will apply that stigma to other PWS. However, it does appear that higher levels of stigma awareness relate significantly to higher levels of stigma self-concurrence among PWS, although the size of this relationship is small. These findings indicate that PWS apply negative societal views more to themselves than to other PWS. In a sense, PWS may be harder on themselves compared to what they believe about other PWS. In addition, the findings of this study demonstrate that higher stereotype agreement is related to higher stigma self-concurrence and lower self-esteem, self-efficacy, and satisfaction with life among adults who stutter.

These findings seem to run counter to theories in social psychology which state that increased stereotype agreement for others in the stigmatized group might actually be related to higher self-esteem because of a negative comparison (Crocker & Major, 1989). These findings also differ from previous research studies that suggested that PWS have negative views toward other PWS but more positive views of themselves (Fransella, 1968; Kalinowski et al., 1987; Manning, Dailey, & Wallace, 1987). A speculative explanation for the discrepancy between these findings is that over recent years, many more PWS are coming together through technology that was not available during the time the previously cited studies were conducted. This increased sense of community and access to other PWS may have decreased stereotype agreement among PWS. The more opportunities for interaction with other PWS may have helped dispel myths and stereotypes about other PWS. Yet, a substantial proportion (near 40%) of PWS in this study demonstrated high levels of stigma self-concurrence. This may be explained by some PWS being harsher critics of themselves but refusing to endorse negative

generalizations or stereotypes to other group members. An encouraging finding of this study however is that PWS as a group demonstrate levels of self-esteem, self-efficacy, and satisfaction with life that are well within average levels compared to other samples of the population. This finding agrees with the prior research which has shown that among many stigmatized groups, self-esteem levels are not lower than those of the general population (for a review, see Crocker & Major, 1989).

The finding that awareness, agreement, and self-concurrence were separate identifiable factors supports the multilevel model of stigma described by Corrigan et al. (2006). The results of this study also support the notion that the negative relationship between stigma and elements of psychological well-being increases as stigma internalization increases (i.e., self-esteem self-efficacy, and life satisfaction are progressively lower as the process moves from stigma awareness to agreement to self-concurrence). However, in some respects the results run counter to the findings of Corrigan et al. (2006) who found that stereotype agreement was not significantly related to self-esteem or self-efficacy. This study showed that among adults who stutter, it is not just stigma self-concurrence that is related to psychological well-being, but stereotype agreement as well, albeit with a lower degree of association compared with self-concurrence. This result is similar to what was found by Rüsçh et al. (2006a) demonstrating that there is conflicting evidence regarding the relationship between stereotype agreement and self-esteem and self-efficacy. In addition, Corrigan et al. (2006) found significant relationships between stereotype awareness and self-esteem and self-efficacy, and Rüsçh et al. (2006a) found significant correlations between stereotype agreement and self-esteem even after controlling for depression, which was contrary to

their hypothesis. The results of this study suggest no statistically significant relationships between stigma awareness and self-esteem or self-efficacy after controlling for perceived stuttering severity. The differences in correlational results observed between this study and previous studies on self-stigma may have to do with different populations being measured, as the previously mentioned studies investigated individuals with mental illness. Perhaps awareness of stigma has more negative implications for individuals with mental illness compared with PWS.

The findings that stereotype agreement and stigma self-concurrence, but not stigma awareness, are associated with self-esteem, self-efficacy, and satisfaction with life have implications for the long held fear held by many researchers of a self-fulfilling prophecy for PWS in which they modify their self-concept to match the perceptions that others have of them (Woods & Williams, 1976; Woods, 1978). Although a statistically significant correlation was found between higher levels of stigma awareness and higher levels of stigma self-concurrence (i.e., internalization of public stigma), it is considered a small relationship. Therefore, there may be a nugget of truth in the claim that negative perceptions of PWS from the public may "...be functional in influencing stutterers' self-concept as well as their actual behavior" (Turnbaugh et al., 1979, p. 44), however its contribution to predicting stigma self-concurrence is relatively small. In addition, stigma awareness is not significantly related to decrements in self-esteem, self-efficacy, or satisfaction with life above and beyond perceived stuttering severity. Therefore, it might be said that the process of moving from stigma awareness to decrements in psychological well-being has multiple levels, with stigma awareness not being related to self-esteem, self-efficacy, or satisfaction with life per se. Rather, it is when the internalization extends

beyond mere awareness of stigma to agreement and self-concurrence or internalization of the stigma that the PWS may be in danger of experiencing decrements their self-concept, actions, and well-being.

Therefore it appears reasonable to conclude in this case that there is relatively weak support for the classic looking-glass self model of stigma internalization in which awareness of stigmatizing attitudes of society are sufficient for PWS to experience internalized stigmatizing attitudes to the detriment of their self-concept and actual behavior, and even less support for the idea that this awareness is related to decrements in psychological well-being. In other words, just because a PWS is aware of negative societal perceptions against them, does not mean that the PWS will necessarily agree those negative perceptions and apply them to the self.

In general, the findings of this study support previous research demonstrating negative associations between internalized stigma and self-esteem (Berger et al., 2001; Corrigan et al., 2006), and self-efficacy (Rüsch et al. 2006a; Watson et al., 2007) found in various populations and extends it to PWS. Furthermore, the strength of these relationships was shown to be medium to strong, which is larger than the effect size of the relationship between mental health and stigma reported by Mak et al. (2008).

Another important finding of this study is that stigma self-concurrence is a significant predictor of self-esteem, self-efficacy, and satisfaction with life, above and beyond other demographic and stuttering-related variables such as visibility and perceived stuttering severity among PWS. Based on systematic review of different treatments for stuttering, some researchers (Bothe, Davidow, Bramlett, & Ingham, 2006) contend that removing or reducing stuttering is sufficient to reduce social, emotional, and

cognitive aspects of stuttering without explicitly targeting those dimensions in treatment, and further that addressing these dimensions does not improve speech performance. However, it appears reasonable to suggest that the improvements in cognitive and affective domains resulting from therapy aimed purely at removing stuttering are dependent on the maintenance of speech fluency gains obtained in treatment after therapy has ended. Unfortunately, it is well-known that one of the most consistent findings regarding stuttering is that some degree of relapse is the rule rather than the exception and most PWS, especially older children, adolescents, and adults, have extreme difficulty generalizing and maintaining their fluency gains from treatment over time and across all situations, particularly in anxiety provoking situations. (Bloodstein & Bernstein-Ratner, 2008; Craig, 1998; Plexico et al., 2009). In addition, stigma self-concurrence appears to be relevant in predicting self-esteem, self-efficacy, and life satisfaction, beyond stuttering severity and visibility. Therefore, even if some PWS have difficulty learning, implementing, or retaining modified speaking strategies to reduce stuttering, modifying self-stigmatizing attitudes may still help improve their quality of life.

It has been established that addressing quality of life and well-being among PWS is an important and relevant goal for SLPs working with PWS through decreasing activity limitations and participation restrictions of clients (ASHA, 2007; Yaruss, 2010). Self-stigma certainly appears to have implications for activity limitations and participation restrictions experienced by PWS (Klompas & Ross, 2004; Plexico et al., 2009). Self-stigma could be addressed in therapy with PWS even if fluency changes established through speech modification programs did not last over time, across situations, and long after the therapy ended. Working on self-stigma in therapy may have implications for

elements of clients' well-being including self-esteem, self-efficacy, and life satisfaction, that are independent of the degree of fluency established and therefore not dependent on fluency maintenance to have a positive impact on the lives of PWS.

Clinician implementation of strategies designed to lower stereotype agreement and stigma self-concurrence include cognitive restructuring strategies such as socratic questioning and testing and gathering evidence for and against specific beliefs. Clients may also benefit from being taught advocacy skills during interactions with communication partners and being encouraged to become or remain engaged in typically avoided social events and activities that involve speaking. In addition to these skills, clients can be encouraged to expand their support network of other individuals who stutter and increase group identification with PWS.

To summarize the implications of this research, the 4S is a psychometrically sound measure of self-stigma associated with stuttering. Before the development of this scale, there existed no scale for measuring the different levels of stigma awareness, stereotype agreement, and stigma self-concurrence specifically related to stuttering. This scale will allow researchers to examine how these different levels of stigma relate to important therapy outcomes for PWS including well-being and quality of life. This research also has direct implications for clinical services for PWS. If self-stigma is a problem for certain clients who stutter, this topic could be addressed by the speech-language pathologist to improve the client's societal participation and reduce activity limitations and participation restrictions which self-stigma would likely result in.

Guided by future research on stigma related to stuttering, efforts focused on challenging public stigma and diminishing self-stigma can be refined and put into

practice. Specifically, certain educational and anti-stigma campaigns targeted at specific groups of people (e.g., teachers, employers, students, etc.) may be helpful in reducing public stigma. In addition, therapy activities designed to attenuate the internalization of stigma through increasing empowerment and cognitive reframing could be utilized with clients. These types of therapies may help clients from falling into the “Why try” effect (Corrigan et al., 2009) which can undermine confidence in achieving life goals and developing meaningful relationships.

Strengths and limitations

A major strength of this study is that the content of the 4S came from a combination of recording the experiences of PWS through qualitative analysis as well as theoretical conceptions of stigma related with stuttering. Therefore, the 4S reflects the lived experience of stuttering from the perspective of PWS. In addition, a wide variety of PWS participated in the survey including a wide range of ages, ethnicities, and background in therapy and support group experiences. Although the study included a wide variety of PWS, data from PWS who did not have a history of treatment for stuttering or self-help were not obtained. It may be reasonable to think that the responses of PWS who have not sought external support might differ from those in this study, and it may not be possible to generalize the findings of this study to those individuals. Despite the difficulty in identifying these individuals, it would be interesting to pursue this question in future research. For example, it may be the case that individuals who have sought help either through support groups for PWS or by receiving speech therapy have

higher self-esteem, self-efficacy, and life satisfaction than those who have not pursued this external support. If this was true, higher correlation effect sizes would be expected between self-stigma and the outcome variables than those observed in this study. In addition, even though many different ethnicities were represented in the study, the majority of the participants were Caucasian and therefore the instrument needs further evaluation in a larger population of different ethnicities. Furthermore, it is not known how responders to this survey differed from nonresponders and if those potential differences have implications for the results found in this study.

As with all studies employing survey methodology, all data were ascertained through self-report including perceived stuttering severity. Although it is reasonable to be concerned about the degree of subjectivity in a self-report measure for stuttering severity, previous research has demonstrated that self-ratings are reliable and usually consistent with more objectively rated evaluations of fluency (O'Brian et al., 2004a; b).

Another issue to mention is that an element of subjectivity is unavoidable in the interpretation of the results of factor analyses. Therefore, there may be other ways of describing the factors that arose in this study. However, the results of the CFA using the 3 factors specified in this study demonstrates that stigma awareness, stereotype agreement, and stigma self-concurrence provide at best a close model fit and at worst a reasonable model fit for describing the factor structure of the data.

The observational design of this study does not permit conclusions of a causal relationship between self-stigma and self-esteem, self-efficacy, and satisfaction with life. Although the inverse correlation of self-stigma and self-esteem, self-efficacy, and satisfaction with life found in this study are suspected to mean that self-stigma leads to

diminished self-esteem as a consequence, it is possible that there is a mediating construct linked to these variables, or that low self-esteem leads to increased self-stigma. The latter interpretation seems less likely though as longitudinal research has shown that baseline self-esteem is not a long term predictor of self-stigma, but self-stigma is a long term predictor of self-esteem (Link et al., 2001). Also, other factors beyond what was measured in this study are clearly associated with self-esteem, self-efficacy, and life satisfaction among PWS as there was a substantial proportion of unexplained variance in these variables. Although many demographic and stuttering-related variables were accounted for, there are more variables still to discover, perhaps related to individual factors such as coping style, or environmental factors such as social support. In fact, recent evidence suggests that social support and healthy social functioning are some of the strongest predictors of self-efficacy among PWS (Craig, Blumgart, & Tran, 2011). Still, it appears from this study that self-stigma and stuttering-related variables contribute independently to self-esteem, self-efficacy, and satisfaction with life.

It also seems reasonable to suggest that there are other aspects of stigma including disclosure and even positive aspects of living with a stigmatized disorder like stuttering. The 4S was modeled after the SSMIS (Corrigan et al., 2006) and although many more different theoretical elements of stigma were included in the 4S beyond those included in the SSMIS (e.g., awareness of prejudiced reactions from the public, self-discrimination), the 4S may not capture the entirety of items that can potentially be related to the stigma of stuttering (e.g., disclosure practices, personal experiences of discrimination), and therefore additional items may be included in future scales.

Although disclosure practices may be related to stigma, it has been found to have lower

correlations to other aspects of stigma (Berger et al., 2001). This may be because people might choose not to disclose a disability to other people due to pragmatic consequences, such as loss of a job opportunity, rather than because of concerns about being stigmatized. In addition, disclosure in stuttering is different than in many other populations like HIV-AIDS because it is often visible and detectable to others even without disclosure and many PWS do not have the choice about whether or not they want to disclose their stuttering due to its involuntary nature.

There are other reasons to believe that a complete assessment of perceived stigmatization will assess manifestations of stigmatization not included in the 4S. For example, although the original version of the 4S attempted to measure “perceived discrimination” with items related to discrimination in employment, social situations, and romantic relationships, factor analysis revealed that these appeared to be distinct doublet factors, rather than all being able to be categorized under the broader category of “perceived discrimination.” Possibly, with a larger item pool, these factors would become more conceptually sound. Also, as mentioned previously, items measuring personally experienced discrimination were not included in the scale, as the questions were worded in a way that referred to “people who stutter” and not personally. That being stated, the 4S does follow the multilevel model of stigma proposed by Corrigan et al. (2006) which was the primary interest of this study. Therefore, although there are other possible elements to the stigma of stuttering, the questions included and the format of 4S captured those elements of the stigma of stuttering that were of theoretical relevance to the research questions that were asked in this study.

It may also be possible that stigma operates in a way different than hypothesized in this study and those of Corrigan et al. (2006). For example, it is certainly conceivable that PWS feeling negatively about themselves and demonstrating self-stigma (e.g., feeling less competent or more inadequate than people who do not stutter) might be the result of something besides internalization of public stigma. It is possible that even without negative reactions of others in the public, some PWS may just intrinsically feel flawed and stigmatized due to their own shame or personal reactions to stuttering.

Despite these limitations, this study was the first to describe and measure different theoretical levels of stigma including stigma awareness, stereotype agreement, and stigma self-concurrence in a scale specifically as they relate to stuttering. In addition, this study appears to be the first to look at these different levels of stigma and analyze their relationships with various measures of well-being among PWS including self-esteem, self-efficacy, and satisfaction with life. The idea of public and self-stigma related to stuttering is not a new one, although different terms may have been used to describe them. Despite this, the majority of claims regarding stigma and stuttering have been mostly speculative including the looking glass-self hypothesis predicting that PWS will internalize the stereotypes and negative perceptions about PWS held in the public to the detriment of their own self-concepts (Turnbaugh, Hoffman, & Guitar, 1979, Woods; 1978; Woods & Williams, 1976). This study is the first to demonstrate empirically that the correlations between high awareness of the stuttering stigma and high self-concurrence with those attitudes do exist although they are small. Awareness of stigma, however, is not related to self-esteem self-efficacy, and satisfaction with life among adults who stutter. Rather, it appears that deeper internalization in the form of agreement

and self-concurrence with the stigma becomes relevant for the well-being of PWS. This study is also the first to demonstrate that higher internalized stigma in the form of stereotype agreement and stigma self-concurrence is related to lower self-esteem, self-efficacy, and psychological well-being independent of relevant demographic and stuttering-related variables including perceived stuttering severity and perceived stuttering visibility.

Future directions

This study fills in some knowledge about the stigma related to stuttering and its implications regarding self-esteem, self-efficacy, and life satisfaction. However, there are many new questions that arise from this project and a variety of research ideas to consider in the future.

First, further study of the 4S can provide more information regarding its psychometric properties and its usefulness in measuring stigma across a wide variety of ages and ethnicities. Research is needed to better understand the stigma experiences of children and adolescents as well as understudied ethnic populations. In addition, PWS who are covert about their stuttering and refuse to seek treatment or support for stuttering due to fear of being labeled as a PWS should be involved in future research, if it is indeed possible to recruit a large enough group of such individuals. Appropriate methods of assessing stigma experienced by PWS should continue to be refined based on conceptual models and theories of stigma. Certainly more study is needed to build evidence for the validity of the scale, especially analysis of convergent validity of the 4S with constructs

theoretically related to stigma (e.g., shame) and divergent validity with constructs negatively related to stigma (e.g., empowerment). In addition, confirming the factor structure of the 4S on different samples will be important. Although more study is needed, the 4S demonstrated potential to measure important aspects of stigma among PWS.

Future research can explore the relationship between self-stigma and factors related to well-being and quality of life. Although this study presented evidence that stigma self-concurrence helps predict self-esteem, self-efficacy, and life satisfaction beyond certain demographic and stuttering-related variables, research in this area can expand greatly and there is still a large portion of unexplained variance in those elements of psychological well-being. For example, modeling relationships among these variables and examining potential mediating or moderating effects of different individual factors (e.g., coping style, personality characteristics), environmental factors (e.g., family support and acceptance, level of social support from similar others, experiences being bullied), and stuttering-related factors (e.g., objective stuttering severity, specific types of disfluencies exhibited) could help to increase our understanding of predictors of well-being among PWS. It will also be important to look at the relationships between self-stigma of stuttering and other aspects of well-being among PWS. This study measured three important aspects of well-being, however, there are many other possible constructs to measure including positive affect and quality of life. It is also possible that there is a positive end of the continuum, empowerment. Researchers in the field of psychology have found relationships between self-stigma and empowerment (Sibitz et al., 2011).

How does self-stigma relate to empowerment among PWS? These questions could be the focus of future research projects.

In addition, future investigations could examine the effects of educational and outreach efforts targeted at reducing public stigma related to stuttering. Studies examining attenuation of negative public attitudes about stuttering following educational and advocacy efforts are limited and most report that attitudes of the public did not improve following clinical contact (Leahy, 1994), or after watching videos about PWS (McGee et al., 1996, Snyder, 2001). The exception to this is a recent study by Flynn and St. Louis (2011) that reported that adolescents had increased positive perceptions of PWS following both a video presentation and oral presentation from a PWS, with the oral live presentation being more effective. Clearly, there is much to learn about the most effective ways to increase positive attitudes about PWS in terms of target audiences and content delivered to those audiences. Future studies should compare different anti-stigma approaches (e.g., education and contact) across different audiences and using different content to determine the optimal approach for reduction of public stigma. This research will be important to conduct because of the non-trivial association between awareness of public stigma and internalization of that stigma among PWS.

These types of studies will also be important in the future because the general public seems to have expectations and recommendations for how PWS can help their listeners that are inconsistent with the best practices taught by speech-language pathologists. Hughes, Gabel, and Irani (2010) conducted a qualitative study with college students and found that many participants recommended things like talking more slowly, thinking before speaking, avoiding troublesome sounds or words, talking less, using

gestures to distract from stuttering, and writing messages down on paper rather than speaking, as ways that PWS can help their listeners. The authors explained that these recommendations are the very same things that most speech-language pathologists try to reduce in PWS because they have been found to be unhelpful and frustrating in the long-term. There seems to be a discrepancy between the desire of listeners for the PWS to speak fluently and avoid stuttering, and many techniques taught in therapy that do not emphasize increased fluency (e.g., non-avoidance behavior and stuttering modification techniques). These researchers also found that only a very small percentage of participants (9%) thought that speech therapy would be a good way for PWS to help their listeners. This may explain why utilization of fluency shaping techniques have not increased positive perceptions of PWS from the public compared to stuttered speech (Von Tiling, 2011) and stuttering modification actually results in more negative judgment from listeners than stuttered speech (Manning, Burlison, & Thaxton, 1999).

Certain types of education and advocacy programs designed to educate the public about specific therapy techniques and their rationale may help to improve public attitudes about stuttering and speech therapy for stuttering. It is conceivable that this would make PWS more comfortable in using strategies taught in speech therapy for stuttering management. A somewhat related topic of future research is in understanding how beliefs about the nature of stuttering in terms of perceived origin, controllability, and responsibility differentially impact public stigma related to stuttering. Boyle et al. (2009) found that different explanations about the origin of stuttering impacted the degree of social distance desired from PWS as well as the extent of negative stereotypes applied to PWS. Specifically, it was found that providing a psychological cause for stuttering results

in more negative stereotypes and desired social distance from PWS compared with genetic explanations. It is possible that educating the public that there is strong evidence of genetic and neurological foundations to stuttering may improve attitudes. The role of causal attribution in public stigma of stuttering provides many interesting options for future research.

Despite the fact that some people in the public have recommendations for PWS that are not helpful in the long term (Hughes et al., 2010), there has been other research demonstrating that there are many things known to be helpful for PWS and that might also reduce the negative reactions they might receive from the public. These include maintaining eye contact (Tatchell, van den Berg, & Lerman, 1983), disclosure of stuttering (Collins & Blood, 1990; Lee & Manning, 2010) and resisting the use of verbal avoidance behaviors (Von Tiling, 2011). Future research can continue to investigate aspects of a communication interaction that may lead to better interactions between PWS and the general public.

In addition to addressing public stigma of stuttering, treatment for PWS can focus on reduction of self-stigmatizing attitudes and thoughts directly. There are now a number of treatments being used by speech-language pathologists that appear to be effective in managing cognitive and affective aspects of stuttering. One approach that aims to identify and replace maladaptive thought patterns is cognitive-behavioral therapy (CBT). A tutorial on CBT and its strategies and applications to treating PWS is provided by Menzies, Onslow, Packman, and O'Brian (2009). Therapy strategies and activities presented in CBT may aid in cognitive restructuring for PWS (Menzies et al., 2008) and this may have implications for reducing self-stigmatizing thoughts, especially those

related to stereotype agreement and stigma self-concurrence. In addition to CBT, mindfulness-based treatments have shown promise for reducing negative thoughts and feelings related to stuttering (de Veer, Brouwers, Evers, & Tomic, 2009). Mindfulness may be relevant for reduction of self-stigma through changing how clients relate to their own thoughts and feelings. A tutorial on mindfulness and how it can be applied to stuttering management was provided by Boyle (2011). Future studies can examine the effect of treatments like CBT and mindfulness on self-stigma related to stuttering.

Another interesting possibility is that different types of social stigmatizing behaviors are experienced by PWS with different symptoms and types of disfluencies. For example, discrimination in employment may be more prevalent among PWS with very overtly severe physical stuttering and stereotypes of being unconfident and incompetent may be more directed more at PWS who use verbal and physical avoidance behaviors. Future studies could investigate the extent to which different aspects of stigma are experienced by PWS depending on particular types of stuttering symptoms. Finally, most of the research conducted in the area of stigma and stuttering has been conducted using self-report measures. Thus, in future research it would be interesting to investigate the connection between public and self-stigma and well-being by other assessment methods (e.g., diary methods, observational/behavioral data, physiological measures).

Conclusion

Self-stigma is a multilevel process that is negatively related to self-esteem, self-efficacy, and life satisfaction among PWS. This may have implications for quality of life and therapy benefits obtained among PWS. For many PWS, self-stigma may be as serious and debilitating, perhaps even more so, than their physical speech disfluencies. The 4S now requires further assessment and refinement in different clinical and research populations. The author believes that looking at multiple layers of stigma through instruments like the 4S can contribute to our understanding of processes that have implications for well-being and quality of life among PWS and help to develop comprehensive treatment programs. Identifying and modifying fear of stigma and self-stigma should be on the minds of speech-language pathologists working with adults who stutter. If self-stigma is identified among clients who stutter, interventions to help them deal with public and self-stigma should be developed in order to uphold the obligation as SLPs to help clients overcome activity limitations and participation restrictions. Regardless of history of discrimination or negative reactions from the public related to stuttering, the extent to which the person's quality of life, well-being, and morale are impacted by stigma is open to change. The 4S is intended to be a tool used by researchers and service providers working with PWS to identify and document these types of changes. Interventions targeting the reduction of internalized stigma may help many PWS to participate fully in society to the extent desired and achieve their goals in life.

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Appendix A

Overview and Informed Consent Form

Thank you for participating in this 10 minute survey. This is your opportunity to share your attitudes and experiences regarding stuttering. The results will be used to help improve treatment and other services for people who stutter by addressing the experiences and perceptions of people who stutter. You will be asked to answer questions about your attitudes toward stuttering, your feelings in general, and how you rate your own stuttering. Then, you will be asked a few demographic questions. The purpose of this study is to look at the connections between these things. The information that you give will be completely anonymous and no identifiable information about you will be used in any publications related to this research. All completed questionnaire information will be stored in a database that is password protected and secure. Remember that your decision to complete this survey is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawal from this study will in no way impact your relationship with the National Stuttering Association, The Pennsylvania State University, or any other organization. Please contact Michael Boyle at (814) 867-1502 or mpb227@psu.edu with questions or concerns about this research. You must be 18 years of age or older and a person who stutters to participate in this research study. By completing and submitting this questionnaire you are indicating your consent to participate in this study. At the end of each page of the survey you will be prompted to continue by clicking on the >> button on the lower right hand side of the page. Please click this button to take the questionnaire.

Appendix B

Original Version of 4S

Please indicate what you believe most people in the general public believe about people who stutter (when comparing with people who don't stutter) by clicking the appropriate circle to complete this statement: Most people in the general public believe that people who stutter are...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Nervous (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shy (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insecure (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confident (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confused (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capable (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incompetent (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outgoing (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentally healthy (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embarrassed (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not trying hard enough to stop stuttering (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not concerned enough to stop stuttering (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When talking to a person who stutters, most people in the general public feel...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Patient (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annoyed (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frustrated (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confused (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surprised (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfortable (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embarrassed (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pity for the person who stutters (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unsure how to react to stuttering (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That they should help the person who stutters (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
That they should give advice to the person who stutters (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not bothered by stuttering (27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people in the general public believe that people who stutter...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Should avoid speaking in front of groups of people (28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should have other people speak for them (29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should avoid jobs that require lots of talking (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are likely to be hired for jobs that require lots of talking (31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are likely to be promoted at work (32)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Are able to do their job effectively (33)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people in the general public would want to...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Avoid having a conversation with a person who stutters (34)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Be friends with a person who stutters (35)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduce a person who stutters to friends (36)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid dating a person who stutters (37)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid having a romantic relationship with a person who stutters (38)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work with a person who stutters (39)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I believe that most people who stutter are... (in this section, answer what you personally believe about other people who stutter)

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Nervous (40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-Confident (41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confused (42)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent (43)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capable (44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incompetent (45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insecure (46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outgoing (47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shy (48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Optimistic (49)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stressed (50)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Because I stutter, I feel... (in this section, indicate your beliefs about yourself compared to people who don't stutter)

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Less adequate than people who don't stutter (51)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More nervous than people who don't stutter (52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as confident as people who don't stutter (53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as secure as people who don't stutter (54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less capable than people who don't stutter (55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less competent than people who don't stutter (56)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as intelligent as people who don't stutter (57)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less sociable than people who don't stutter (58)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as outgoing as people who don't stutter (59)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More confused than people who don't stutter (60)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as ambitious as people who don't stutter (61)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less assertive than people who don't stutter (62)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Because I stutter, I stop myself from...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Taking jobs that require lots of talking (63)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accepting promotions at work (64)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selecting the career that I really want (65)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asking for promotions at work (66)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going for higher education opportunities (67)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking to people I know well (68)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking to people I don't know well (69)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Starting conversations with other people (70)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking in front of a group of people (71)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participating in social events (72)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking part in discussions (73)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C

Revised Version of the 4S

Please indicate what you believe most people in the general public believe about people who stutter (when comparing with people who don't stutter) by clicking the appropriate circle to complete this statement: Most people in the general public believe that people who stutter are...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Insecure (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confident (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friendly (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capable (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outgoing (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentally healthy (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When talking to a person who stutters, most people in the general public feel...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Patient (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annoyed (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfortable (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embarrassed (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people in the general public believe that people who stutter...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Should avoid speaking in front of groups of people (28)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should have other people speak for them (29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Should avoid jobs that require lots of talking (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I believe that most people who stutter are... (in this section, answer what you personally believe about other people who stutter)

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Nervous (40)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-Confident (41)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capable (44)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incompetent (45)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insecure (46)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outgoing (47)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shy (48)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Because I stutter, I feel... (in this section, indicate your beliefs about yourself compared to people who don't stutter)

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
More nervous than people who don't stutter (52)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just as confident as people who don't stutter (53)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less capable than people who don't stutter (55)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less sociable than people who don't stutter (58)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less assertive than people who don't stutter (62)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Because I stutter, I stop myself from...

	Strongly Disagree (1)	Somewhat Disagree (2)	Neither Agree nor Disagree (3)	Somewhat Agree (4)	Strongly Agree (5)
Taking jobs that require lots of talking (63)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accepting promotions at work (64)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selecting the career that I really want (65)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going for higher education opportunities (67)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking to people I know well (68)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participating in social events (72)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking part in discussions (73)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix D

Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. Please indicate the extent to which you agree or disagree with these statements by clicking the appropriate circle.

1. I feel that I'm a person of worth, at least on an equal plane with others.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

2. I feel that I have a number of good qualities.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

3. All in all, I am inclined to feel that I am a failure.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

4. I am able to do things as well as most other people.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

5. I feel I do not have much to be proud of.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

6. I take a positive attitude toward myself.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

7. On the whole, I am satisfied with myself.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

8. I wish I could have more respect for myself.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

9. I certainly feel useless at times.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

10. At times I think I am no good at all.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Appendix E

Satisfaction With Life Scale

Below are five statements that you may or may not agree with. Please indicate the extent to which you agree or disagree with these statements by clicking the appropriate circle.

1. In most ways my life is close to ideal.

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree nor Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

2. The conditions of my life are excellent.

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree nor Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

3. I am satisfied with my life.

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree nor Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

4. So far I have gotten the important things I want in life.

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree nor Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

5. If I could live my life over, I would change almost nothing.

- Strongly Disagree (1)
- Disagree (2)
- Slightly Disagree (3)
- Neither Agree nor Disagree (4)
- Slightly Agree (5)
- Agree (6)
- Strongly Agree (7)

Appendix F

General Self-Efficacy Scale

Below is a list of statements dealing with beliefs about yourself. Please indicate the extent to which you believe these statements are true or false by clicking the appropriate circle.

1. I can always manage to solve difficult problems if I try hard enough.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

2. If someone opposes me, I can find the means to get what I want.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

3. It is easy for me to stick to my aims and accomplish my goals.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

4. I am confident that I could deal efficiently with unexpected events.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

5. Thanks to my resourcefulness, I know how to handle unforeseen situations.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

6. I can solve most of my problems if I invest the necessary effort.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

7. I can remain calm when facing difficulties because I can rely on my coping abilities.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

8. When I am confronted with a problem, I can usually find several solutions.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

9. If I am in trouble, I can usually think of a solution

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

10. I can usually handle whatever comes my way.

- Not at all True (1)
- Hardly True (2)
- Moderately True (3)
- Exactly True (4)

Appendix G

Perceived Stuttering Severity Scale

Please use the 9-point scale below to rate your typical stuttering severity for each of the following eight speaking situations (with 1 = no stuttering and 9 = extremely severe stuttering). Click and drag the slider to the appropriate rating to indicate your answer. Keep in mind that typical stuttering severity will be defined as the severity of your stuttering for the majority of the day.

- _____ Talking with a family member (1)
- _____ Talking with a familiar person, not a family member (2)
- _____ Talking in a group of people (3)
- _____ Talking with a stranger (4)
- _____ Talking with an authority figure such as a work manager or teacher (5)
- _____ Talking on the telephone (6)
- _____ Ordering food or drink (7)
- _____ Giving your name or address (8)

Appendix H

Demographic and Stuttering-Related Information

Please fill out this last section of demographic information about yourself by checking the appropriate box and filling in the blanks. You're almost done!

1. What is your gender?

- Male (1)
- Female (2)

2. Type your current age in the blank below.

3. What is your ethnicity?

- African American (1)
- Asian American (2)
- Caucasian, non-Hispanic (3)
- Hispanic American (4)
- Native American (5)
- Other (6) _____

4. About what age were you when you began to stutter? Fill in the blank below.

5. For about how many years have you stuttered? Fill in the blank below.

6. How do you think your stuttering began?

- Suddenly and without warning (1)
- Slowly over time (2)

7. What do you think causes stuttering?

- Differences in how the brain works (1)
- Psychological or emotional problems (2)
- I don't know what causes stuttering (3)

8. How would you describe the course of your stuttering over your life?

- It has stayed relatively stable over time (1)
- It has varied and changed over time (2)

9. What is your belief about the future of your stuttering?

- It will go away by itself (1)
- It will go away if I practice being fluent (2)
- I will probably stutter for the rest of my life to some degree (3)

10. How visible do you think your stuttering is to other people?

- Not at all visible (1)
- Slightly visible (2)
- Moderately visible (3)
- Very visible (4)

11. In general, how important is it to you to produce fluent speech when talking to other people?

- Not important at all (1)
- Slightly important (2)
- Moderately important (3)
- Extremely important (4)

12. Have you ever been, or are you currently enrolled in speech therapy?

- Yes (1)
- No (2)

13. For about how many years have you been in speech therapy? Fill in the blank below.

14. In general, how helpful has the speech therapy you have received been?

- Extremely helpful (1)
- Moderately helpful (2)
- A little helpful (3)
- Not at all helpful (4)

15. Have you ever been, or are you currently a member of a stuttering support group?

- Yes (1)
- No (2)

16. For about how many years have you been a member of a stuttering support group? Fill in the blank below.

17. In general, how helpful have the stuttering support groups been to you?

- Extremely helpful (1)
- Moderately helpful (2)
- A little helpful (3)
- Not at all helpful (4)

18. What was the biggest reason that you joined the stuttering support group? You can select more than 1 answer.

- To meet other people who stutter (1)
- To practice speech therapy techniques (2)
- To share feelings, thoughts, and experiences (3)
- To talk in a safe place (4)
- To learn and understand more about stuttering (5)
- To help others feel better about themselves (6)
- Other (7) _____

VITA

Michael P. Boyle

Education

2012	Ph.D.	Communication Sciences and Disorders, The Pennsylvania State University
2008	M.S.	Speech-Language Pathology, The Pennsylvania State University
2006	B.A.	Psychology, The University of Delaware

University Teaching Experience

2012 –	<i>Assistant Professor</i> , Communication Sciences and Disorders, Oklahoma State University
2009–2012	<i>Instructor</i> , Communication Sciences and Disorders, The Pennsylvania State University

Clinical Experience

2011	Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP) awarded
2011	<i>Speech-Language Pathologist (Clinical Fellow)</i> , PPR Healthcare Staffing
2011	<i>Speech-Language Pathologist (Clinical Fellow)</i> , Penn State Speech-Language and Hearing Clinic
2009–2010	<i>Speech-Language Pathologist (Clinical Fellow)</i> , Easter Seals of Central Pennsylvania

Publications

Boyle, M. P. (in press). Mindfulness and Stuttering. In P. Reitzes (Ed.), *StutterTalk* e-book.

Boyle, M. P. (2011). Mindfulness training in stuttering therapy: A tutorial for speech-language pathologists. *Journal of Fluency Disorders*, 36, 122-129.

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Blood, G. W., Blood, I. M., Dorward, S., **Boyle, M. P.**, & Tramontana, G. M. (2011). Coping strategies and adolescents: Learning to take care of self and stuttering during treatment. *Perspectives on Fluency Disorders*, 21, 68-77.

Blood, G. W., Blood, I. M., Tramontana, G. M., Sylvia, A. J., **Boyle, M. P.**, & Motzko, G. R. (2011). Self-reported experience of bullying of students who stutter: Relations with life satisfaction, life orientation, and self-esteem. *Perceptual and Motor Skills*, 113, 353-364.

Blood, G. W., **Boyle, M. P.**, Nalesnik, G. R., & Blood, I. M. (2010). Bullying in children who stutter: Speech-language pathologists' perceptions and intervention strategies. *Journal of Fluency Disorders*, 35, 92-109.

Boyle, M. P., Blood, G. W., & Blood, I. M. (2009). Effects of perceived causality on perceptions of persons who stutter. *Journal of Fluency Disorders*, 34, 201-218.

Professional Affiliations and Memberships

2011 –	Member of the American Speech-Language and Hearing Association
2009 –	Member of the American Speech-Language and Hearing Association's Special Interest Group 4: Fluency and Fluency Disorders.
2009 –	Member of the National Stuttering Association
2009 –2012	Leader of the Central Pennsylvania Chapter of the National Stuttering Association

Awards and Honors

2008	Maryann Peins Graduate Scholarship in Speech Pathology
2007	Maryann Peins Memorial Scholarship in Speech Pathology
2006–2012	Graduate Research and Teaching Assistantship, Communication Sciences and Disorders, The Pennsylvania State University