DEVELOPMENT OF MEASURES TO ASSESS CHANGE READINESS AMONG ADOLESCENTS WHO STUTTER

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COLLABORATION & SUPPORT

This project is a collaboration between:
University of Iowa Stuttering Research Lab
University of Rhode Island Cancer Prevention Research Center

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BACKGROUND

- Adolescents who stutter (aWS) pose a unique clinical challenge
  - Noncompliance (perceived as “unmotivated” to be in therapy)
  - Relapse (32-70%) (Craig, 1998)

- Can the Stages of Change Model help us understand aWS’ readiness to manage stuttering? (Floyd, Zebrowski, & Flamme, 2007; Prochaska & DiClemente, 1983)

- Primary Aim: Develop and test the feasibility of new measures to assess the core constructs of aWS’ readiness to manage stuttering

STAGES OF CHANGE MODEL

(Prochaska & DiClemente, 1983)

Stage placement and movement is predicted by:

- DECISIONAL BALANCE: the importance of the pros + cons of changing a behavior
- SELF-EFFICACY: confidence to sustain a behavior in difficult situations

Holl & Rossi (2008); Mauriello et al. (2007)
METHODS: ITERATIVE PROCESS

1. Conduct key informant interviews and focus groups with aWS and stuttering specialists to unpack the construct “stuttering management”

2. Qualitatively analyze transcripts from these interviews to develop scales for:
   i. **Stage of Change** (definition of “stuttering management”)
   ii. **Decisional Balance** (pros and cons of managing stuttering)
   iii. **Self-Efficacy** (situations in which stuttering is difficult to manage)

3. Administer these scales online to 13-21 year olds

4. Perform factor analyses to assess:
   • Goodness-of-fit of Stages of Change model to aWS
   • Relationship between Stages of Change, Decisional Balance, and Self-Efficacy

RESULTS: STEPS 1 + 2

1. Key informant interviews and focus groups with 24 aWS and 26 stuttering specialists

2. Qualitatively analyzed transcripts from interviews to develop three surveys:

<table>
<thead>
<tr>
<th>Stage of Change Scale</th>
<th>Decisional Balance Scale</th>
<th>Self-Efficacy Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-part definition of “stuttering management” including:</td>
<td>62 pros and cons of managing stuttering</td>
<td>35 situations that are challenging to manage stuttering in</td>
</tr>
<tr>
<td>1. Learning and using speech strategies for speaking more fluently and/or stuttering with less tension or struggle</td>
<td>- 33 pros</td>
<td></td>
</tr>
<tr>
<td>2. Changing negative thoughts and feelings about stuttering</td>
<td>- 29 cons</td>
<td></td>
</tr>
<tr>
<td>3. Saying what you want to say without avoiding sounds, words, or situations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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|   |
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3. 173 aWS submitted complete surveys sufficient for factor analysis

4. Exploratory factor analyses resulted in the following:

<table>
<thead>
<tr>
<th>Stage of Change Scale</th>
<th>Decisional Balance Scale</th>
<th>Self-Efficacy Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-component model fit the data:</td>
<td>Reduced from 62 to 16 items across two components:</td>
<td>Reduced from 35 to 11 items in one component:</td>
</tr>
<tr>
<td>• Precontemplation</td>
<td>• 8 pros</td>
<td>• confidence in managing stuttering across a variety of speaking situations</td>
</tr>
<tr>
<td>• Contemplation</td>
<td>• 8 cons</td>
<td></td>
</tr>
<tr>
<td>• Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Action</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Maintenance</td>
<td></td>
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</tbody>
</table>

5. Component model fit the data:


“Results: Stage of Change Scale

The best way to help with stuttering is:

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 enough to make long-lasting changes in the way you talk. For any of these things to become automatic, you will need help and regular practice for up to one year or more.

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

<table>
<thead>
<tr>
<th>Stage of Change</th>
<th>Sentence</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precont.</td>
<td>I am not thinking about doing any of these things in the next 6 months.</td>
<td>5.6%</td>
</tr>
<tr>
<td>Cont.</td>
<td>I am thinking about doing one or more of these things in the next 6 months.</td>
<td>11.2%</td>
</tr>
<tr>
<td>Prep.</td>
<td>I am planning to do one or more of these things in the next month.</td>
<td>11.2%</td>
</tr>
<tr>
<td>Action</td>
<td>I have been doing one or more of these things for LESS than 6 months.</td>
<td>14.3%</td>
</tr>
<tr>
<td>Maint.</td>
<td>I have been doing one or more of these things for MORE than 6 months.</td>
<td>57.8%</td>
</tr>
</tbody>
</table>
**RESULTS: DECISIONAL BALANCE SCALE**

“When thinking about making a change to your stuttering, how important is it to you if...?”

**PROS**
- you would feel better about yourself
- you would talk more
- you would feel calmer
- you could just be yourself
- you would feel a sense of accomplishment
- you would worry less about talking
- you wouldn’t feel like stuttering runs your life
- people would treat you just like any other person

**CONS**
- your speech would sound and feel weird and unnatural to you
- you would lose part of who you are if you stuttered differently
- other people would disapprove of you trying to change the way you speak
- you wouldn’t feel like yourself if you stuttered differently
- your speech would sound weird and unnatural to other people
- you would be disappointed in yourself if you change the way you speak just to make other people happy
- you may miss out on other activities to spend time working on your stuttering
- you might not be able to change the way you speak

1 (not at all important) - 5 (extremely important)

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**RESULTS: SELF-EFFICACY SCALE**

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

**CHALLENGING SITUATIONS**
- you are talking in front of a group of people
- you are talking to a teacher
- you are ordering in a restaurant
- you are being interviewed for a job
- you are telling a story
- you are meeting new people
- you are introducing yourself
- it is a hard talking day
- you are feeling stressed out
- you are calling someone on the phone
- you are afraid you are going to stutter

1 (not at all confident) - 5 (extremely confident)
RESULTS: RELATIONSHIP BETWEEN STAGE OF CHANGE, DECISIONAL BALANCE, & SELF-EFFICACY

- When thinking about the overall construct of stuttering management, the importance of the pros for managing stuttering predicted stage placement, $F(4, 142) = 3.193, p < .05$

- When thinking about using speech strategies, no cognitive process in our dataset predicted stage placement

- When thinking about changing negative thoughts/feelings about stuttering, decisional balance and self-efficacy predicted stage placement:
  - Pros: $F(4, 148) = 5.60, p < .001$
  - Cons: $F(4, 145) = 2.74, p < .05$
  - Confidence: $F(4, 146) = 2.54, p < .05$

- When thinking about speaking without avoidance, the importance of the pros for managing stuttering predicted stage placement, $F(4, 149) = 3.43, p < .05$

RESULTS: RELATIONSHIP BETWEEN DECISIONAL BALANCE & STAGE OF CHANGE

![Graph showing T-score vs. stage of change]
SUMMARY OF MAIN FINDINGS

“Stuttering management” is comprised of 3 interdependent components:

1. Strategies for speaking more fluently/stuttering with less tension
2. Changing negative thoughts/feelings about stuttering
3. Speaking without avoidance

In our sample, the Stage of Change model can be applied to aWS in order to determine which stage of change they are in for managing stuttering

aWS’ stage of change (i.e., readiness to manage stuttering) seems to be best predicted by how important they find the pros of managing stuttering to be

Clinical applicability – develop individualized decisional balance scales with clients

NEXT STEPS

Short-term goal:
- Second wave of recruitment to complete shortened versions of the scales (n=150)
  - Expand age range to 25
  - Target aWS in earlier stages of change (suggestions?)
  - Conduct confirmatory analyses

Long-term goal:
- Use these measures to create and evaluate the feasibility of a theoretically-driven computerized stage-matched “expert system” to produce tailored interventions for aWS

(Krebs, Prochaska, & Rossi, 2010)
REFERENCES


