Effects of Strong Kids Curriculum on Students With Internalizing Behaviors: A Pilot Study

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ABSTRACT: Limited research has been conducted in school settings concerning students who demonstrate internalizing symptoms. To respond to the needs of such students, the Strong Kids social and emotional learning curriculum was implemented in three elementary schools to modify the social-emotional symptoms competence of 22 students in third, fourth, and fifth grades who were identified as at risk for internalizing disorders. The effects of this treatment were evaluated by pretest, posttest, and follow-up assessments measuring the students' internalizing behaviors and their knowledge of emotional and social skills. Participants' perceptions of the Strong Kids curriculum were also measured. Results indicate a statistically significant decrease in internalizing symptoms, a statistically significant increase in students' skill knowledge, and a range of perceptions about the curriculum.

THE PROBLEM

The primary purpose of schools is to assist students in their learning endeavors. Because of the interconnection between social–emotional and academic outcomes (McLeod & Kaiser; 2004; H. M. Walker, Ramsey, & Gresham, 2004), children who do not develop social
and emotional skills are likely to experience lower levels of peer acceptance, self-esteem, and self-confidence and have fewer successful academic skills (Benner, Beaudoin, Kinder, & Mooney, 2005; DiPerma, 2005; Merrell & Walters, 1998; Wichmann, Coplan, & Daniels, 2004). Developing appropriate social and emotional skills is important for all children and youth—especially, those identified with at-risk for emotional or behavior disorders (Merrell & Walters, 1998; H. M. Walker et al., 2004).

Approximately 20% of children experience mental health challenges, the most common being anxiety, followed by disruptive behavior and mood problems (Power, 2003). Of those children, approximately half have diagnosable psychological disorders; the other half have emotional and behavioral problems that are less severe and therefore not classified as disorders (Dumas & Nilsen, 2003). According to the U.S. Department of Health and Human Services (1999), fewer than 50% of children with mental health disorders receive treatment.

STUDENTS WITH INTERNALIZING BEHAVIORS

Children and youth who are at risk for or identified with emotional and behavioral disorders can be classified into two categories: externalizing and internalizing. Children with externalizing behaviors have been the focus of most intervention research because their problems are disruptive and easily identified by teachers and parents; internalizing behaviors, however, tend to be more subtle (Merrell & Walters, 1998). Externalizing behaviors include yelling, hitting, spitting, kicking, swearing, biting, and fighting (McConville & Cornell, 2003; Shechtman, 2000). Of the students who receive services for emotional and behavior issues within the school setting, the majority have externalizing problems (Lloyd, Kaufman, Landrum, & Roe, 1991).

Internalizing disorders include depression, dysthymic disorder, specific and simple phobias, posttraumatic stress disorder, school refusal, selective mutism, separation anxiety, social phobia, and generalized anxiety disorder (Stahl & Clarizio, 1999). Internalizing behaviors are not easy to observe, because they are more subtle and troubling to the individual than they are to others in the environment (Achenbach & Rescorla, 2001; Gresham & Kern, 2004; Merrell, Blade, Lund, & Kempf, 2003). Because these behaviors are not as disruptive as externalizing behavior problems, many students with internalizing problems do not receive adequate services (Merrell, 2001). Given

the potential seriousness of internalizing disorders, students with internalizing behaviors are still in need of intervention and support (Gresham, 2002; Merrell, 2001).

In an extensive review of empirical studies regarding treatment of internalizing behavior problems from 1985 to 2001, Compton, Bums, Egger, and Robertson (2002) identified only 27 that were well controlled (i.e., randomized clinical trials or quasi-experimental designs). The authors noted the relationship between internalizing disorders in childhood and substance abuse in adolescence. Cognitive-behavioral interventions were found to be among the most promising for childhood internalizing disorders. Kendziora (2004) found only eight prevention or early intervention studies concerning children with internalizing disorders. Both reviews suggested that research with children and adolescents with internalizing disorders is generally scarce.

PREVIOUS RESEARCH: SCHOOL-BASED INTERVENTIONS

Students with emotional and behavioral problems require support to be successful academically, socially, and emotionally. Schools provide an accessible context rich in opportunities for social and emotional development (Miller, Brehm, & Whitehouse, 1998). Although academic competency is a primary focus in schools, social and emotional interactions in classroom and nonclassroom settings are important components of education (Elkins & Elkins, 2006). Rooser (2001) suggested that children are typically more responsive to receiving emotional and social services in school than at a clinic because the school is a familiar environment. Delivery options commonly used by school personnel (e.g., psychologists and counselors) consist of large-group, small-group, and individual counseling and consultation sessions, along with family training and parental support (Dumas & Nilsen, 2003). Evidence-based strategies include token economies, response cost, time-out, precision commands, self-monitoring, and peer tutoring (Cook, Landrum, Tankersley, & Kaufman, 2002). Another approach for preventing and treating emotional and behavior problems is positive behavior support (PBS).

Schoolwide PBS—a multilevel approach (i.e., universal, selective, individual) for addressing the academic, behavioral and social needs of all students—has effectively met the social and emotional needs of numerous students in a variety of school communities (Carr et al., 1999; Kern & Manz, 2004; Lane & Beebe-Frankenberger, 2004; Lewis...
general education students in two public schools. The eighth-grade group consisted of students who were asked to participate in a leadership class. The fourth-grade treatment group consisted of students who were considered at risk for behavior problems. Both groups demonstrated statistically significant increases in scores on the Strong Kids content test, as well as fewer problem emotions after instruction.

Merrell and colleagues' (2007; 2008) and Gueldner and colleagues' (2006) findings are that the Strong Kids and Strong Teens curricula are effective interventions available for attending to the social and emotional welfare of children and youth. However, limitations remain within the framework of the research conducted by Merrell and colleagues. Specifically, effects of the curricula need to be studied on populations beyond those exclusively enrolled in general education classes, as well as on students identified with externalizing emotional and behavioral disorders. All age groups, including elementary-age students, need to be included. In addition, Merrell and colleagues recommended focusing on use of the curriculum across differing conditions for lesson delivery (i.e., 6 weeks versus 12 weeks). Students who have been included in previous Strong Kids and Strong Teens research endeavors have been identified for services by a teacher's school psychologist's nonsystematic selection strategies. There is a need for systematic screening endeavors that reliably identify students with emotional and behavioral issues—particularly, those with internalizing behavior problems. Finally, the perceptions of stakeholders assessed, also drawn from the curriculum, represent another untapped area of research with implications for the successful ongoing implementation of Strong Kids and Strong Teens.

In consideration of these findings and recommendations, we investigated two questions: First, what are the effects of the Strong Kids curriculum on social and emotional symptoms of third-, fourth-, and fifth-grade students identified as at risk for internalizing disorders? Second, what are the perceptions of the teachers and participating students in respect to the benefits of the curriculum?

THE SOLUTION

The studied intervention was the instruction of the Strong Kids curriculum, designed for teaching social and emotional skills, promoting resilience, strengthening assets, and increasing coping skills of students in Grades 4 to 6 (Merrell et al., 2007). This curriculum consists
of 12 partially scripted and highly structured lessons, similar in format and style, each lasting approximately 45 to 50 minutes. Merrell and colleagues (2008) noted the titles and content focus of the 12 basic lessons in Strong Kids, which include topics such as understanding and expressing emotions, dealing with anger, understanding other people’s feelings, and changing maladaptive beliefs. Strong Kids may be used with students categorized has high functioning, typical, at risk, or emotionally–behaviorally disordered. In this study, the Strong Kids lessons were taught at each school over a 6-week period, with two lessons per week rather than the recommended one lesson per week, in response to recommendations made by Guelders and colleagues (2006). There were 5 to 10 student participants identified with internalizing behavior problems in each session.

Training sessions for those who would be teaching the Strong Kids lessons were conducted at each school across three sessions. The primary investigator (M.B.) taught one lesson of the curriculum and presented all the materials using direct instruction techniques; this included defining skills and stating expectations. To check for understanding, the researcher asked the instructors to complete a written assessment of the curriculum instruction. Each instructor completed the assessments with 100% accuracy.

The only modification made to the recommended Strong Kids presentation format was the addition to each lesson of an anticipatory set designed to introduce the topic and engage the students. Most anticipatory sets involved some physical activity. For example, for the lesson on emotions, the instructor presented three face pictures and asked the students which feeling they associated with each picture—happy, sad, worried, or scared. As suggested in the Strong Kids instruction manual, a homework completion reinforcement program was also used. At each lesson, participants completed their homework assignment from the previous lesson and wrote their name on a slip of paper; the instructors then drew out names of two or three students to receive a small piece of candy.

EVIDENCE OF EFFECTIVENESS

Setting

This study was conducted at three suburban elementary schools in two districts in Utah, all of which were low- to middle-income schools implementing schoolwide programs in PBS. School A had a population of 695 students: 86% Caucasian, 12% Hispanic, and 2% from other ethnic groups. Of School B’s 524 students, 79% were Caucasian, 18% were Hispanic, and 3% were from other ethnic groups. School C, with a population of 613 students, was 89% Caucasian, 9% Hispanic, and 2% other.

Screening of Students

To identify potential student participants, we used the Systematic Screening for Behavior Disorders (SSBD; H. M. Walker & Severson, 1992), a multistaged process for identifying elementary school students at risk for emotional and behavioral disorders. Stage 1 asks classroom teachers to nominate students from their classes who exhibit internalizing or externalizing behaviors. Descriptive characteristics of both categories are given to teachers, who choose up to 10 students and rank order them according to the extent to which they exhibit those behaviors.

Stage 2 includes a 33-item Critical Events Index and a 22-item Combined Frequency Index for Adaptive and Maladaptive Behavior (12 and 11 items, respectively). The Critical Events Index consists of a list of internalizing and externalizing behaviors, presented in a checklist format, on which the teacher indicates the presence or absence of the behavior. The Combined Frequency Index lists adaptive behaviors (e.g., “Follows established classroom rules”) and maladaptive behaviors (e.g., “Uses coercive tactics to force the submission of peers”) that are rated by the teacher on a 5-point Likert-type scale.

Stage 3 consists of independent classroom observations of the behavior of students who meet or exceed normative criteria from Stage 2. These include multiple observations of academic engaged time and peer social behavior. Stage 3 of the SSBD was not used, because of the additional resources required, such as well-trained observers and large amounts of time dedicated to observations, which were beyond the capacity of this study. Furthermore, Stages 1 and 2 of the SSBD have been successfully used without Stage 3 to screen elementary students with emotional–behavior disorders (B. Walker, Cheney, Stage, & Blum, 2005).

Reviews have suggested that the scores from the SSBD are reliable, and there is evidence of validity for identifying elementary school students with potential behavior disorders (Kelley, 1998; Zlomke & Spies, 1998). A series of studies cited in the SSBD test manual yielded
sufficient reliability estimates of scores for its use in elementary schools (H. M. Walker & Severson, 1992). Internal consistency (alpha) was estimated above .80 for the Stage 2 subscales: Adaptive Student Behavior and Maladaptive Student Behavior. Elementary test-retest reliability (rho) for Stage 1 reported rankings of internalizing behavior as .72 and externalizing behavior as .79. Inter-rater agreement (Spearman rho) on the internalizing and externalizing dimensions of Stage 1 ranged from .82 to .94.

Selection of Students

During Stage 1, fourth- and fifth-grade teachers were asked to identify up to 10 students in their classes who displayed the most extreme internalizing behaviors, by listing their names in order of most severe to least. After possible at-risk students had been identified with Stage 1, a consent form was distributed to parents asking for permission to allow us to gather Stage 2 ratings.

During Stage 2, teachers completed the Critical Events Index and the Combined Frequency Index for the first three students that each teacher had listed. According to the instructions for administering the SSBD, along with specified cutoff scores for identifying students at risk for internalizing disorders as noted in the test manual (H. M. Walker & Severson, 1992), students who scored 1 or higher on the Critical Events Index moved onto the next level of identification, during which teachers completed the Adaptive Behavior Scale of the Combined Frequency Index. For students with scores of 41 or less on the Adaptive Behavior Scale, teachers also completed the Maladaptive Behavior Scale of the Combined Frequency Index. As a modification of the SSBD (supported by one of the authors; H. M. Walker, personal communication, June 18, 2002), students with a score of 14 or more on the Maladaptive Behavior Scale were identified as potential participants for this study.

After this comprehensive screening process, fewer students met the cutoffs than anticipated. Therefore, the school behavior team recommended students for participation who had SSBD scores within a few points of the cutoffs. Even with modification of the cutoff scores, the number of student participants was lower than anticipated, so the school behavior team recommended additional students who were perceived as being at risk for internalizing disorders, two of whom were third graders. A consent form detailing the Strong Kids curriculum and explaining the nature of this study was sent to parents of all potential participants. Table 1 shows the demographics of the student participants by school.

Adult Participants

The PBS staff and three school psychologists assisted in implementing the research. This PBS initiative sought to build environments that promoted learning and support for all students. Both a PBS staff member and a school psychologist taught all the Strong Kids lessons. Two PBS staff members served as observers to evaluate treatment fidelity.

Materials

The materials necessary for this study included the Strong Kids (Merrell et al., 2007) curriculum, a small group setting (tables or desks and chairs), an overhead projector, screen, overhead markers, transparencies, whiteboard and markers, pencils, and some edible reinforcers.

Targeted Behaviors and Instruments

The dependent variables for this study were the reported internalizing symptoms and the social–emotional knowledge of the student participants. General education teachers of the student participants completed the Teacher’s Report Form (TRF; Achenbach & Rescorla, 2001), a 113-item checklist normed for children aged 6 to 18. The TRF items are separated into two broad scales: internalizing and externalizing. The internalizing scale was of primary interest for this study. As reported in the TRF test manual, internal consistency (alpha) estimates have been reported above .80 for most of the subscales and above .90 for several. Pearson’s $r$, which was used to estimate “cross-informant agreement” on the subscales, ranged from .28 to .69. Most subscales
were in the upper .50 to .60 range for cross-informant agreement. The TRF uses T scores to aid in interpretation and in comparison to national norming groups. An average score is 50 (SD = 10). Each sub-scale has cutoffs for borderline and clinical scores. T scores over 65 are in the borderline range, whereas scores over 70 are considered in the clinical range.

Student participants completed a short version of the Internalizing Symptom Scale for Children (ISSC; Merrell & Walters, 1998), a self-report measure of internalizing symptoms normed for students in Grades 3 to 6. This standardized, norm-referenced scale was developed to assess children’s self-perceptions of internalizing symptoms. The short version of the ISSC consists of 10 items sensitive to the subject matter covered in the Strong Kids curriculum. When the instrument was used in a study of the Strong Kids curriculum (Merrell et al., 2008), scores yielded validity coefficients of .70 to .88 with established self-report measures (including the Children’s Depression Inventory and the full-length ISSC) and internal consistency reliability coefficients between .70 and .80.

The 20-item Knowledge Test—a self-report measure for students in fourth through eighth grade and part of the Strong Kids curriculum developed by Merrell and colleagues (2007)—was used as an outcome measure with the curriculum. Students’ knowledge and understanding of healthy social–emotional behaviors were measured by the 5 true/false and 15 multiple-choice questions. Scores resulted in internal consistency reliability coefficients of .60 to .70.

Data Collection and Evaluation Design

This study used a quasi-experimental design (pretest, posttest, follow-up). Students and teachers completed the pretest measures before the study. After completion of the 12 lessons, posttest measures were gathered. Four to 6 weeks later, all measures were collected again as a follow-up assessment. Data were analyzed with t tests to determine if differences were statistically significant. An alpha level of ≤ .05 was used to determine statistical significance. Effect sizes (Cohen’s d) were also calculated on statistically significant differences.

Treatment Integrity

Treatment integrity refers to the degree to which the intervention was put into place as planned. A treatment integrity checklist was completed by a reliability observer, who recorded the components of the lessons as they were delivered. To ensure that all Strong Kids lessons were taught accurately and in their entirety, an observer attended four lessons and completed the treatment integrity checklist, indicating whether the instructor taught each section of the lesson as presented in the Strong Kids manual.

Social Validity

Social validity was assessed to ensure that the research endeavor is of social importance. For this assessment, four questionnaires were administered. The first, administered before the beginning of the intervention, asked teachers to indicate their perceptions about the need for training in emotional and social interventions. The second and third questionnaires measured teachers’ and students’ perceptions of outcomes from participation in the Strong Kids intervention—particularly, changes they might have noticed since the curriculum was completed. The fourth questionnaire, completed by the school psychologists and PBS staff who taught the Strong Kids curriculum, asked about their perceptions of the curriculum at the completion of the study.

RESULTS AND DISCUSSION

TRF, ISSC, and Knowledge Test Scores

The results of this study indicate a decrease in participants’ TRF Internalizing scores over the course of the intervention. The internalizing pretest mean T score was 63.71 (SD = 9.49), whereas the posttest mean was 62.36 (SD = 6.91) and the follow-up mean was 56.95 (SD = 7.16). There was a statistically significant decrease between the pretest and posttest Internalizing mean scores, but there were statistically significant decreases between the pretest and follow-up means (t = 5.04, p < .001, d = .81) and the posttest and follow-up means (t = 3.94, p < .001, d = .77). These statistically significant changes were in a therapeutic direction; that is, students were rated by their teachers as exhibiting fewer internalizing behaviors at follow-up.

Figure 1 represents the number of clinical, borderline, and normal scores from the TRF pretest, posttest, and follow-up measures. Before instruction in the Strong Kids curriculum, only 5 student participants
had scored in the normal range. After the instruction, on the follow-
up TRF assessment, 14 of them scored in the normal range.

The results indicate a decrease in ISSC short-form scores over the
course of the intervention. The pretest mean ISSC score was 15.91
(SD = 4.52), whereas the posttest mean was 14.65 (SD = 4.67) and the
follow-up mean was 14.21 (SD = 4.43). There were statistically sig-
nificant decreases between the pre- and posttest mean ISSC scores
(t = 2.23, p < .05, d = .23) and between the pretest and follow-up mean
scores (t = 2.19, p < .05, d = .28). These statistically significant changes
were in a therapeutic direction. There were no statistically significant
differences between the posttest and follow-up mean ISSC scores.

An increase in the Strong Kids Knowledge Test scores was evident
over the course of the intervention. The pretest mean Knowledge
Test score was 11.17 (SD = 3.69), whereas the posttest mean was
13.64 (SD = 4.20) and the follow-up mean score was 13.44 (SD =
3.28). There were statistically significant gains between the pre-
test and posttest mean Knowledge Test scores (t = -2.23, p < .05,
d = .63) and the pretest and follow-up mean scores (t = -2.19, p <
.05, d = .61). The direction for these statistically significant changes
was therapeutic: Students' scores indicate improved knowledge of
healthy social-emotional behavior after participating in the inter-
vention. There were no significant differences between the posttest
and the follow-up mean scores.

SSBD Participants Versus Recommended Participants

Because some student participants were identified with the SSBD (n =
12) and others recommended for participation (n = 10), separate data
analyses were conducted to determine if outcomes varied according to

Selection method. Results indicate statistically significant decreases in
TRF internalizing scores over the course of the intervention for students
identified using the SSBD but not for recommended students. The in-
ternalizing pretest mean T score for students identified with the SSBD
was 66.83 (SD = 4.84), whereas the posttest mean was 64.00 (SD = 5.89)
and the follow-up mean was 58.33 (SD = 7.44). These score decreases
were statistically significant between pretest and posttest (t = 2.59, p <
.05, d = .53), pretest and follow-up (t = 6.82, p < .001, d = 1.38), and
posttest and follow-up (t = 3.33, p < .01, d = .85). These changes were in
a therapeutic direction: Participants identified with the SSBD were rated
by their teachers as exhibiting fewer internalizing behaviors after par-
ticipating in the intervention. Students recommended for participation
also showed decreased internalizing T scores across pretest (M = 60.58,
SD = 11.98), posttest (M = 60.40, SD = 7.82), and follow-up (M = 54.88,
SD = 6.62), although these changes were not statistically significant.

The results also indicate statistically significant decreases in ISSC
short-form scores for students identified with the SSBD. The pretest
mean ISSC score was 16.25 (SD = 4.04), whereas the posttest mean was
13.67 (SD = 5.10) and the follow-up mean was 13.89 (SD = 4.04). There
were statistically significant decreases between the pretest and posttest
mean ISSC scores (t = 2.53, p < .05, d = .56) and between the pretest and
follow-up mean scores (t = 2.99, p < .05, d = .58). These statistically
significant changes were in a therapeutic direction: The students
identified by the SSBD reported fewer internalizing symptoms after par-
ticipating in the intervention. Students recommended for participation
evidenced slightly decreased ISSC scores across pretest (M = 15.55, SD =
5.16), posttest (M = 15.30, SD = 4.16), and follow-up (M = 14.56, SD =
5.08), although these changes were not statistically significant.

Statistically significant increases in the Strong Kids Knowledge Test
scores were evident over the course of the intervention for students re-
commended for participation. The pretest mean Knowledge Test score
for recommended students was 10.33 (SD = 4.40), whereas the posttest
mean score was 13.70 (SD = 3.34) and the follow-up mean score was
13.75 (SD = 3.91). There were statistically significant gains between
the pretest and posttest mean Knowledge Test score (t = -2.53, p < .05,
d = .87) and the pretest and follow-up mean scores (t = 2.99, p < .05,
d = .82). These statistically significant changes were in a therapeutic
direction. Recommended students reported that their knowledge of
healthy social-emotional behavior improved after they participated in
the intervention. Students identified using the SSBD evidenced slightly
increased Knowledge Test scores across pretest (M = 12.00, SD = 2.76),
posttest (M = 13.58, SD = 4.96), and follow-up (M = 13.20, SD = 4.49), although these changes were not statistically significant.

Treatment Fidelity Results

One third of all lessons at each school were observed for treatment fidelity purposes. The results of treatment fidelity observations suggested 95% to 100% treatment fidelity at the three participating schools.

Social Validity Results

Before the intervention, the general education teachers of student participants completed a questionnaire assessing the perceived need for social and emotional training and resources at their school. Approximately 89% reported a need for social-emotional training in school, with 67% reporting that they have many students with internalizing problems. Approximately 55% of teachers indicated they had received some training through staff development and PBS training on how to help students with internalizing problems, and 67% of these teachers reported a greater need for emotional skills training now than in past years.

At the end of the intervention, the general education teachers completed a questionnaire regarding any changes noticed in the student participants. Teachers completed surveys for 82% of the students, reporting positive behavioral changes in 72% of them. Sample types of positive behavioral changes included increases in rates of student interactions with teachers and peers, ability to handle emotions, and student-initiated interactions. In the open-ended portion of the questionnaire, teachers remarked, for example, “He seems to communicate with me better,” “A little less over-reacting emotionally,” and “Sadness is gone.”

Student participants were asked about changes they noticed in themselves. Approximately 43% of student participants reported positive changes, whereas the remaining students reported no changes. Among the changes noted were initiating more interactions with their teachers, asking more questions in class, and asking more questions that were on topic. In the open-ended portion of their questionnaire, students remarked, for example, “I talk in class more than before,” “I calm myself down,” and “[I know] how to talk to people about my feelings.”

All six Strong Kids instructors completed a post-social validity questionnaire. In response to a question about which topics the instructors believed were the most important to address, they listed clear thinking, understanding your feelings, dealing with anger, and solving people problems. Five instructors rated that the skills in the Strong Kids curriculum as vital or important, and they rated the Strong Kids curriculum as effective or highly effective in addressing the emotional needs of students in an academic setting. One rated the curriculum as somewhat effective. Three instructors indicated that they believed that all students in their school would benefit from the Strong Kids lessons. Instructors’ suggestions for topics not fully addressed in the curriculum included the following: links between thoughts, feelings, and actions; honesty; showing respect; self-acceptance; and recognizing that it is okay to make mistakes.

The results of this study suggest that the Strong Kids curriculum can be effective at decreasing internalizing behavior among students identified by the SSBD as being at risk. Results of social validity questionnaires indicate the need for social-emotional interventions to be delivered in schools to address the needs of the targeted population. Furthermore, the perceived teacher and participant outcomes were generally reported as being favorable. Implications, limitations, and recommendations associated with these findings are discussed as follows.

Outcomes and Implications for Schools

Using the PBS framework, many schools take a proactive approach to prevent emotional and behavioral problems. This study focused on using the Strong Kids curriculum as a selective-level PBS intervention. Thus, the outcomes offer support for using this intervention to address the needs of students who are at risk for internalizing problems and need support beyond the universal-level interventions available in schools.

Guelдер and colleagues (2006) recommended that further research be conducted with the Strong Kids curriculum at the elementary level with a 6-week instruction period, potentially more effective for elementary children than the 12-week scheduling that had worked well for Strong Teens. Out study addressed that recommendation, presenting two lessons per week across 6 weeks, and it was the first study on the Strong Kids curriculum to use such a schedule. The authors anticipated that benefits of this schedule might include better student recall
of previous lessons and more frequent exposure to content addressed in the curriculum as a result of presenting two lessons per week, as compared to one per week in the Gueldner et al. study.

With the 6-week delivery model, data from all students show a decrease in internalizing symptoms as measured by self-report and teacher report. Student participants reported statistically significant (though small effect size) decreases in internalizing symptoms at the completion of instruction and maintained that decrease at the follow-up assessment. Teachers did not report decreases on the ISSC immediately after the instruction, although they did report large decreases on the follow-up TRF assessment. This suggests that student participants experienced changes that were not immediately visible to teachers, but over time teachers observed reductions in internalizing symptoms. This finding is consistent with Merrell’s (2001) conceptualization of internalizing behaviors as being generated and maintained within an individual and thus not readily observable by others. Because of the nature of internalizing behaviors, schools should consider extending the length of the Strong Kids curriculum to provide more time for anticipated outcomes to develop and become visible.

In response to Gueldner and colleagues’ (2006) recommendation to expand the research of the Strong Kids curriculum to other populations, we chose to identify elementary students who appeared to be at risk for internalizing disorders. The selection method used by Gueldner and colleagues for identifying at-risk participants was that of school psychologist recommendation. Wanting a more systematic screening approach, we chose the SSBD for initial participant selection. This method produced 60% of the population for the study. Needing additional participants, we turned to the school-based behavioral teams to select the remaining 40%. Although outcomes for this study have been favorable, researchers and school personnel should collaboratively pursue systematic screening strategies for identifying at-risk populations.

It is interesting to note the difference in the outcomes between the two populations: those identified by the SSBD versus those identified via the behavioral teams. On the pretest assessment, student participants identified by the SSBD demonstrated higher scores related to internalizing behavior and higher scores in knowledge of content, which suggests that they were at higher risk and had more knowledge of social and emotional content than the students recommended for participation. Recommended participants demonstrated above-average internalizing symptoms, with pretest scores that were a standard deviation above normal, suggesting that the behavior teams had accurately identified students at risk for internalizing disorders, although those at highest risk were best identified by the SSBD. Recommended students had lower scores for knowledge of social and emotional content as well.

These findings support the use of screening methods such as the SSBD in identifying students who are at risk for internalizing disorders so that they receive services that meet their needs. These findings also suggest that Strong Kids may be more effective at reducing the symptoms of students at high risk for internalizing disorders than those of students at lower risk, supporting the findings of Merrell and colleagues (2008). Perhaps the difficulty in systematically identifying students with internalizing behavior disorders is a result of teachers not being commonly instructed in their prevalence or symptoms. Study outcomes suggest the need for additional work to increase educators’ awareness of their role in screening students and identifying those who need treatment and support at the levels of both the school and the classroom.

Limitations and Recommendations

One limitation of this study is the small sample size of 22 students: 12 identified with the SSBD and 10 recommended by the school behavior team. This is a small population from which to draw definitive conclusions regarding the Strong Kids curriculum. Future efforts should replicate and investigate the findings of this study with a larger sample size and with participants who represent a more culturally diverse population, which will likely ensure that meaningful generalizations can be drawn from this study and then shared to improve practice.

As researchers and practitioners continue to work with identification factors, the issue of comorbidity becomes prominent. Students with comorbid internalizing and externalizing disorders have symptoms and needs that are complex and difficult to discern. Future studies could evaluate the effects of Strong Kids on students who demonstrate primarily internalizing symptoms, those who demonstrate primarily externalizing symptoms, and those whose symptoms appear to be intertwined.

Another limitation of this study was the use of a pretest–posttest design and the absence of a control group. We planned to randomly assign participants to two groups—one to receive instruction first and one to act as a control group—but because the sample size was small,
all participants received the Strong Kids intervention concurrently and were analyzed as one group. We acknowledge that this study was only an initial attempt to evaluate the impact of Strong Kids on students at risk for internalizing disorders and that more work is needed, implementing more rigorous experimental designs with diverse populations and a larger sample size.

As the Strong Kids curriculum continues to be implemented in schools, researchers should investigate the effectiveness of the curriculum within the PBS framework—for example, comparing its use as a universal-, selective-, and individual-level intervention. At the universal level, researchers and educators should focus on the preventive use of Strong Kids and determine whether students are less likely to experience internalizing disorders if they participate in the instruction early on. This will further the research of Merrell and colleagues (2008) in determining which uses of the Strong Kids curriculum are most effective.

Social validity was a secondary purpose of this study; nevertheless, a recommendation in this area has emerged. With statistically significant and meaningful decreases in internalizing symptoms and increases in knowledge of content (particularly for students identified by the SSRD), social validity data offer support for using the Strong Kids curriculum to address the social and emotional needs of students at risk for internalizing disorders. Before the study, general educators perceived a strong need for social-emotional curriculum to be taught in schools. At the conclusion of the study, the teachers reported an overall positive, favorable response towards the improvement of social skills, and means of attending to social-emotional issues. However, students’ perceptions were not as favorable, with fewer than half of them recognizing or acknowledging a positive effect. Further research should include strategies for increasing educators’ awareness of the need for social-emotional interventions within schools, as well as the effect that such interventions produce on all students—particularly, those with identified needs.

REFERENCES


