WHAT IS THE EVIDENCE?
A REVIEW OF THE LATEST RESEARCH ON SELECTIVE MUTISM TREATMENTS, MECHANISMS, AND CORRELATES
AUGUST 13, 2021

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SELECTIVE MUTISM ASSOCIATION

THIS WEBINAR WAS MADE POSSIBLE THANKS TO A GENEROUS GRANT FROM

THE GORDON AND MARILYN MACKLIN FOUNDATION
AGENDA

• Classification
• Assessment
• Treatment
• Correlates
• Questions
ANXIETY IN CHILDREN WITH SM

- Social Anxiety Disorder 69%
- Separation Anxiety Disorder 18%
- Any Anxiety Disorder 80%
- Specific Phobia 19%
- Generalized Anxiety Disorder 6%
- OCD 6%


FEARS IN CHILDREN WITH SM

Social Fears – 67%
- Negative Reaction (35%)
- Social Evaluation (23%)
- Interactional Fears (12%)
- Observational Fears (12%)
- Showing Anxiety Symptoms (5%)

Fear of Mistakes – 40%
- Giving an incorrect answer
- Saying something wrong
- Deviating from expectations

Language Related Fears – 12%
- Related to pronunciation, grammar, etc.

Voice Related Fears – 7%
- Related to the sound of one’s voice

### FEAR-RELATED ASPECTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attentional Focus on Bodily Symptoms</td>
<td>21%</td>
<td>Focus on accelerated heartbeat, muscle tension, lump in throat, etc.</td>
</tr>
<tr>
<td>Attentional Focus on Thoughts</td>
<td>12%</td>
<td>Excessive rehearsal of speech, rumination about speaking</td>
</tr>
<tr>
<td>Overwhelming Anxiety</td>
<td>7%</td>
<td>Paralyzing anxiety, emptiness of mind</td>
</tr>
<tr>
<td>Avoidance Mechanism</td>
<td>4%</td>
<td>Silence to gain control or prevent negative consequences</td>
</tr>
</tbody>
</table>

ASSESSMENT

SMQ

- Selective Mutism Questionnaire (2008)

FSSM

- Frankfurt Scale of Selective Mutism (2020)

SMQ

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When appropriate, my child talks to most peers at school.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When appropriate, my child asks his/her teacher questions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Home/Family</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When appropriate, my child talks to family members in unfamiliar places.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When appropriate, my child talks to family members that don’t live with him/her.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>In Social Situations (Outside of School)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When appropriate, my child speaks with other children who he/she does not know.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When appropriate, my child speaks to store clerks and/or waiters.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>


Table 1. Baseline SMQ and SSQ scores in published selective mutism treatment studies.a

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>SMQ at school</td>
<td>0.38 (0.35)</td>
<td>0.50 (0.40)</td>
<td>0.52 (0.99)</td>
<td>0.53 (0.68)</td>
<td>0.67 (0.56)</td>
<td>Missing</td>
</tr>
<tr>
<td>SMQ at home</td>
<td>1.73 (0.66)</td>
<td>1.65 (0.64)</td>
<td>1.63 (1.15)</td>
<td>2.04 (0.46)</td>
<td>1.88 (0.67)</td>
<td>1.90 (0.70)</td>
</tr>
<tr>
<td>SMQ in public</td>
<td>0.48 (0.67)</td>
<td>0.33 (0.43)</td>
<td>0.42 (0.83)</td>
<td>0.33 (0.37)</td>
<td>0.26 (0.34)</td>
<td>0.70 (0.60)</td>
</tr>
<tr>
<td>SSQ total</td>
<td>0.85 (0.38)</td>
<td>0.86 (0.35)</td>
<td>0.88 (1.15)</td>
<td>0.98 (0.39)</td>
<td>0.96 (0.44)</td>
<td>Missing</td>
</tr>
<tr>
<td>SMQ Completion</td>
<td>0.64 (0.54)</td>
<td>0.55 (0.43)</td>
<td>Missing</td>
<td>Missing</td>
<td>0.61 (0.56)</td>
<td>1.10 (0.70)</td>
</tr>
</tbody>
</table>

SD: standard deviation. SMQ: parent-rated Selective Mutism Questionnaire; SSQ: teacher-rated School Speech Questionnaire.

*Included are studies with a reasonably large sample reporting data following the SMQ/SSQ scoring instructions.

*a Reported here are baseline data on n = 37 (courtesy of Lindsey Bergman, as the Bergman 2013 study report data on n = 21).
FSSM

- Diagnostic Scale (DS)
  - 10 questions focusing on core SM characteristics
  - Cut off scores differentiate between SM and Social Anxiety Disorder
- Severity Scale (SS)
  - Assesses speaking patterns in three domains (school, family, social)
- Three Age Adjusted Versions
  - 3-6 years
  - 7-11 years
  - 12-18 years

TREATMENT

EVIDENCE-BASED PRACTICE

Best Available Research Evidence
Clinical Expertise
Patient Culture, Characteristics, and Preferences

From APA Presidential Task Force on Evidence-Based Practice (2005).
REINFORCE, SHAPE, EXPOSE, AND FADE...AND INCLUDE PARENTS


![Graph showing Systems Treatment Components]

TREATMENT OUTCOME STUDIES

<table>
<thead>
<tr>
<th>Authors</th>
<th>Date</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Randomized Controlled Trials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bergman, R. L., Gonzalez, A., Piacentini, J., &amp; Keller, M.</td>
<td>2013</td>
<td>Integrated Behavioral Therapy</td>
</tr>
<tr>
<td>Oerbeck, B., Stein, M., Wentzel-Laursen, T., Langsrud, O., &amp; Kristensen, H.</td>
<td>2014</td>
<td>Defocused Communication and Behavioral Techniques</td>
</tr>
<tr>
<td>Ooi, Y. P., Sung, S.,…Fund, D. S. S.</td>
<td>2016</td>
<td>Web-Based CBT (the “Meeky Mouse” program)</td>
</tr>
<tr>
<td>Esposito, M., Gimigliano, F.,…Carotenuti, M.</td>
<td>2017</td>
<td>Psychomotricity Treatment</td>
</tr>
<tr>
<td>Cornacchio, D., Furr, J.,…Comer, J.</td>
<td>2019</td>
<td>Intensive Group Behavioral Treatment</td>
</tr>
<tr>
<td><strong>Open Trials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Klein, E., Armstrong, S., Skira, K., &amp; Gordon, J.</td>
<td>2017</td>
<td>Social Communication Anxiety Treatment (SCAT)</td>
</tr>
<tr>
<td>Catchpole, R., Young, A., Baer, S., &amp; Salih, T.</td>
<td>2019</td>
<td>Parent-Child Interaction Therapy (PCIT)</td>
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</tbody>
</table>
## TREATMENT COMPONENTS

<table>
<thead>
<tr>
<th>First Author</th>
<th>Number of Hours/Weeks</th>
<th>Rapport Building</th>
<th>Parent Involvement</th>
<th>Shaping/ Fading</th>
<th>Gradual Exposure</th>
<th>In-Session Community Practice</th>
<th>Rewards/ Contingency Management</th>
<th>School Consultation/ Sessions</th>
<th>Between Session Practice</th>
<th>Anxiety Management Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergman (2013)</td>
<td>20/24</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Oerbeck (2014)</td>
<td>21/12</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ooi (2016)</td>
<td>14/14</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Esposito (2017)</td>
<td>54/24</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Klein (2017)</td>
<td>3/9*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cornacchio (2019)</td>
<td>30/1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Catchpole (2019)</td>
<td>16/22</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

## A SUMMARY OF TREATMENT OUTCOMES

<table>
<thead>
<tr>
<th></th>
<th>SMQ/SSQ</th>
<th>SM Diagnosis</th>
<th>Other Anxiety Symptoms</th>
<th>Treatment Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergman, et al. (2013)</td>
<td>SMQ and SSQ: SS pre/post gains; maintained at FU</td>
<td>ADIS-IV-P: 67% SM diagnosis free</td>
<td>SASC-P/T: SS improvement in social anxiety per parents, but not teachers</td>
<td>CGI-I: 75% (post); 88.9% (FU)</td>
</tr>
<tr>
<td>Oerbeck, et al. (2014)</td>
<td>SMQ and SSQ: SS pre/post gains; maintained at FU</td>
<td>ADIS-IV-P: 50% SM diagnosis free (1 yr FU); 71% diagnosis free (5 yr FU)</td>
<td>KSADS: 45.8% with a comorbid anxiety d/o (1 yr FU)</td>
<td>N/A</td>
</tr>
<tr>
<td>Ooi, et al. (2016)</td>
<td>SMQ: no effects</td>
<td>N/A</td>
<td>ACAS-C: no effects</td>
<td>CGI-I and CGI-S: SS improvement</td>
</tr>
<tr>
<td>Esposito, et al. (2017)</td>
<td>SMQ: SS pre/post gains</td>
<td>N/A</td>
<td>CBCL: SS improvement on Anxious/Depressed, Social Problems, Withdrawn, Internalizing, and Total scales</td>
<td>N/A</td>
</tr>
<tr>
<td>Klein, et al. (2017)</td>
<td>SMQ: SS pre/post gains</td>
<td>N/A</td>
<td>CBCL: SS improvement on Anxiety and Withdrawn scales</td>
<td>N/A</td>
</tr>
<tr>
<td>Cornacchio, et al. (2019)</td>
<td>SMQ: SS pre/post gains Social; no effects Home</td>
<td>ADIS-IV-P: 7% (post); 45.8% (FU) SM diagnosis free</td>
<td>ADIS-IV-P: SS reduction in IE rated social anxiety severity</td>
<td>CGI-I: 50% (post); 62.5% (FU)</td>
</tr>
<tr>
<td>Catchpole, et al. (2019)</td>
<td>SMQ: SS pre/post gains; maintained a FU</td>
<td>SSQ: SS pre/post gains</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

SS – statistically significant; FU – follow up; ADIS-IV-P – Anxiety Disorders Interview Schedule for DSM-IV, Parent Version; SASC-P/T – Social Anxiety Scale for Children-Parent/Teacher; KSADS – Schedule for Affective Disorders and Schizophrenia for Children; ACAS-C – Asian Children’s Anxiety Scale – Caretaker; CBCL – Child Behavior Checklist; CGI-I/S – Clinician Global Impressions – Improvement/Severity; N/A – Not Assessed
A META-ANALYSIS OF RCTS

Study | g [95% CI]
---|---
Bergman et al. (2013) | 0.60 [-0.26, 1.46]
Cornacchio et al. (2019) | 0.54 [-0.18, 1.27]
Esposito et al. (2017) | 1.09 [0.74, 1.45]
Oerbeck et al. (2014) | 1.05 [0.22, 1.88]
Ooi et al. (2016) | 0.34 [-0.52, 1.20]
Overall | 0.87 [0.58, 1.16]

FIGURE 2 Effects of psychological treatment versus control conditions at post-treatment. The size of each point indicates the study’s relative weight in the meta-analysis.

But what is Hedges’ g?
A measure of effect size; tells the degree to which the experimental groups differed; demonstrates practical significance of findings


EMPIRICALLY SUPPORTED TREATMENTS FOR SM

Criteria for Empirically Validated Treatments: Well-Established Treatments

I. At least two good group design studies, conducted by different investigators, demonstrating efficacy in one or more of the following ways:
A. Superior to pill or psychological placebo or to another treatment.
B. Equivalent to an already established treatment in studies with adequate statistical power (about 30 per group; cf. Kazdin & Weisz, 1989).
OR
II. A large series of single case design studies demonstrating efficacy. These studies must have:
A. Used good experimental designs and
B. Compared the intervention to another treatment as in I.A.

FURTHER CRITERIA FOR BOTH I AND II:

III. Studies must be conducted with treatment manuals.
IV. Characteristics of the client samples must be clearly specified.

Criteria for Empirically Validated Treatments: Probably Efficacious Treatments

I. Two studies showing the treatment is more effective than a waiting-list control group.

OR

II. Two studies otherwise meeting the well-established treatment criteria I, III, and IV, but both are conducted by the same investigator. Or one good study demonstrating effectiveness by these same criteria.

OR

III. At least two good studies demonstrating effectiveness but flawed by heterogeneity of the client samples.

OR

IV. A small series of single case design studies otherwise meeting the well-established treatment criteria II, III, and IV.

NONE!
CORRELATES

PREDICTORS OF TREATMENT RESPONSE

- Age
- SMQ Initial Symptom Severity
- Family Compliance
- Family History of SM

Significant

- Age
- Expressive and Receptive Language Skills
- Duration of SM Symptoms
- Comorbid Diagnoses

Not Significant
ANXIETY PRODUCING PEOPLE...

Table 1 Categories of reported anxiety inducing person-characteristics

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Examples</th>
<th>Participants who reported this characteristic*</th>
</tr>
</thead>
</table>
| Lack of distance          | People who do not keep the distance, who get too close to the child physically, too directly address the child or demand and expectations that put pressure on the child; show little sensitivity to the child's need for distance. | "Demanding people"  
                             |                                                                           | "People who do not keep enough distance"  
                             |                                                                           | "People who put her under pressure" | 45% |
| Authority characteristics  | Behavior and characteristics of a person usually perceived as authoritarian or aggressive or group belonging to authorities. | "Strict persons"  
                             |                                                                           | "Loud voice"  
                             |                                                                           | "Dominant persons"  
                             |                                                                           | "Medical doctors" | 36% |
| Low familiarity           | Strangers where the child does not know and who are difficult for him to assess and unpredictable. | "Strangers"  
                             |                                                                           | "Not seen for a long time"  
                             |                                                                           | "When it hardly knows the person" | 33% |
| External characteristics   | External social and emotional characteristics of a person. | "Old age"  
                             |                                                                           | "Male"  
                             |                                                                           | "Tall" | 25% |
| Little child-focused      | People who are not very focused on the needs of the child and show little sensitivity in the sense of too much distance or clumsy contact with the child, who do not try to get access to the child or who are insensitive to contact | "Closed people"  
                             |                                                                           | "Unfriendly and cold"  
                             |                                                                           | "Unfriendly" | 22% |


...PLACES...

Table 2 Categories of reported anxiety inducing characteristics of place

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Examples</th>
<th>Participants who reported this characteristic*</th>
</tr>
</thead>
</table>
| Unknown places            | Unknown places that the child does not yet know or only knows a little, which are associated with uncertainty with regard to procedures and little behavioral safety. | "Places that are new for my child"  
                             |                                                                           | "If this is the first time anywhere"  
                             |                                                                           | "Unknown place" | 56% |
| Crowds                    | Places with a lot of people. | "When there are too many people in one place"  
                             |                                                                           | "Many people in little space"  
                             |                                                                           | "Many people" | 44% |
| Places with negative experience | Places where the child has already had negative experience or expects to meet or talk to certain people. | "Medical practice"  
                             |                                                                           | "Places where she is expected to speak"  
                             |                                                                           | "Negative experience at this or similar place" | 21% |
| High volume               | Places with high volume or much noise. | "Volume dominates"  
                             |                                                                           | "Noisy environment"  
                             |                                                                           | "Loud noises" | 13% |

...AND THINGS...

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Examples</th>
<th>Participants who reported this characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>New activities</td>
<td>Activities that the child does not yet know, where he/she does not know what to expect and where the consequences are unforeseeable</td>
<td>“Everything that is new”</td>
<td>47%</td>
</tr>
<tr>
<td>Motor activities</td>
<td>Motor activities to be learned, activities that require courage or could be potentially dangerous</td>
<td>“Climb up somewhere”</td>
<td>27%</td>
</tr>
<tr>
<td>Failure</td>
<td>Activities that the child cannot do or is afraid of failing and has not yet mastered</td>
<td>“When she has to do something and is not sure if she can or can’t do it”</td>
<td>25%</td>
</tr>
<tr>
<td>Focus of attention</td>
<td>Activities in which the child could be the focus of attention</td>
<td>“When many people are watching”</td>
<td>22%</td>
</tr>
<tr>
<td>Activities with speech demands</td>
<td>Activities associated with talking to other people</td>
<td>“If you want her to speak in front of others”</td>
<td>19%</td>
</tr>
</tbody>
</table>


REFERENCES


REFERENCES, CONTINUED


THANK YOU!

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BOSTON UNIVERSITY