

Research Article

Applying the Transtheoretical Model to Stuttering Management Among Adolescents: Part II. Exploratory Scale Validation

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Purpose: This article is the second in a two-part series on the application of the *Transtheoretical Model* to stuttering management among adolescents. The purpose of this article was to apply and explore the validity of newly developed Transtheoretical measures for adolescents who stutter.

Method: The online survey was completed by a national sample of 173 adolescents who stutter between the ages of 13 and 21 years. The multipart survey included a Stage of Change scale, Decisional Balance scale, and Situational Self-Efficacy scale. Participants also completed the Overall Assessment of the Speaker's Experience of Stuttering (OASES), either the teenage or adult version depending on the participant's age, so preliminary construct validity of the new scales could be examined. Exploratory factor analyses were conducted to determine model fit and reduce the scales

to the most meaningful items. External validity of the three-part survey was examined by comparing OASES scores across stage of change as well as evaluating the functional relations between the three scales.

Results: Adolescents' readiness to manage stuttering could be clearly described with five discrete stages, although most of the respondents reported being in the Maintenance stage. The pros of managing stuttering reliably predicted stage placement. Internal consistency of the scales ranged from good to excellent. OASES scores differed across stages of readiness in complex but predictable ways.

Conclusions: These findings suggest that the Transtheoretical Model fits the target behaviors involved in stuttering management among adolescents. Further examination of the application of the model to validate a stage-based framework for change among individuals who stutter is warranted.

Adolescent stuttering therapy is a unique clinical challenge for many clinicians. Anecdotally, adolescents are often deemed "unmotivated" to change due to low levels of engagement during therapy sessions and limited carryover of new skills outside the therapy room. This is compounded by the fact that many adolescents are encouraged to attend therapy at the behest of their parents

and/or teachers (Hearne et al., 2008), and to engage in new and unfamiliar communication behaviors by their clinicians and/or parents, both of which are at odds with their increasing desire for independence from adults (Shirk & Karver, 2003). Furthermore, some adolescents may have experienced substandard therapy in the past that can impinge their desire to engage in therapy in the future. How can clinicians honor adolescents' growing autonomy and support their use of new communication and social-emotional skills when the client appears reluctant to change, knowing that the clinician who pushes their agenda too hard will likely encounter even greater resistance (Manning & DiLollo, 2007)? One possible approach is to assess the client's readiness to manage stuttering and then tailor interventions to wherever they are along the readiness continuum. This approach is inspired by the Transtheoretical Model, of which application to the field of stuttering is in its infancy (Floyd et al., 2007). The current article is the second in a two-part series

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documenting the application of the Transtheoretical Model to stuttering management among adolescents.

In our prequel companion article, we discussed the theoretical framework of the Transtheoretical Model and our rationale for applying it to understanding the process of making positive changes to stuttering among adolescents. This model conceptualizes intentional behavior change as progression through a series of stages of readiness to make the change. It has been applied to dozens of target behaviors among adolescent and adult populations such as increased exercise (Berry et al., 2005; De Bourdeaudhuij et al., 2005), condom use (Grossman et al., 2008; Prat et al., 2011), blood and organ donation (Burditt et al., 2009; Hall et al., 2007), depression prevention (Levesque et al., 2011), and pain management (Fors et al., 2010). There have been preliminary applications of the Transtheoretical Model to communication disorders, but those works have been small-scale empirical studies (Floyd et al., 2007) or theoretical applications (Babeu et al., 2004; Manning, 2010; Turnbull, 2000; van Leer et al., 2008). In the current two-article series, we document the iterative process of applying the Transtheoretical Model to stuttering management among adolescents with the goal of providing clinicians a clinical tool for measuring their adolescent clients' readiness to manage stuttering in order to maximize therapeutic outcomes. In the first article, we described how we developed Transtheoretical measures including a Stage of Change (SOC) scale, Decisional Balance (DB) scale, and Situational Self-Efficacy (SSE) scale. In the current article, we detail the process of exploring the validity of these measures with a large national sample of adolescents who stutter.

Overview of the Transtheoretical Model

The Transtheoretical Model of intentional behavior change was developed in the fields of behavioral health and health psychology in the 1980s as a framework for understanding how people make lasting behavior changes and how stage-matched interventions can promote durable change (e.g., McConaughy et al., 1989; Prochaska & DiClemente, 1984). This model conceptualizes behavior change as a nonlinear progression through a series of five stages of readiness to change the target behavior or learn a new skill. There are specific cognitive processes that have been shown to reliably predict how ready the person is to change: DB and SSE.

SOC

The core construct of the Transtheoretical Model is the temporal dimension of change readiness, which exists on a five-stage continuum: Precontemplation, Contemplation, Preparation, Action, and Maintenance (Prochaska et al., 1992). Individuals in the *Precontemplation* stage are not planning to change in the foreseeable future typically because they are unaware or in denial of the issue, uninformed about alternative behaviors, and overestimate the costs and underestimate the benefits of change. In the *Contemplation* stage, people are considering changing the behavior in the

foreseeable future (typically within 6 months), although they are usually ambivalent about changing and lack confidence in their ability to do so. Individuals in the *Preparation* stage are planning to change in the immediate future (typically within 1 month) and have taken some initial steps towards their goal. In the *Action* stage, people are actively engaged in the new target behavior and they typically stay in this stage for about 6 months. Individuals in the *Maintenance* stage are working on solidifying the new behavior and resisting relapse, which can last anywhere upwards of 6 months. These five stages of change can be assessed using a classification schema where respondents assign themselves to one of the five stages based on their attitudes and behaviors regarding the target behavior. Such SOC scales have been developed and validated among dozens of target behaviors.

DB

DB is one of the cognitive processes known to predict stage placement. It is the decision-making process of weighing the anticipated gains and losses of making a change. It is one way that individuals resolve internal conflict regarding whether or not to make a change. Simply put, if an individual believes that the anticipated gains of making a change outweigh the anticipated losses, then they will likely choose *to* make a change. On the other hand, if they believe that the anticipated losses outweigh the anticipated gains, then they will likely choose *not* to make a change. There is a substantial evidence base that supports the utility of a DB scale in predicting a person's readiness to change (Hall & Rossi, 2008; Mauriello et al., 2007; Redding et al., 2015). These DB scales are composed of two factors: pros and cons of the target behavior. In their meta-analysis of the predictive strength of the pros and cons, Hall and Rossi (2008) reported that individuals in Precontemplation believe the cons of the new behavior outweigh the pros, while those in Action and Maintenance believe the pros of the new behavior outweigh the cons. Between Contemplation and Preparation, there is a characteristic crossover where the cons of the new behavior drop in importance and the pros rise.

SSE

SSE is another cognitive process known to predict stage placement. Within the Transtheoretical framework, SSE is the confidence one has in their ability to sustain the new target behavior in the face of challenge or setback (Velicer et al., 1990). Across target behaviors, SSE has been shown to be relatively low in earlier stages of Precontemplation and Contemplation, and increases as the individual progresses through the stages (Hall & Rossi, 2008). It is also a reliable predictor of relapse in the earlier stages (DiClemente et al., 1985).

Overview of the Prequel Companion Article

In the first article of this two-article series, we documented our process of developing the SOC scale, DB scale, and SSE scale for adolescents who stutter. We began by

interviewing adolescents who stutter and speech-language pathologists who specialize in stuttering intervention. During those key informant interviews and focus groups, we asked targeted questions regarding the specific behaviors of stuttering management, the pros and cons of managing stuttering, and specific situations in which it is challenging for adolescents to manage stuttering. Those interviews were transcribed and qualitatively analyzed to develop items for each of the SOC, DB, and SSE scales, respectively. Those drafted scales were cognitively tested with nine adolescents who stutter to ensure clarity and thoroughness of the instructions and items. The resulting Transtheoretical measures included an SOC scale with four items, a DB scale with 62 items (35 pros and 27 cons) and an SSE scale with 39 items (see our prequel companion article for a detailed description of scale development: Zebrowski et al.'s *Applying the Transtheoretical Model to Stuttering Management among Adolescents: Part I. Scale Development*). In the current article, we report on the results of administering these three drafted scales to a large sample of adolescents who stutter. Across both articles, we included adolescents who were between the ages of 13 and 21 years. This expanded age range for adolescence is supported by recent evidence regarding the protracted neurobiological development that continues to unfold well into one's 20s (Galván, 2017; Guyer et al., 2016; Sawyer et al., 2018).

Purpose

The purpose of this part of the study was to explore the validity of Transtheoretical measures to evaluate readiness to change among adolescents who stutter. To test model fit, we administered the measures to a large national sample of adolescents who stutter and analyzed the responses and relations among them. Specifically, we evaluated the extent to which the SOC scale yielded discrete stage placement for adolescents' readiness to manage stuttering, as well as whether the DB and SSE scales predicted stage placement. We then evaluated the construct validity of the survey by examining how scores on the Overall Assessment of the Speaker's Experience of Stuttering (OASES; Yaruss & Quesal, 2010) varied across stages of readiness to manage stuttering (i.e., responses on the SOC scale).

Method

All procedures were approved by the institutional review board at The University of Iowa (ID# 201309814).

Participants

Adolescents who stutter between the ages of 13 and 21 years living in the United States were recruited to complete the online survey. Recruitment materials were emailed to clinical populations affiliated with local clinics, FRIENDS (the National Association of Young People Who Stutter), board-recognized fluency specialists available from the American Board of Fluency and Fluency Disorders

online referral list, and self-identified stuttering specialists available on the Stuttering Foundation of America online referral list. Those contacts were asked to pass along the recruitment e-mail, which included the link to the Qualtrics survey, to adolescents who stutter that they knew. As such, stuttering diagnosis was confirmed by proxy of who received the survey information.

A total of 285 people opened the survey. Of these, a total of 173 surveys were viable for analysis (168 were 100% complete and five were between 70% and 99% complete). The breakdown of surveys that were omitted is displayed in Figure 1. Specific demographic information about the 173 respondents is outlined in Table 1. Of these 173 respondents, the male to female ratio was about 2:1. About two thirds of the sample was between 13 and 17 years of age. The sample was racially diverse with about 40% of the sample being non-White. The majority of respondents had a history of attending speech therapy, and almost half were currently in speech therapy.

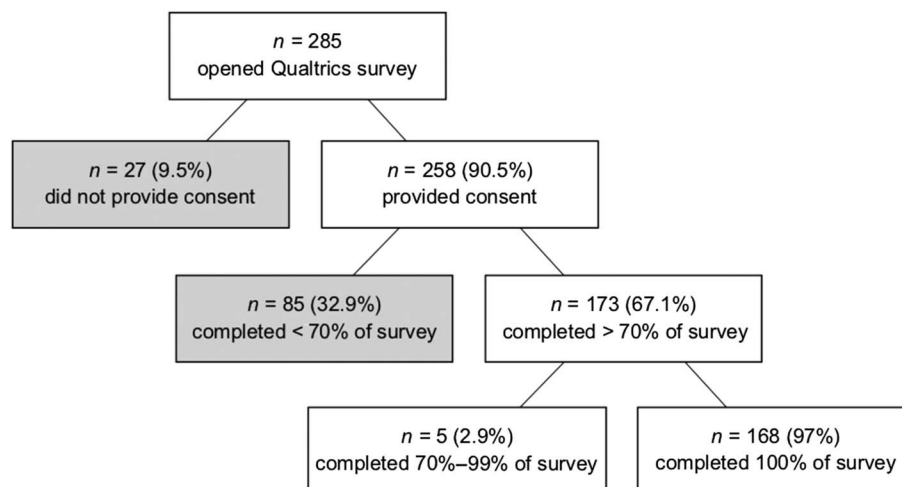
Measures

The online survey included the following components, listed in the order they were completed: informed consent, demographics questionnaire, SOC scale, DB scale, SSE scale, and the OASES (Yaruss & Quesal, 2010). The OASES was included to evaluate the construct validity of our scales. The teen (OASES-T) and adult (OASES-A) versions of the OASES were both employed in this study, with the correct form being displayed to participants depending on their self-reported age at the time of survey completion (13- to 17-year-olds received the OASES-T; 18- to 21-year-olds received the OASES-A).

The full survey was administered via Qualtrics—a secure, online data collection platform—and took approximately 30 to 45 min for participants to complete. The scales can be found in Appendices A, B, and C in the companion article, which include four items on the SOC scale, 62 items on the DB scale, and 39 items on the SSE scale.

For the SOC scale, participants were asked to consider how ready they are to manage their stuttering overall, and how ready they are to address each of the three sub-components of stuttering management including readiness to (a) learn and use speech strategies for talking more fluently or stuttering with less tension, (b) change their negative thoughts and feelings about stuttering, and (c) talking without avoiding sounds, words, or situations. For each of these items, participants responded by “staging” themselves in one of five stages of readiness:

- I am not thinking about doing this in the next 6 months (*Precontemplation*);
- I am thinking about doing this in the next 6 months (*Contemplation*);
- I am planning on doing this in the next month (*Preparation*);
- I have been doing this for LESS than 6 months (*Action*); or

Figure 1. Flowchart identifying completed surveys that were viable for analysis. Shaded boxes were surveys excluded from analysis.

- I have been doing this for MORE than 6 months (*Maintenance*).

Participants selected one of these five statements that best reflected how ready they were to manage stuttering right now. In this way, these five stages were used as a classification schema based on respondents' attitudes and behaviors regarding managing stuttering.

For the DB scale, participants read through 62 statements of pros and cons of managing stuttering. Sample pros included "You would feel like a successful communicator," "You would worry less about talking," "You would have more career choices," and "You would be treated like everyone else." Sample cons included "You would have to work hard

to change," "You would feel like a failure if change didn't happen," "You would have more responsibility to talk more once talking became easier," and "your speech would sound and feel weird and unnatural to you." They rated how important each statement was in their decision to manage stuttering at that point in time on a 5-point Likert scale, where 1 = *not at all important* and 5 = *extremely important*.

For the SSE scale, participants read through 39 statements representing situations in which it is challenging to manage stuttering. Sample items included "reading out loud in class," "telling a joke," "introducing yourself," "you are around people who do not know that you stutter," and "you have to stand up for yourself." They rated how sure they are that they can manage stuttering in each situation on a 5-point Likert scale, where 1 = *not at all sure* and 5 = *the most sure*.

The OASES-T contains 80 items, and the OASES-A contains 100 items, across four sections: Section I on general information about their stuttering, Section II on their reactions to stuttering, Section III on how hard communication is in daily situations, and Section IV on the effect of stuttering on their quality of life. Impact scores for each section, as well as an overall total impact score, were calculated by averaging items in the respective sections.

The collected data were anonymous. Upon completion of the full survey, participants were prompted to click on a link to take them to an external website to provide their contact information to receive a \$10 gift card reimbursement. Their contact information was not associated with their survey responses.

Data Analysis

Stages of Readiness to Manage Stuttering

Descriptive analyses were conducted to examine the proportion of respondents in each stage of readiness to manage stuttering. Recall that for the SOC scale, respondents

Table 1. Demographic information for survey respondents.

Demographic		Percent of Sample
Sex	Male	60.7
	Female	31.2
	Other	1.2
Age	13–17 years	67.6
	18–21 years	25.4
Race	American Indian/Alaska Native	1.7
	Asian/Other Pacific Islander	2.3
	Black	8.1
	Hispanic	8.7
	White	59.5
	Multiracial/Other	19.7
History of speech therapy	Yes	88.4
	No	4.6
Currently in speech therapy	Yes	46.2
	No	36.4

Note. Some percentages will not sum 100% due to missing data (respondents who skipped that question).

indicated their readiness to manage stuttering 4 times: once for their overall readiness to manage stuttering, and then once again for each of the three separate components of stuttering management (i.e., learning and using speech strategies, changing negative thoughts and feelings about stuttering, talking without avoidance). Thus, the respondents “staged” themselves 4 times. In addition to descriptive analysis, the distribution of respondents across the five stages for the four components of stuttering management was used for external validation (see forthcoming section).

Exploratory Factor Analyses of the DB and SSE Scales

Exploratory factor analyses were performed on the completed DB and SSE scales per the processes outlined by Jackson (1971), Comrey (1988), and Redding et al. (2006). These analyses were conducted using principal components analysis with varimax rotation on the item intercorrelation matrices for the DB and SSE scales separately. The number of components retained was based on the minimum average partial procedure (Velicer, 1976) and parallel analysis (Horn, 1965)—two commonly used methods that are regarded as the most accurate approach for determining the number of components to retain (Zwick & Velicer, 1986).

The exploratory factor analyses provided three metrics for analysis. First, they allowed us to identify how many components were present in both the DB and SSE scales and to estimate the correlation between them. Second, they generated estimates of the factor loadings of items in each scale which allowed us to identify complex items ($\geq .40$ on two or more components) and items with poor loadings ($< .40$ on at least one component). Third, the factor analyses provided estimates of the internal consistency for each component using Cronbach's alpha (α). Together with the results of this three-step procedure, the final selection of items for both the DB and SSE scales was determined by considering item clarity, simple expression of the idea, lack of redundancy with other selected items, and quality of representation of the conceptual definitions of the constructs.

External Validation of the SOC, DB, and SSE Scales

We evaluated the external validity of the SOC, DB, and SSE scales in two ways. First, we examined the functional relation between SOC and scores on the OASES (each of the four sections and the overall impact score) using Tukey's tests. This allowed us to evaluate how the distribution of OASES scores across the five stages of readiness to manage stuttering.

Second, we examined the functional relation between participant responses on the SOC, DB, and SSE scales. Multivariate analyses of variance (MANOVAs) were used to examine DB and SSE by stage. Because our operational definition of stuttering management was comprised of three constructs (i.e., learning and using strategies for modifying speech or stuttering, changing negative thoughts and feelings, and talking without avoidance), we were interested in examining readiness to change for global stuttering

management (all three components together) as well as for each of the three components separately. Therefore, we analyzed the relationship between participant responses on both the DB and SSE scales and SOC for stuttering management as a whole, and for each of the three components that comprise the global definition. As is common practice in applying the Transtheoretical model to new populations, these relationships were then compared to general relationships observed among other populations for whom the Transtheoretical model has been applied.

Results

In this section, we will describe results from the SOC, DB, and SSE scales, respectively. First, we provide the distribution of respondents across the five stages according to the SOC scale results. We then examine the external validity of the SOC scale by analyzing the relationship between OASES scores across the five stages of readiness to manage stuttering (globally, as well as each of the three separate components of stuttering management). Second, we provide the results of the exploratory factor analysis of the DB scale. We then examine the external validity of the DB scale by analyzing how the pros and cons differ across the five stages of readiness to manage stuttering (globally, as well as each of the three separate components of stuttering management). Third, we provide the results of the exploratory factor analysis of the SSE scale. We examine the external validity of the SSE scale by analyzing how one's confidence in managing stuttering differs across the five stages of readiness to manage stuttering (globally, as well as each of the three separate components of stuttering management).

SOC Scale

Descriptive Analysis of Stages

Twelve of the total sample of participants ($n = 173$) did not respond to the first item regarding readiness for global stuttering management. The distribution of staging for the remaining 161 participants for the global construct of stuttering management was as follows: 5.6% were in Precontemplation, 11.2% were in Contemplation, 11.2% were in Preparation, 14.3% were in Action, and 57.8% were in Maintenance.

Eleven participants did not respond to the other three SOC items regarding readiness to address the three specific components of stuttering management. The distribution of staging for the 162 participants across the three specific behaviors of stuttering management (using strategies to modify speech or stuttering, changing negative thoughts and feelings, and talking without avoidance) was as follows: between 8.0% and 13.0% were in Precontemplation, between 13.0% and 13.6% were in Contemplation, between 15.4% and 19.1% were in Preparation, between 11.1% and 16.7% were in Action, and between 40.7% and 47.5% were in Maintenance. The distribution of respondents across the five

stages for each of the four SOC items is shown in Figure 2. The distribution of average age across the four SOC items is provided in Table 2, which shows that age did not significantly differ by stage for any of the four items (all $p > .05$).

External Validation of SOC Scale: How Does Adverse Impact of Stuttering Vary by SOC?

To explore the validity of our scales as they relate to the overall adverse impact that stuttering can have on adolescents, we examined the functional relation between OASES scores across SOC ratings. We conducted ANOVAs to examine the variance of the five OASES scores (i.e., Sections I–IV, overall impact) by each of the four components of stuttering management (i.e., four SOC ratings). The test statistics for significant relationships are presented in Table 3.

Post hoc analyses revealed complex and variable relationships between OASES scores for each stage of readiness to address each of the components of stuttering. The following four subsections describe trends in OASES scores across stages of readiness to address specific components of stuttering management.

Stuttering management: global definition. Overall, respondents who were not thinking about making global changes to their stuttering (i.e., those in Precontemplation) had the lowest and least variable OASES scores, suggesting they experienced the least adverse impact of stuttering across domains. The highest OASES scores were comparable among respondents who were thinking about making global changes to their stuttering in the next 6 months (Contemplation), those planning on making a global change in the next month (Preparation), and those who had been making a global change for less than 1 month (Action), suggesting

that adolescents in these three stages experienced greater adverse impact of stuttering across domains than those in Precontemplation or Maintenance. Respondents who had been making global changes for at least 6 months had the greatest variability in OASES scores. Figure 3 displays the average OASES scores across stages of readiness to make a global change to stuttering. Scores on the OASES range from 1 to 5, with higher scores indicating greater adverse impact.

Stuttering management: learning and using speech strategies. The OASES scores followed a bimodal pattern of distribution across the five stages of readiness to learn and use speech strategies for talking more fluently and/or stuttering with less tension (see Figure 4). All OASES scores were lowest among respondents in Maintenance, suggesting that those who had been using speech strategies for longer than 6 months experienced the least adverse impact of stuttering across all OASES subscales. Respondents who were thinking about learning and using strategies in the next 6 months (Contemplation) and those who were actively using speech strategies for less than 6 months (Action) reported the highest OASES scores, suggesting that they experienced more adverse impact of stuttering as compared to respondents in the other stages.

Stuttering management: changing negative thoughts and feelings. Generally, OASES scores followed a reverse U-shaped pattern across the five stages of readiness to change negative thoughts and feelings about stuttering (see Figure 5). Scores were lowest for respondents in precontemplation and Maintenance, suggesting the adolescents who were not thinking about changing their negative thoughts and feelings about stuttering, and those who had already been working on changing their thoughts and feelings for at least 6 months, had the least adverse impact of

Figure 2. Distribution of respondents across stages according to their responses on the Stage of Change scale.

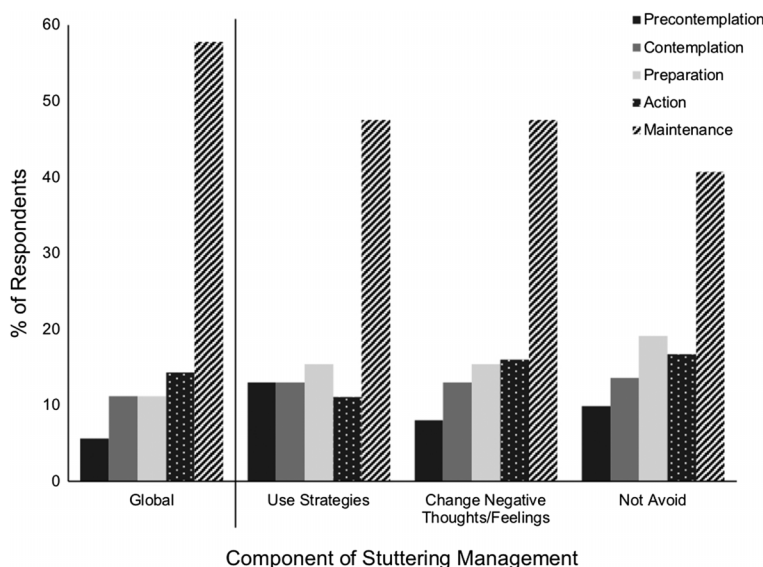


Table 2. Average age (*SD*) of respondents across the stages of change for global stuttering management and the three components of stuttering management.

Component	Stage of change					Test statistic
	Precontemplation	Contemplation	Preparation	Action	Maintenance	
Global stuttering management	14.63 (1.7)	16.29 (2.7)	16.76 (2.3)	16.26 (2.1)	16.14 (2.5)	$F(4, 148) = 1.15$, $p = .34$, $\eta^2 = .03$
Learning and using speech strategies	15.95 (2.7)	16.95 (2.8)	15.58 (1.7)	17.00 (2.1)	15.97 (2.4)	$F(4, 148) = 1.40$, $p = .24$, $\eta^2 = .04$
Changing negative thoughts and feelings	14.91 (2.0)	16.37 (2.5)	16.83 (2.6)	16.96 (2.4)	15.80 (2.3)	$F(4, 148) = 1.94$, $p = .11$, $\eta^2 = .05$
Talking with avoidance	15.15 (2.1)	16.10 (2.4)	16.97 (2.5)	15.85 (2.3)	16.11 (2.4)	$F(4, 148) = 1.94$, $p = .19$, $\eta^2 = .04$

stuttering across domains. OASES scores were comparably higher for respondents in Contemplation, Preparation, and Action, with the peak of the curve at Preparation, suggesting that adolescents who were planning on changing their negative thoughts and feelings about stuttering in the next month experienced the most adverse impact of stuttering across domains.

Stuttering management: speaking without avoidance. Overall, respondents in Maintenance had the lowest OASES scores, suggesting that adolescents who had been speaking without avoidance for longer than 6 months had experienced the least adverse impact of stuttering. As seen in Figure 6, OASES scores were fairly level across Precontemplation, Contemplation, and Preparation stages, indicating that adolescents in these first three stages experienced greater adverse impact than those in Action and Maintenance, and scores began to decline in Action.

DB Scale

Exploratory Factor Analysis to Reduce the DB Scale

The pool of 62 items was reduced to 16 items. Results of the minimum average partial procedure suggested

a three-component solution, and parallel analysis suggested a two-component solution. Our evaluation of item content indicated that there were clearly two factors with eight items reflecting the pros and eight items reflecting the cons. The third factor did not represent a cohesive, distinct factor, so the two-factor model was retained. For the pros factor, all item loadings ranged from .69 to .85 and internal consistency was excellent ($\alpha = .90$). For the cons factor, all item loadings ranged from .45 to .76 and internal consistency was good ($\alpha = .84$). The two factors accounted for 53.51% of the total item variance. Table 4 displays the exploratory factor loadings for each item, and Appendix B provides the final shortened DB scale of 16 items (including eight pros and eight cons) that can be used clinically.

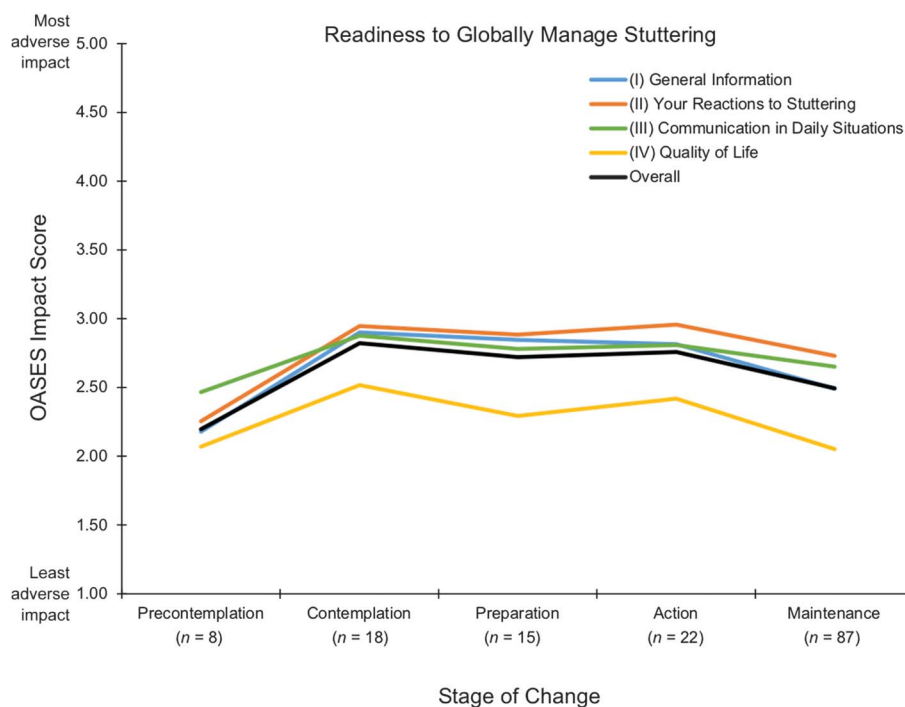
External Validation of DB Scale: How Does the Importance of the Pros and Cons of Managing Stuttering Vary by Stage?

Stuttering management: global definition. Results of the MANOVA revealed that respondents in different stages of readiness to globally manage stuttering differed significantly in their ratings of the importance of the pros of

Table 3. Relationship between component of stuttering management and OASES scores.

Component	OASES				
	Section I General information about stuttering	Section II Reactions to stuttering	Section III Communication in daily situations	Section IV Quality of life	Overall impact
Global	$F(4, 145) = 4.64$, $p < .01$, $\eta^2 = .11$	ns	ns	ns	$F(4, 145) = 2.54$, $p < .05$, $\eta^2 = .06$
Learning and using speech strategies	$F(4, 146) = 8.29$, $p < .001$, $\eta^2 = .18$	ns	$F(4, 145) = 3.21$, $p < .05$, $\eta^2 = .08$	$F(4, 145) = 5.00$, $p < .01$, $\eta^2 = .12$	$F(4, 146) = 4.79$, $p < .01$, $\eta^2 = .11$
Changing negative thoughts and feelings	$F(4, 145) = 6.71$, $p < .001$, $\eta^2 = .16$	$F(4, 144) = 5.12$, $p < .01$, $\eta^2 = .13$	$F(4, 144) = 3.32$, $p < .05$, $\eta^2 = .08$	$F(4, 144) = 10.63$, $p < .001$, $\eta^2 = .23$	$F(4, 145) = 9.19$, $p < .001$, $\eta^2 = .20$
Talking without avoidance	$F(4, 146) = 4.59$, $p < .01$, $\eta^2 = .11$	$F(4, 145) = 3.37$, $p < .05$, $\eta^2 = .09$	ns	$F(4, 145) = 3.91$, $p < .01$, $\eta^2 = .10$	$F(4, 146) = 4.46$, $p < .01$, $\eta^2 = .11$

Note. OASES = Overall Assessment of the Speaker's Experience of Stuttering.

Figure 3. Average OASES scores across stages of readiness to globally address stuttering management.

managing stuttering, $F(4, 142) = 3.19, p < .05, \eta^2 = .08$. Post hoc analyses indicated that pros ratings were significantly lower in Precontemplation than they were in any of the four other stages. The cons of managing stuttering did not differ significantly across stages.

Stuttering management: learning and using speech strategies. There were no significant differences in DB ratings across stage of readiness to use speech strategies for speaking more fluently and/or stuttering with less struggle, $F(8, 284) = .94, p > .05, \eta^2 = .03$.

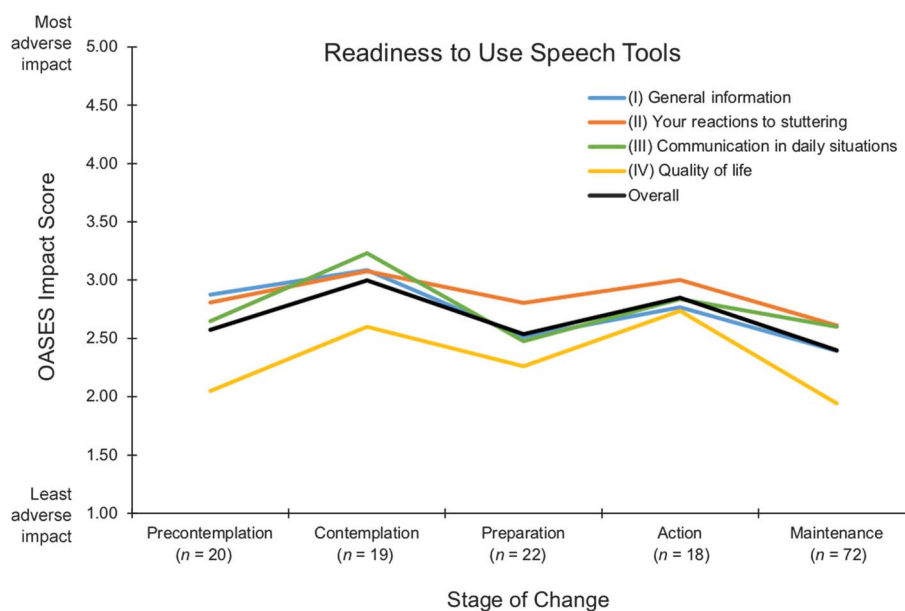
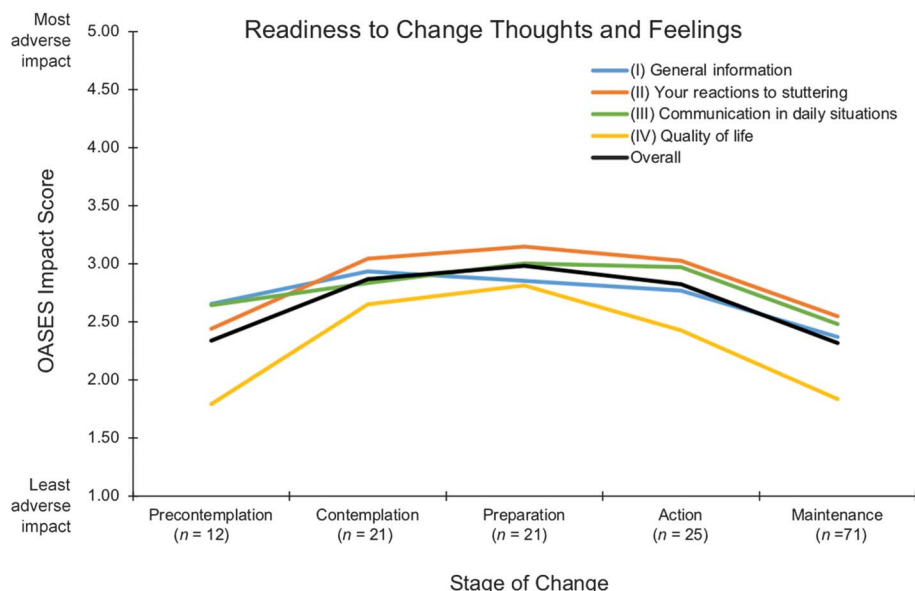
Figure 4. Average Overall Assessment of the Speaker's Experience of Stuttering (OASES) scores across stages of readiness to learn and use speech strategies to modify speech or stuttering.

Figure 5. Average Overall Assessment of the Speaker's Experience of Stuttering (OASES) scores across stages of readiness to change negative thoughts and feelings about stuttering.



Stuttering management: changing negative thoughts and feelings. Respondents in different stages of readiness to change negative thoughts and feelings about stuttering differed significantly in the weight they assigned to the importance of the pros and cons of managing stuttering, $F(4, 142) = 5.62, p < .01, \eta^2 = .13$, and $F(4, 142) = 3.21, p < .05, \eta^2 = .08$, respectively). Post hoc analyses indicated

that respondents in Precontemplation rated the pros significantly lower than respondents in Contemplation, Preparation, or Action (i.e., they were less personally important). Interestingly, and unexpectedly, respondents in Precontemplation also rated the cons significantly lower than those who were in either Contemplation or Preparation. In other words, adolescents who were not thinking about changing

Figure 6. Average Overall Assessment of the Speaker's Experience of Stuttering (OASES) scores across stages of readiness to talk without avoidance.

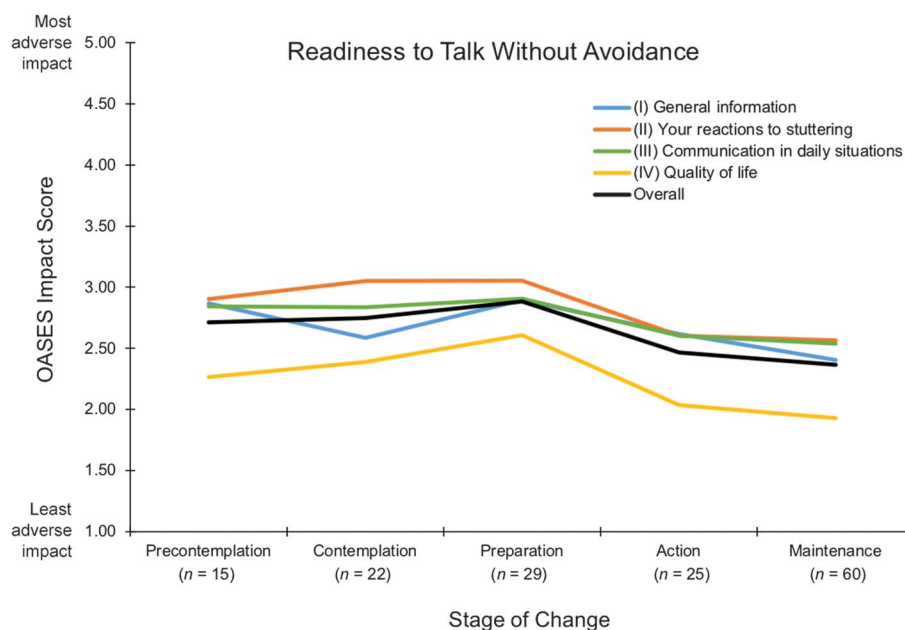


Table 4. Exploratory factor loadings for Decisional Balance scale items including the pros and cons of managing stuttering.

Items	Factor 1 loading	Factor 2 loading
You would feel better about yourself	.85	.05
You would talk more	.81	.18
You would feel calmer	.77	.17
You could just be yourself	.76	.16
You would feel a sense of accomplishment	.74	.11
You would worry less about talking	.72	-.03
You wouldn't feel like stuttering runs your life	.71	.01
People would treat you just like any other person	.69	.19
Your speech would sound and feel weird and unnatural to you	.11	.76
You would lose part of who you are if you stuttered differently	.11	.76
Other people would disapprove of you trying to change the way you speak	.01	.75
You wouldn't feel like yourself if you stuttered differently	.06	.72
Your speech would sound weird and unnatural to other people	.21	.72
You would be disappointed in yourself if you change the way you speak just to make other people happy	.07	.64
You may miss out on other activities to spend time working on your stuttering	.03	.52
You might not be able to change the way you speak	.35	.45

Note. Bold values represent primary factor loadings.

their thoughts and feelings about stuttering in the foreseeable future judged the pros and cons of managing stuttering as both being fairly unimportant.

Stuttering management: speaking without avoidance. Respondents in different stages of readiness to say what they want to say without avoiding sounds, words, or situations differed significantly in their ratings of the importance of the pros of talking without avoiding, $F(4, 143) = 3.11, p < .05, \eta^2 = .08$. Results showed that respondents in Precontemplation rated the pros of doing so significantly lower than those participants in either Contemplation or Preparation. The cons of speaking without avoidance were not significantly different across stages of readiness to talk without avoidance.

Mean ratings for the pros and cons by stage across these four components of stuttering management are displayed in Table 5. That is, the ratings for pros were summed and averaged for participants in a given stage, as were the

ratings for the cons. As such, these sums reflect the summative importance of the pros and cons that participants reported. These were the values that were included in the statistical models.

SE Scale

Exploratory Factor Analysis to Reduce the SSE Scale

The pool of 39 items was reduced to 11 items. Both the minimum average partial procedure and parallel analysis indicated a one-component solution best described the data. Factor loadings for all items ranged from .69–.86. The resulting scale had excellent internal consistency ($\alpha = .92$) and accounted for 55.91% of the total item variance. Table 6 displays the exploratory factor loadings for each item, and Appendix C provides the final shortened SSE scale of 11 items that can be used clinically.

Table 5. Sum of Decisional Balance and Situational Self-Efficacy scale ratings by stage of change.

Component	Scale	Stage of Change				
		Precontemplation	Contemplation	Preparation	Action	Maintenance
Global	Pros	41.32	50.16	51.66	54.95	51.86
	Cons	48.49	52.26	48.46	50.26	50.39
	Self-efficacy	52.15	52.15	48.25	47.57	50.05
Learning and using speech strategies	Pros	47.55	50.21	52.78	54.25	51.34
	Cons	48.07	51.93	52.64	48.14	50.42
	Self-efficacy	45.99	49.00	51.78	50.17	50.38
Changing negative thoughts and feelings	Pros	42.25	52.17	57.18	52.92	50.16
	Cons	45.86	53.37	54.89	50.78	48.81
	Self-efficacy	48.58	48.49	53.76	46.11	50.67
Talking without avoidance	Pros	45.37	55.60	53.94	50.00	50.41
	Cons	48.78	52.34	50.53	49.26	50.51
	Self-efficacy	47.19	48.37	50.83	48.68	51.01

Note. Pros and cons were derived from the respective items on the Decisional Balance scale.

Table 6. Exploratory factor loadings for the Situational Self-Efficacy scale items.

Item	Factor loading
You are talking in front of a group of people	.86
You are talking to a teacher	.78
You are ordering in a restaurant	.77
You are being interviewed for a job	.76
You are telling a story	.75
You are meeting new people	.74
You are introducing yourself	.74
It is a hard talking day	.71
You are feeling stressed out	.70
You are calling someone on the phone	.70
You are afraid you are going to stutter	.69

External Validation of SSE Scale: How Does Confidence in Managing Stuttering in Challenging Situations Vary by Stage?

Stuttering management: global definition. Confidence in one's ability to manage stuttering in challenging situations did not differ significantly across stages of readiness to globally manage stuttering, $F(4, 146) = .93, p > .05, \eta^2 = .03$.

Stuttering management: learning and using speech strategies. Confidence in one's ability to manage stuttering in challenging situations did not differ significantly across stages of readiness to learn and use strategies for speaking more fluently or stuttering with less tension, $F(4, 147) = 1.36, p > .05, \eta^2 = .04$.

Stuttering management: changing negative thoughts and feelings. Confidence in one's ability to manage stuttering in challenging speaking situations differed significantly across stages of readiness of change negative thoughts and feelings about stuttering, $F(4, 146) = 2.54, p < .05, \eta^2 = .07$. Post hoc analyses indicated that self-efficacy ratings were highest in Preparation, indicating that respondents were the most confident they could manage stuttering across a range of difficult speaking situations when they were planning to change negative thoughts and feelings about stuttering in the immediate future.

Stuttering management: talking without avoidance. Confidence in one's ability to manage stuttering in challenging situations did not differ significantly across stages of readiness to talk without avoiding sounds, words, or situations, $F(4, 147) = .94, p > .05, \eta^2 = .03$.

Mean confidence ratings by SOC across these four components of stuttering management are displayed in Table 5. That is, the ratings for situational self-efficacy (i.e., confidence) were summed and averaged for participants in a given stage. As such, these sums reflect the summative situational confidence that participants reported. These were the values that were included in the statistical models.

Discussion

The purpose of this study was to explore the validity of newly developed Transtheoretical measures to evaluate

adolescents' readiness to manage stuttering. The first main finding was that adolescents' readiness to manage stuttering could be clearly described with each of the five stages of change. This provides promising evidence that, consistent with behavior change among other populations, stuttering management can be conceived as a stage-based process for adolescents. The second main finding was that pros and cons of managing certain aspects of stuttering (as measured by the DB scale) and the confidence an adolescent has in managing certain aspects of stuttering in challenging situations (as measured by the SSE scale) predicted stage placement similarly to how those scales predict stage placement in other populations. The third main finding was that OASES scores reliably differed across stages of readiness to manage different aspects of stuttering, suggesting promising construct validity of the new SOC survey. Following, we discuss the relevance and implications of these primary findings. As we discuss these findings, particularly how the cognitive processes of DB and SSE predicted stage placement and OASES scores differed across stages, it is important to remember that these data were cross-sectional and do not represent how individuals move through the stages of readiness over time.

Five Stages of Readiness to Manage Stuttering

One of the most critical findings was that adolescents' readiness to manage stuttering could be clearly described with five discrete stages of change: Precontemplation, Contemplation, Preparation, Action, and Maintenance. This was the case when participants considered the global management of stuttering, as well as its three components: learning to use speech strategies to modify speech or stuttering, changing negative thoughts and feelings about stuttering, and talking without avoidance. However, most participants rated themselves as being in the Maintenance stage across the four staging items. It is also important to note that adolescents' readiness to change can differ across the components of stuttering management, as can be seen by the varying percentage of adolescents across the four SOC items; if readiness to change was the same across all components, then the distribution of participants across the five stages would be identical across components. This speaks to the importance of talking to adolescents about the different ways that they can make positive changes to stuttering rather than approaching stuttering management as a unidimensional behavior. By discussing each component separately, clinicians may find that their adolescent clients have a more nuanced perspective of what they are ready to address in therapy.

Overall, it is likely that most participants staged themselves in Maintenance for all aspects of stuttering management because they were primarily recruited through speech-language pathologists and stuttering support communities, which means that most had received, or were currently receiving, professional help or support for stuttering. This resulted in a cohort of adolescents who stutter who were disproportionately in Maintenance, thus skewing the distribution of participants across the five stages. As a result,

the responses of those in Maintenance likely more weight than those in other stages that were less represented in this sample. This could have impacted our ability to observe true functional relations among the three scales, as well as the distribution of OASES scores across stages. As such, the relations among these variables should be interpreted with caution. It should be noted, however, that our skewed distribution is not unique to this sample; disproportionately high levels of those in Maintenance has been documented in other target behaviors such as increased exercise (Berry et al., 2005; De Bourdeaudhuij et al., 2005), along with the fact that recruiting individuals who stutter through speech-language pathologists is a common source of sampling bias in stuttering research.

Cognitive Predictors of Stage of Readiness to Manage Stuttering

As previously described, research with other clinical populations has shown that DB and SSE are robust predictors of stage placement for various types of behavior change. Results from the current study revealed a partial replication of these findings for adolescents who stutter. That is, respondents' scores on our DB scale revealed that the importance of the pros of making change predicted change readiness for the overall construct of stuttering management and for two of its three subcomponents (changing thoughts and feelings, and talking without avoidance), while the importance of the cons predicted only one (changing negative thoughts and feelings). Ratings of SSE predicted only one component of stuttering management (changing negative thoughts and feelings). In summary, only the *changing negative thoughts and feelings about stuttering* component of stuttering management was predicted by the pros and cons of managing stuttering, as well as the confidence one has in managing stuttering in challenging situations. This finding suggests that changing negative thoughts and feelings about stuttering, out of all components of stuttering management, aligns most closely with other target behaviors that the Transtheoretical Model has been applied (e.g., smoking cessation, healthy eating, stress management). As such, compared to other components of stuttering management, there may be several pathways to getting ready to change negative thoughts and feelings about stuttering—ones that focus on the pros, cons, and confidence one has in making the change. Holistic counseling approaches, such as cognitive behavioral therapy (Harley, 2018; Menzies et al., 2008, 2009), could be particularly useful in helping adolescents who stutter get ready to address their thoughts and feelings about stuttering.

Across our analyses, the importance of the pros for making change was the most consistently significant predictor of adolescents' readiness to manage stuttering. This finding, along with previous research showing that increasing the importance of the pros of making a change predicts stage movement (Hall & Rossi, 2008), suggests that helping an adolescent to unpack "the good" and "not so good things" about stuttering management is a fruitful avenue

to explore in the clinical setting. Ideas for how best to do this can be found in the literature on motivational interviewing (e.g., Behrman, 2006; Miller & Rollnick, 2012). In the practice of motivational interviewing, clinicians ask pointed questions that reveal the client's position on what needs to change and why, along with how change can be accomplished. For example, using the final DB scale from this study as a starting point (see Appendix B), the clinician can focus on those "good things about changing stuttering" that the client has rated with a high degree of personal importance and expand the conversation through prompts such as: "What makes you think you need to change?"; "If you make the changes you want to make, how would your life be different from what it is today?"; "Who might support you if you worked to change something about stuttering?"; "How will you know if your plan to change something about stuttering is working?"; and "What will you do if your plan is not working?" Through these conversations, the adolescent has an opportunity to think about and express the meaning that they attach to stuttering and making positive changes to it. The viewpoints and values that they reveal through these conversations then serve as the foundation for selecting therapy goals.

In summary, using the SOC, DB, and SSE scales developed in this study can serve as a springboard for facilitating discussions that can increase adolescents' identification of the importance of both the pros and cons of making change to stuttering while also providing insight about the specific situations in which they feel more and less confident that they can make a positive change to stuttering.

Adverse Impact of Stuttering Varied by Stage of Readiness to Manage Stuttering

There were significant relationships between stage placement (as determined by the four SOC items) and both the type and degree of adverse impact (as determined by the impact scores on the OASES). These results paint a complex picture of the interaction between readiness to change specific features of the experience of stuttering and the adverse impact that stuttering has on one's life. In general, OASES scores were lower for adolescents in Precontemplation and Maintenance, and higher for adolescents in Contemplation, Preparation, and Action. In other words, adolescents who were not thinking about managing stuttering in the foreseeable future, and those that had already been managing stuttering for some time, were least impacted by stuttering. Adolescents who were thinking about, planning to start, and actively managing stuttering tended to be more impacted by stuttering. This finding corroborates a common experience among many individuals who stutter: the process of changing the experience of stuttering is hard. However, it is important to note that, generally, the mean OASES scores in this sample never rose above the moderate level. This is somewhat expected given these were group means, and could also be related to the fact these adolescents had previously received,

or were currently receiving, support from a speech-language pathologist and/or stuttering support community thus minimizing the adverse impact of stuttering on their life.

One of the hallmarks of the Precontemplation stage is resistance to recognizing or changing a problem. Individuals in Precontemplation may be un- or underinformed about the complexities of the issue, or they may have been unsuccessful in previous attempts to manage stuttering and now perceive change to not be possible. Across a variety of target behaviors, precontemplators tend to process less information about their issue, devote less time to introspection about it, and experience fewer emotional reactions to the negative aspects of the problem (Prochaska et al., 1992). Our OASES analysis suggests that adolescents who are in Precontemplation fit the general description of individuals in this stage; that is, they do not believe that stuttering is a problem in their lives and therefore are not negatively impacted by it. Alternatively, they may be denying that stuttering is an issue for them for a variety of reasons.

On the other end of the readiness continuum, individuals in Maintenance have already worked on making positive changes for a period of time, and their efforts are now focused on continuing and stabilizing those changes. For those adolescents, the difficult work of making a change to stuttering appears to be “worth it” as the lessening adverse impact of stuttering on the client’s life offers a tangible benefit. Adolescents who stutter who are in Maintenance have most likely already worked with at least one speech-language pathologist who, if abiding by best practice recommendations, have helped reduce the negative impact of stuttering on their life (American Speech-Language-Hearing Association, n.d.). Together, it is understandable that adolescents who are in the Precontemplation or Maintenance stages report *less* adverse impact of stuttering than those who are closer to, or in the midst of, actively making changes (i.e., those in Contemplation, Preparation, or Action, respectively). Overall, the significant relationships between OASES scores and stages of readiness speak to the external validity of applying the SOC model to stuttering management among adolescents.

Because most of the respondents in this study were in Maintenance, it is important to make an additional note about this stage. The Maintenance stage is not an *absence* of change; it is a continuation of the change they have already worked on. Because the Maintenance stage is viewed as quite active (Prochaska et al., 1992), individuals in Maintenance are still susceptible to relapse, or regression of their new skills. From the Transtheoretical lens, relapse is viewed as “recycling” as the individual regresses to a previous stage and cycles through the stages again (Prochaska et al., 1992). Individuals can recycle through the stages several times before achieving long-term maintenance, yet with each recycle, they move through the stages quicker and the change is more durable. This is likely to happen with stuttering since it is a chronic issue that is also characterized by a great deal of variability. As a result, the negative impact that stuttering has on their life (as could be measured on the OASES) may also fluctuate over time.

Limitations and Future Directions

There are several limitations of this study that impact the generalizability of our findings. The first issue is the skewed distribution of adolescents across the stages, such that most participants were in the Maintenance stage. This reflects broader challenges in stuttering research related to sampling bias in that participants are often recruited through speech pathology clinics and self-help organizations, and participants without connections to these entities are difficult to access. As much as possible, future studies of applying the Transtheoretical Model to individuals who stutter should strive for more equal representation of participants across the five stages so that those functional relations are better supported. To do so, researchers should prioritize recruiting individuals who stutter from the broader community to include those who are not affiliated with a speech-language pathologist and thus have no or limited experience with speech therapy.

Related to the issue above, of the cognitive processes that typically predict stage placement in other populations (pros, cons, and self-efficacy), only the *pros* of managing stuttering reliably predicted stage placement in the current sample. Recall that participants “staged” themselves 4 times for stuttering management: (a) their readiness to globally manage stuttering, (b) their readiness to learn and use strategies for modifying speech or stuttering, (c) their readiness to change negative thoughts and feelings about stuttering, and (d) their readiness to talk without avoidance. The pros scale reliably predicted stage placement for components one, three, and four. Readiness to address component three was the only one that was reliably predicted by all cognitive processes (pros, cons, and self-efficacy). This outcome is possibly a result of the skewed distribution of stages in this sample (as described in the previous paragraph). In typical applications of the Transtheoretical Model, individuals in earlier stages tend to weigh the cons as more important than the pros, while individuals in later stages tend to weigh the pros as more important than the cons. Because most participants in this study were in Maintenance, it is likely the pros had a stronger effect than the cons because of the number of participants who endorsed them. Another possibility is that the cons and self-efficacy items were not as relevant as the pros items for this cohort. Overall, this result suggests that further development and clarification of the staging, cons, and self-efficacy items is warranted.

A third issue related to the recruited sample is that we only had adequate statistical power to conduct exploratory factor analyses. Exploratory factor analysis is a common first step in scale development. Based on previous applications of the Transtheoretical Model to other populations, we had a general idea about what we expected to find, and the exploratory factor analyses allowed us to take the first step at applying the model to this new population of adolescents who stutter. An important next step for this line of research is to recruit another large cohort of adolescents who stutter to complete the shortened scales and conduct

confirmatory factor analyses. Results of confirmatory factor analyses would allow us to further investigate the applicability of the Transtheoretical Model to the population of adolescents who stutter.

Future investigations can continue this line of work to achieve two objectives. First, it would be useful to extend the current work to younger children and adults who stutter to develop a developmental model of change readiness among individuals who stutter across the lifespan. Second, the Transtheoretical measures that were developed in this study (and others developed in the future) can be used as a foundation for developing web-based tailored interventions that are best suited for individuals who stutter at specific stages of readiness. These tailored interventions would apply various *processes of change* to specific stages of change to promote forward movement through the stages. There are ten evidence- and theory-based processes of change, which are cognitive or behavioral activities that have been shown to support stage movement for dozens of target behaviors (see details of these processes of change in Prochaska et al., 1992). Together with the validated Transtheoretical measures and stage-matched processes of change, an interactive web-based application can be built that provides individuals who stutter with information about their stage and specific activities they can do to help increase their readiness to engage in action-oriented behaviors. We propose that engaging in stage-matched processes of change will effectively help people who stutter move toward active engagement in making positive changes to living with stuttering.

Conclusions

The purpose of this study was to explore the application of the Transtheoretical Model to stuttering management among adolescents who stutter. The main findings suggest that the five-stage model of readiness to change does apply to this population, and the importance of the pros of managing stuttering was the most reliable predictor of stage placement. There were also predictable patterns in OASES scores across the five stages of readiness to manage stuttering, speaking to the construct validity of our measures. Overall, these findings support the continued investigation of a stage-based framework for stuttering intervention as a viable pathway to improved long-term change outcomes for adolescents who stutter.

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Appendix A

Final Stages of Change (SOC) Scale

How Ready Are You to Do Something About Stuttering?

The best way for a teen who stutters to do something to help with stuttering is to:

1. Learn and use speech strategies or techniques for speaking more fluently and/or stuttering with less tension and struggle;
2. Change negative thoughts and feelings about stuttering; and
3. Say what you want to say without avoiding sounds, words, or situations.

It's important to pay attention to all three of these things because just focusing on one may not be enough to make long-lasting changes. For any of these things to become automatic, you may need help and regular practice for up to 1 year or more.

Thinking about the three things above all together (learning and using speech strategies, changing negative thoughts, and speaking without avoiding), how ready are you right now to do something about your stuttering? Place a check mark in the box next to the sentence that best describes you right now.

☐	I am not thinking about doing these things in the next 6 months.
☐	I am thinking about doing these things in the next 6 months.
☐	I am planning to do these things in the next months
☐	I have been doing these things for less than 6 months.
☐	I have been doing these things for more than 6 months.

Thinking of these three things separately, one by one...

1. How ready are you right now to get help to learn and use speech techniques for speaking more fluently or stuttering with less tension and struggle?

☐	I am not thinking about doing this in the next 6 months.
☐	I am thinking about doing this in the next 6 months.
☐	I am planning to do this in the next month.
☐	I have been doing this for less than 6 months.
☐	I have been doing this for more than 6 months.

2. How ready are you right now to change your negative thoughts and feelings about stuttering?

☐	I am not thinking about doing this in the next 6 months.
☐	I am thinking about doing this in the next 6 months.
☐	I am planning to do this in the next month.
☐	I have been doing this for less than 6 months.
☐	I have been doing this for more than 6 months.

3. How ready are you right now to say what you want to say without avoiding sounds, words, or situations?

☐	I am not thinking about doing this in the next 6 months.
☐	I am thinking about doing this in the next 6 months.
☐	I am planning to do this in the next month.
☐	I have been doing this for less than 6 months.
☐	I have been doing this for more than 6 months.

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Appendix B

Final Decisional Balance (DB) Scale

Pros and Cons of Doing Something About Stuttering

Please rate how important each of the following things are to you when deciding whether or not to do something about to stuttering.

Your choices:

- 1 = *Not at all important to me*
- 2 = *A little important to me*
- 3 = *Average importance to me*
- 4 = *Very important to me*
- 5 = *The most important to me*

If the statement does not apply to you, you should respond "1 = *Not at all important*"

When thinking about changing your stuttering, how important is it to you if...?

Item	Not at all important	A little important	Average importance	Very important	Most important
1 You wouldn't feel like stuttering runs your life	1	2	3	4	5
2 You would worry less about talking	1	2	3	4	5
3 You might not be able to change the way you speak	1	2	3	4	5
4 Other people would disapprove of you trying to change the way you speak	1	2	3	4	5
5 You would feel better about yourself	1	2	3	4	5
6 You could just be yourself	1	2	3	4	5
7 You would lose part of who you are if you stuttered differently	1	2	3	4	5
8 You wouldn't feel like yourself if you stuttered differently	1	2	3	4	5
9 You would feel calmer	1	2	3	4	5
10 You would talk more	1	2	3	4	5
11 People would treat you just like any other person	1	2	3	4	5
12 You would feel a sense of accomplishment	1	2	3	4	5
13 Your speech would sound weird and unnatural to other people	1	2	3	4	5
14 Your speech would sound weird and unnatural to you	1	2	3	4	5
15 You may miss out on other activities to spend time working on your speech	1	2	3	4	5
16 You would be disappointed in yourself if you change the way you speak just to make other people happy	1	2	3	4	5

Appendix C

Final Situational Self-Efficacy (SSE) Scale

Your Confidence in Doing Something About Your Stuttering In Challenging Situations

Please tell us how sure you are that you could do something about your stuttering in the following situations.

Your choices:

- 1 = *Not at all sure*
- 2 = *A little sure*
- 3 = *Moderately sure*
- 4 = *Very sure*
- 5 = *The most sure I can be*

If the statement does not apply to you, you should respond "1 = *Not at all sure*"

How sure are you that you can do something about stuttering when...?

Item	Not at all sure	A little sure	Moderately sure	Very sure	The most sure
1 You are being interviewed for a job	1	2	3	4	5
2 You are meeting new people	1	2	3	4	5
3 It is a hard talking day	1	2	3	4	5
4 You are feeling stressed out	1	2	3	4	5
5 You are afraid you are going to stutter	1	2	3	4	5
6 You are talking in front of a group of people	1	2	3	4	5
7 You are talking to a teacher	1	2	3	4	5
8 You are telling a story	1	2	3	4	5
9 You are introducing yourself	1	2	3	4	5
10 You are calling someone on the phone	1	2	3	4	5
11 You are ordering in a restaurant	1	2	3	4	5