Tier 2 Intervention and Progress Monitoring for Internalizing Behavior Concerns

Katie Eklund, Stephen Kilgus, Brittany Zakszeski, & Evan Dart
Association for Positive Behavior Support
March 31, 2023

Learning Objectives

1. Participants will describe the core components of and existing evidence for (a) the Resilience Education Program, (b) the Calm Cat Program, and (c) progress monitoring tools for examining the effectiveness of internalizing behavior concerns.

2. Participants will receive guidance on making cultural adaptations to interventions for internalizing behaviors.

3. Participants will describe how to use data to identify students for these interventions and monitor their intervention progress.
Mental Health Challenges

• Calls for increased emphasis on targeted intervention for subthreshold symptoms
  • NIMH, 2015
  • Community Preventive Services Task Force, 2019

“The CPSTF recommends targeted school-based cognitive behavioral therapy programs to reduce depression and anxiety symptoms among school-aged children and adolescents who are assessed to be at increased risk for these conditions.”

Mental Health Challenges

• Two broad categories:
  • Externalizing problems
  • Internalizing problems*

• Problems exist along a continuum
  • Low risk
  • Subthreshold symptoms
  • Diagnosable disorder
Tier 2

- Reviews of the Tier 2 literature reveal strong attention to externalizing problems (Bruhn et al., 2014; Mitchell et al., 2012)
  - Less focus on internalizing problems
  - Several calls for increased focus in this area (Kilgus et al., 2015; McIntosh et al., 2014)
- Multiple options have been explored
  - Manualized small-group CBT
  - Check In/Check Out (CICO)
  - Courage and Confidence Mentor Program
  - Resilience Education Program (REP)
REP – Three Components

- Cognitive behavioral instruction (CBI)
  - Five lessons, taught across five weeks
  - Small-group format (3-5 students)
  - Focus on key skills
    - Coping skills
    - Cognitive restructuring
    - Problem-solving skills

- Modified Check In/Check Out (CICO)
  - Check in and out with a mentor each day
  - Teacher feedback throughout the day regarding skill use and other positive behaviors
  - Connection with parents

- *Resilient Families (RF)*
  - Parent training on key skills and how to support CBI and CICO in the home

REP – Theory

- CBI
  - Student-oriented
  - Instruct key social-emotional skills

- CICO & RF
  - Ecologically-oriented
    - Educators
    - Parents and caregivers
  - Prompt and reinforce student use of those skills
Overview of REP Resilience Education Program

Stephen Kilgus, PhD
Katie Eklund, PhD
Andy Garbacz, PhD
Two Different Versions

Elementary School (Grades 4-5)

Middle School (Grades 6-8)

REP Intervention: CBI Lessons

Team building and introduction

Identifying strong feelings

Using coping skills to manage emotions

Using problem-solving strategies

Using cognitive restructuring
REP Modification Options

Individual diversity considerations
Moving & Grooving – adaptations for active students
Homework for All Homes

Recommendations

1. Group size (3-5 students)
2. Meeting frequency (1 vs. 2 per week)
3. Student groupings (grade and nature of concern)
4. Emphasize group expectations (pair with praise and reinforcement)
5. Review limits of confidentiality
Recommendations

6. Co-lead the group
7. Level of need (Tier 2, not 3)
8. Identification of students for REP
9. Sensitivity to diversity of student and family needs (consider suggestions for modifications)

CICO Procedures

- **Teacher Feedback & Praise**
  - Give teacher DPR at start of activity – teacher acknowledges receipt
  - Teacher rates student behavior
    - CBI-aligned behaviors
    - Positive replacement behaviors (need to select)
  - Teacher delivers feedback and praise
  - Minimizes attention to inappropriate behavior
  - Student rates their mood
    - Behavior <-> Mood
Resilient Families

- Integrated family support and collaboration
- Grounded in core features of family-centered and family-school-community partnership programs (Sheridan et al., 2019; Stormshak et al., 2011)
- Designed to be brief, goal-directed, and motivationally oriented
- Provides a framework for tailoring REP for families and building parenting skills, as well as a mechanism for fostering family-school partnerships

Resilient Families within the Resilience Education Program

- Initial Collaborative Meeting
  - Establish collaboration
  - Describe REP
  - Discuss family culture, values, and goals
  - Link REP to goals
  - Address participation barriers

- Cognitive Behavioral Instruction

- Check-In/Check-Out

- Positive Parenting Support

- Family Coaching Sessions
  - Goal directed brief sessions with the family and a REP coach
  - Tailored based on family goals
  - Support building skills and promoting social, emotional, and behavioral competencies

- Planning for Success
  - Discuss progress toward goals
  - Plan for continued progress
  - Discuss connections to school or community
Study 1: Single Case Design

- Allen, Kilgus, & Eklund, 2019
  - Three students
  - Multiple baseline, single-case design
  - Direct observation
    - Negative affect
    - Internalizing problems (e.g., worry, irritability)
    - Social engagement
  - Visual analysis
    - Clear improvement for 2 of 3
  - PAND (for 2 of 3)
    - Range = .75-.83
    - “Effective”

Study 2: Single Case Design

- Eklund et al., 2021
  - Three students
  - Multiple baseline, single-case design
  - Teacher direct behavior ratings
    - Internalizing problems (e.g., withdrawal, negative affect)
  - Visual analysis
    - Clear improvement for 2 of 3
  - PAND (for 2 of 3)
    - Range = .79-.83
    - “Effective”
Study 3: Pilot Randomized Controlled Trial (RCT)

Kilpatrick et al., 2021

- Students in 4th - 7th grade in 4 schools
- Randomized to intervention & waitlist control groups
- Teachers and students reported decreased internalizing behaviors
- Large effect sizes of student-reported coping skills, social support, & control of internal states
- Teachers reported high levels of acceptability (easy to understand & feasible to use)

Building an Efficient Targeted Intervention for Students At Risk for Internalizing Problems: The Resilience Education Program (REP)

Year 1: Planning and Development Process
Year 2: Feasibility of Implementation
★ Year 3: Component Analyses
Year 4: Pilot Efficacy Testing

Research Team:
Stephen Kilgus
Katie Eklund
Andy Garbacz
Tim Lewis
REP Study Year 2: Feasibility of Implementation

Method

Participants
- 2 elementary schools in urban district
  - 9 students in Grades 4 & 5
- Universal screening & inclusionary criteria
  - Teacher BESS
- School psychologist & social worker co-led REP groups
  - 3-5 kids in each group
Study Procedures

- Didactic REP training for group facilitators
- Systematic Direct Observation training
  - 4 school psychology graduate students
  - 80% agreement
- Targeted behavior screening in 4th & 5th grade classrooms
- Parent, teacher, & student consent
- Administered pre/post-test measures
- Conducted focus groups following REP implementation

Measures

- Pre-/post-test measures for children, parents, & teachers
  - Behavior & Feelings Survey (Weisz et al., 2019)
  - BESS (Kamphaus & Reynolds, 2015)
- Conducted SDOs twice a week in each classroom
  - Academic engagement & social engagement
  - Withdrawal & negative affect
- Social validity rated by SMH staff & teachers
  - URP-Intervention (Chafouleas et al., 2011)
Results – Internalizing Concerns

Results – Usability and Feasibility
Results – Focus Groups Themes

- Parent components of REP
  - **Group facilitators:** “This component of the intervention was challenging to implement. The initial meeting was great, but it was hard to maintain engagement as the intervention progressed.”
  - **CICO mentors:** “The teachers were unsure about their role in the parent component/collaboration aspect of the intervention”

- Strengthen the connection between intervention content and CICO mentors/classroom teachers
  - Increase communication with teachers and teacher knowledge of CBI

- Incorporate visuals
  - **Group facilitators:** Requested more visuals for the skills (e.g., CBT triangle)
  - **CICO mentors:** Classroom teachers requested a visual to tape to student’s desks for easy reference and to reinforce skills

- Frequency/dosage of intervention
  - **Group facilitators:** One group noted sessions were too frequent (twice weekly) for effective implementation in schools. They recommended sessions occur less frequently for a longer period of time.
  - **CICO mentors/teachers:** Recommended that the intervention incorporate more sessions over time for it to be more effective.
**REP Revision Examples**

<table>
<thead>
<tr>
<th>Area 1: CBI Lesson Materials</th>
<th>Area 2: Lesson/Session Content (CBI)</th>
<th>Area 2: Lesson/Session Content (RF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create/revise existing PowerPoint presentations for Lessons 1-5</td>
<td>Review Lesson 2 to reduce content</td>
<td>Planning for Success meeting: add list of community referrals to share with families</td>
</tr>
<tr>
<td>Create small lesson summary cards for Lessons 1-5 (for students)</td>
<td>Create 2 booster sessions</td>
<td>Initial Collaborative meeting: add content to gather information about situations that may trigger emotional responses to use as scenarios during CBI lessons</td>
</tr>
<tr>
<td>Create one-page summaries for Lessons 1-5 (for weekly emails)</td>
<td>Create inclusion activity/icebreaker for each lesson centered around emotions</td>
<td></td>
</tr>
<tr>
<td>Create script for weekly emails</td>
<td>Create scenarios for examples to use in group</td>
<td></td>
</tr>
<tr>
<td>Create visuals for each skill (STU, CHeT)</td>
<td>Revise lesson materials to reflect changes to acronyms, scenarios, and inclusion activities</td>
<td></td>
</tr>
<tr>
<td>Create visuals of scenario characters (3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

- Students reported decreases in internalizing behaviors following the REP intervention
- SDO demonstrated effects for 4 students, but floor effects for the remaining students
  - SDO may be a secondary data source given the limited periods we observed
- Teacher BESS data demonstrated small changes before & after intervention for a few students
- Teacher focus groups suggested teachers observed student’s use of REP skills in the classroom
Accessing REP (for free!)

ONLINE:
https://smhcollaborative.org/rep-materials/

Efficacy and Usability of a Targeted Relaxation Skills Training Program for Early Elementary Students

19th International Conference on Positive Behavior Support
March 31, 2023
**Acknowledgment**

This work was supported by the American Psychological Foundation through the John and Polly Sparks Early Career Grant for Psychologists Investigating Serious Emotional Disturbance (2020 competition; PI: Zakszeski).
Objectives

By the end of this presentation, you will be able to:

- Describe the initial development of a Tier 2 program for early elementary students with internalizing behavior risk
- Summarize the results of a study examining this program’s efficacy and usability

Rationale

**Why is this work needed?**
In search of an intervention that...

- Targets internalizing behavior risk
- Is feasible for implementation at Tier 2
- Is suitable for implementation by non-MH staff
- Is developmentally appropriate for early elementary students
Existing Intervention Models

Cognitive-Behavioral Instruction (CBI) + Adapted Check-In/Check-Out (CICO)
- Courage and Confidence Mentor Program (CCMP; Cook et al., 2015; Fiat et al., 2017)
- Resilience Education Program (REP; Allen et al., 2019; Eklund et al., 2021; Kilpatrick et al., 2021)

Behavioral Skills Training
- Introduction > Model > Rehearsal > Feedback (Dib & Sturmey, 2012)
- Within CBI, behavioral coping skills is an accessible target

Introducing the Calm Cat Program
Introducing the Calm Cat Program

Core sequence: Five 30-min group BST sessions

Generalization and maintenance sessions:
- Classroom generalization session
- Family generalization session
- Booster sessions (2)
Introducing the Calm Cat Program

Modified CICO procedure begins in Week 2 and extends beyond Calm Cat Curriculum groups

Calm Cat Coaching Card

<table>
<thead>
<tr>
<th>Period</th>
<th>How Did I Feel?</th>
<th>Did I use a strategy?</th>
<th>If I used a strategy, did it help?</th>
<th>Teacher Feedback: Be Responsible for Controlling Emotions</th>
<th>Teacher Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>1</td>
</tr>
</tbody>
</table>

Teacher Comments: [Details not provided]

Teacher Signature:

Parent/Guardian Comments: [Details not provided]

Parent/Guardian Signature: [Details not provided]
Research Questions

To what extent does the Calm Cat Program increase students’ knowledge of relaxation strategies and decrease their internalizing symptoms?

To what extent do gains in relaxation skills knowledge and reductions in internalizing symptoms associated with participation in the Calm Cat Program sustain over time?

How usable do school-based personnel and students find the Calm Cat Program?
Learning Opportunity #1: Develop safeguards to ensure equal condition allocation

Method

What did we do?

Assessed for eligibility
(n = 10 schools)

Excluded (n = 1 school)
- Declined to participate (n = 1 school)

Randomized (n = 9 schools)

Allocated to Treatment Condition
(n = 5 schools; M = 9.40, SD = 5.50 students per school, 47 total students)
- Received allocated intervention (n = 46 students)
- Did not receive allocated intervention; moved to new school district (n = 1 student)

Allocated to Delayed Treatment Condition
(n = 4 schools; M = 6.50, SD = 2.67 students per school, 26 total students)
- Received allocated intervention (n = 26 students)

Follow-Up

Participated in follow-up assessments
(n = 5 schools, 46 students)

Participated in follow-up assessments
(n = 4 schools, 26 students)

Analysis

Included in analyses
(n = 5 schools, 46 students)

Included in analyses
(n = 4 schools, 26 students)
Student Identification Process

  - Total Behavior Risk scores equal to or less than 36
  - Emotional Behavior Risk scores equal to or less than 16
- Student need profile evaluated by Tier 2 team to determine intervention fit
- Enrollment contingent upon (a) guardian consent and (b) student assent

Implementation Measures

Did we do what we said we would do?

Adherence
- Percentage of session components implemented assessed via session checklists

Dosage
- Percentage of sessions attended assessed via attendance logs
- Percentage of coaching check-ins completed assessed via coaching cards
### Impact Measures

**Did it work?**

**Direct assessment of skill knowledge**
- Relaxation Skills Knowledge Assessment (RKSA)
- Curriculum-based assessment tool designed for the Calm Cat Program

**Self-report of anxiety symptoms**
- Screen for Child Anxiety Related Emotional Disorders, Child Version (SCARED-C)
  - Birmaher et al. (1999)

**Adult report of internalizing symptoms***
- Behavioral Assessment System for Children, 3rd Edition (BASC-3)
  - Reynolds & Kamphaus (2015)

**Learning Opportunity #2:** Plan realistic assessment procedures in collaboration with informants

### Usability Measures

**What did users think of it?**

**Staff implementer perceptions**
- Usage Rating Profile–Intervention, Revised (URP-IR)
  - Briesch et al. (2013)
  - Subscales: Acceptability, Understanding, Feasibility, Family–School Collaboration, System Climate, System Support

**Student participant perceptions**
- Children's Usage Rating Profile (CURP)
  - Briesch & Chafouleas (2009)
  - Subscales: Personal Desirability, Feasibility, Understanding
<table>
<thead>
<tr>
<th></th>
<th>Screening</th>
<th>T1</th>
<th>Phase 1</th>
<th>T2</th>
<th>Phase 2</th>
<th>T3</th>
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<tr>
<td><strong>Treatment Condition (TC)</strong></td>
<td>SAEBRS</td>
<td>RSKA SCARED-C BASC</td>
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<td>RSKA SCARED-C BASC</td>
<td>Treatment as usual</td>
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**Results & Discussion**

What did we find, and what does it mean?
To what extent does the Calm Cat Program increase students’ knowledge of relaxation strategies and decrease their internalizing symptoms?

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<tr>
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<td>6.98 (2.75)</td>
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<tr>
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<td>5.08 (1.74)</td>
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</tr>
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<td>33.58 (11.40)</td>
<td>33.40 (13.07)</td>
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Compared to DTC students, TC students had significantly greater performance gains on the RSKA ($F[1, 66.89] = 9.07, p = .004, \beta = .57, \eta^2 = .12$) and decreases in SCARED-C scores ($F[1, 66.58] = 9.29, p = .003, \beta = -.53, \eta^2 = .12$) between T1 and T2.
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In the smaller DTC condition ($n = 26$), between T2 and T3, students had statistically significant performance gains on the RSKA ($t_{corrected} [25] = 2.51, p = .02, d = .53$), whereas reductions in SCARED-C scores were not statistically significant yet were characterized by a small (Cohen, 1988) effect size ($t_{corrected} [25] = –1.36, p = .18, d = -.37$).

To what extent do gains in relaxation skills knowledge and reductions in internalizing symptoms associated with participation in the Calm Cat Program sustain over time?

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### Measure Condition T1 T2 T3

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- Scores were not statistically significantly different
- Small effect sizes in the direction of reductions in knowledge gains but continued reductions in anxiety symptoms post-intervention

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How usable do school-based personnel and students find the Calm Cat Program?

#### Usage Rating Profile – Intervention, Revised (URP-IR)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M</th>
<th>SD</th>
</tr>
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<tbody>
<tr>
<td>Acceptability</td>
<td>4.83</td>
<td>.52</td>
</tr>
<tr>
<td>Understanding</td>
<td>5.33</td>
<td>.44</td>
</tr>
<tr>
<td>Feasibility</td>
<td>4.61</td>
<td>.74</td>
</tr>
<tr>
<td>System Climate</td>
<td>4.96</td>
<td>.34</td>
</tr>
<tr>
<td>Home–School Collaboration</td>
<td>4.00</td>
<td>.99</td>
</tr>
<tr>
<td>System Support</td>
<td>2.04</td>
<td>.72</td>
</tr>
</tbody>
</table>

Rating options ranged from 1 (strongly disagree) to 6 (strongly agree).
How usable do school-based personnel and students find the Calm Cat Program?

Children’s Usage Rating Profile (CURP)

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<thead>
<tr>
<th>Subscale</th>
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<th>SD</th>
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</thead>
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<td>Personal Desirability</td>
<td>3.29</td>
<td>.63</td>
</tr>
<tr>
<td>Feasibility</td>
<td>3.04</td>
<td>.68</td>
</tr>
<tr>
<td>Understanding</td>
<td>3.07</td>
<td>.61</td>
</tr>
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</table>

Rating options ranged from 1 (strongly disagree) to 4 (strongly agree).

Takeaways

Preliminary evidence of program efficacy, but with notable limitations
- Limited sample
- Involvement of program developer and research team
- Unbalanced treatment conditions
- Lack of adult ratings and non-anxiety measures of internalizing symptoms

Limited variability in usability ratings (generally favorable impressions reported), but with some implementers suggesting a need for further grade differentiation


Progress Monitoring Internalizing Behaviors

Dr. Evan Dart
University of South Florida
What is Progress Monitoring?

- Multi-tiered systems of support (MTSS)
- Formative assessment process
- Make decisions about student response to intervention
- Modify/Intensify/Reduce services as indicated

Espin et al., 2018
Progress Monitoring Measures

- Defensible
- Flexible
- Repeatable
- Efficient

Christ et al., 2009

Progress Monitoring Internalizing Behavior

- Teacher-completed adapted Direct Behavior Rating (Dart et al., 2015)

- Researcher-completed systematic direct observation (Allen et al., 2018)
  - Social engagement, negative affect (e.g., frowning, tearful), targeted internalizing behavior (e.g., worry, irritability)

- Teacher-completed brief behavior rating scales (e.g., Briesch et al., 2022)

- Challenges compared to other domains of functioning
Informant/Rater

- Who should rate students’ internalizing symptoms?

- Cannot be directly assessed like academic skills or externalizing behavior

- Discrepancies across raters well-documented (e.g., Curhan et al., 2020)

- Student self-report may be useful as early as Kindergarten (von der Embse et al., 2023)

Context

- In which context should the assessment occur?

- Variability in degree of contextual specificity
  - Children’s Depression Inventory-2 (CDI-2; Kovacs, 2010) - Two weeks
  - Positive and Negative Affect Scale for Children (Laurent et al., 1999) – On average

- Frequency of measurement
  - Multiple times per day, daily, weekly

- Generalizability
Internalizing Behavior Selection

- Which internalizing behavior(s) should be monitored?

- General Outcome Measure?
  - Internalizing composite
  - Compare to ORF as an index of reading skill

- Targeted based on screening data?
  - Anxiety vs. depression

- Individualized based on additional data
  - Specific internalizing behaviors

Systematic Review of Assessments
(Dart et al., 2019)

- Assessment of symptoms related to internalizing disorders

- Administered at least weekly

- Used or recommended for use with youth aged 3-18
Systematic Review of Assessments
(Dart et al., 2019)

- Fifteen unique assessments identified
- Most were standardized rating scales
- Eight identified as pragmatically useful (i.e., less than 20 items)
- Varied in informant, context, and behavior measured

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Study</th>
<th># of Items</th>
<th>Modality</th>
<th>Rater</th>
<th>Frequency</th>
<th>Intended Setting</th>
<th>Domain</th>
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</thead>
<tbody>
<tr>
<td>DBR</td>
<td>Dart et al. (2015) and von der Embse et al. (2015b)</td>
<td>3</td>
<td>Paper</td>
<td>Self, teacher</td>
<td>Daily; multiple times per day</td>
<td>School</td>
<td>Internalizing; anxiety</td>
</tr>
<tr>
<td>Daily point sheets</td>
<td>Puddy et al. (2008)</td>
<td>3–4</td>
<td>Paper</td>
<td>Teacher, caregiver, clinician</td>
<td>Multiple times per day</td>
<td>School</td>
<td>Idiosyncratic behaviors</td>
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<td>Systematic direct observation</td>
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<td>Direct observation</td>
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<td>PANAS-C</td>
<td>Forbes et al. (2012)</td>
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<td>Clinic</td>
<td>Anxiety and depression</td>
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<td>BBRS</td>
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<td>Social skills</td>
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<td>Brief problem checklist</td>
<td>Chorpita et al. (2010) and Tsai et al. (2016)</td>
<td>12</td>
<td>Interview, telephone</td>
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<td>SAAIL</td>
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<td>12</td>
<td>Paper</td>
<td>Self, caregiver</td>
<td>Weekly</td>
<td>Clinic</td>
<td>Anxiety</td>
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Practical Implications and Future Directions

• Defensibility of many of these assessments is unknown
  • Establish technical adequacy

• Consider prioritizing self-report of internalizing behaviors due to informant discrepancies

• Look at other fields for potential solutions (e.g., clinical psychology and EMA)

Thank you - please stay in touch!

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