Summer 2015

Effects of the Strong Kids Curriculum as a Targeted Intervention for Students At-Risk for Developing Depressive Disorders

Danielle D. Williams PsyD
University of Southern Maine

EFFECTS OF THE *STRONG KIDS* CURRICULUM AS A TARGETED INTERVENTION FOR STUDENTS AT-RISK FOR DEVELOPING DEPRESSIVE DISORDERS

Danielle D. Williams

B.Mus. Anna Maria College, 2004

M.S. University of Southern Maine, 2013

A DISSERTATION

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Psychology

(in School Psychology)

The University of Southern Maine

August, 2015

Advisory Committee:

Rachel Brown, Associate Professor of Educational and School Psychology, Advisor

Mark W. Steege, Professor of Educational and School Psychology

Bette Katsekas, Associate Professor of Counselor Education

Patricia Red, Lecturer in Special Education

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

LIBRARY RIGHTS STATEMENT

In presenting the Dissertation, EFFECTS OF THE *STRONG KIDS* CURRICULUM AS A TARGETED INTERVENTION FOR STUDENTS AT-RISK FOR DEVELOPING DEPRESSIVE DISORDERS, in partial fulfillment of the requirements for the Psy.D. in School Psychology at the University of Southern Maine, I agree that the Library shall make it freely available for review. I further agree that permission for copying, as provided for by the Copyright Law of the United States (Title 17, U.S. Code), of this Dissertation for scholarly purposes may be granted. It is understood that any copying or publications of this Dissertation for financial gain shall not be allowed without my written permission.

I hereby grant permission to the University of Southern Maine Library to use my Dissertation for scholarly purposes.

Danielle D. Williams *10 July 2015*

Danielle D. Williams Date

EFFECTS OF THE *STRONG KIDS* CURRICULUM AS A TARGETED INTERVENTION FOR STUDENTS AT-RISK FOR DEVELOPING DEPRESSIVE DISORDERS

By Danielle D. Williams, M.S.

Dissertation Advisor: Dr. Rachel Brown

An Abstract of the Dissertation Presented in Partial Fulfillment

of the Requirements for the

Degree of Doctor of Psychology

(in School Psychology)

August, 2015

Children who show signs of depression are at greater risk of having depression as adults as well as developing comorbid conditions. A multi-tiered system of support (MTSS) approach is currently the best evidence-based method for addressing behavioral and mental health concerns in a school setting. At this time, few research-based interventions exist that adequately address internalizing behaviors such as those associated with depression. *Strong Kids* is an evidence-based social-emotional learning curriculum that can be used at both the universal and secondary levels of prevention. It is designed to address internalizing behaviors; however, it has only been tested as one chronological series of lessons. This makes immediate response to

a student's need – a hallmark of secondary prevention in MTSS – challenging because the *Strong Kids* program can take a minimum of 6 weeks for delivery. The current single-case design research evaluated the delivery of *Strong Kids* in an elementary school on a continuously rotating 4-week basis, such that students referred for the intervention began at the beginning of any given week and continued to receive the intervention until all lessons were received. Three hypotheses were tested: (a) Students at risk for developing depressive disorders would show reduced risk of depression following the *Strong Kids* intervention; (b) this intervention would be effective for students regardless of the lesson on which they begin the intervention; and, (c) any differential effects among students beginning the intervention during different weeks would be small and not reach the level of clinical significance. The obtained findings and implications for school practices are discussed.

ACKNOWLEDGEMENTS

I offer my sincere thanks to Dr. Rachel Brown for her support, patience, and guidance throughout my time as her advisee.

I would also like to thank Dr. Mark Steege, Dr. Bette Katsekas, and Pat Red for their contributions to the design and quality of this study.

For learning, problem-solving, caring, and remaining committed to this project to the end, I graciously thank Crystal Duguay.

Thank you to all the administration, teachers, staff, and students who cooperated with this project and made it possible.

To my mother:
Yes, you told me. Thank you.

To Will:
You have been and done more than I ever could have asked. Thank you for standing beside me through it all.

To EJ:
It's all for you, sweet boy.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: Literature Review

Research about effective school-based behavior interventions suggests that proactive behavior support within a multi-tiered model is the current standard for best practice (Gresham, 2005; Tilly, 2008). Commonly known as positive behavior interventions and supports (PBIS), it is often implemented through the use of proactive behavior support in combination with a problem-solving approach for those instances in which reactive strategies also are necessary (Chafouleas, Riley-Tillman, & Sugai, 2007; Deno, 2005). This methodology is based on research which suggests that prevention, modeled after a public health approach, increases desired student behavior while simultaneously decreasing student problem behavior (Stormont, Reinke, Herman & Lembke, 2012). One of the defining characteristics of a multi-tiered approach is the availability of a continuum of interventions based on the needs of students.

Although the specific number of tiers varies from one school to the next, at least three must be present: a universal or primary tier that supports all students, a targeted or secondary tier consisting of group-based interventions for a limited number of students who do not respond to universal supports, and an intensive or tertiary tier of individualized support for the small number of students who do not respond to the first two tiers. The function of advanced tier supports is to provide students additional opportunity to learn and practice new skills and contact reinforcement when those new skills are used appropriately. Current research literature indicates that schools have focused primarily on provision of universal tier supports as well as tertiary level supports (Stormont, Lewis, Beckner, & Johnson, 2008); however, the number of empirically supported interventions that exist to serve those students for whom secondary level

supports would be beneficial appears to be insufficient to address the current need (Hoagwood et al., 2007; United States Department of Education, n.d.). This is particularly true for students whose problem behaviors are internalizing in nature, including those students whose symptoms are consistent with depression (Hoagwood et al., 2007).

Effects of Internalizing Symptoms

Students with internalizing symptoms often go undetected in the public school system (Stormont et al., 2012). This is because the first students to be referred for extra behavioral support are usually those whose behavior actively impedes teaching and learning in the classroom, and these behaviors are nearly always external. Although teachers might be able to recognize the symptoms of internalizing disorders, such as a low level of social contact, limited expression, and low activity level, these behaviors can be easily missed if other students often are loud, out of their seats, or engaging in aggression in the classroom. Even more challenging for teachers is that some students may engage in both internalizing and externalizing behaviors (Merrell, 2008), making referral for the appropriate intervention challenging. Male students in particular are more likely to display both internalizing and externalizing symptoms when experiencing depression, whereas female students are more likely to exhibit primarily internalizing behavior (American Psychiatric Association, 2013).

Although internalizing behaviors are usually not very disruptive to the classroom process, they should still be taken seriously given their implications for students' long-term mental health and academic outcomes. Research suggests that depressive disorders are the leading cause of disability in the United States, and the second leading cause

worldwide (Ferrari et al., 2013). Children who experience symptoms of depression are more likely also to experience symptoms of anxiety than children without signs of depression; children whose symptoms rise to the level of a depressive disorder are more likely to develop additional serious psychiatric and medical disorders, such as personality disorders and heart disease, later in life (American Psychiatric Association, 2013). Earlier onset of a diagnosed depressive disorder is correlated with greater risk of psychiatric hospitalization and suicide (Cicchetti & Toth, 1998), yet because prevalence of depression is lower during childhood than adolescence or adulthood (Maughan, Collishaw, & Stringaris, 2013), few evidence-based treatments for elementary-aged students are available (Stormont et al., 2012).

Internalizing symptoms that fall below the level required for diagnosis are not rare phenomena (Hammen & Rudolph, 2003), and often are signs of a developing disorder, even in children as young as six years of age (Ialongo, Edelsohn, & Kellam, 2001). Some studies suggest that between 10-30% of school-aged children experience symptoms that impact daily life, but do not reach the threshold for psychiatric diagnosis (Cooper & Goodyer, 1993; Garrison, Jackson, Marsteller, McKeown, & Addy, 1990). Available research evidence, however, suggests that the development of internalizing disorders can be prevented with early intervention (National Resource Council and Institute of Medicine, 2009), and school-based interventions can play an integral role (Herman et al., 2009).

Researched-Based Intervention

The United States Department of Education's What Works Clearinghouse (n.d.) lists current school-based targeted behavior interventions that have been reviewed by

staff members of the Institute of Education Sciences. This information is accompanied by an interpretation of the evidence base for each intervention, both regarding the size of the evidence base and the effectiveness suggested by the research; formal reports for most interventions also are available. As of January 2014, a search on the What Works Clearinghouse website for all interventions for behavior yielded 20 results. But of these, there were only four interventions that could be used at the targeted (i.e., Tier 2) level: *Early Risers*, *The Incredible Years*™, *Fast Track: Elementary School*, and *Coping Power*. Only two, *Early Risers* and *Fast Track: Elementary School*, had been reviewed for effects on internalizing problems; results were either not promising, as was the case for *Early Risers* (United States Department of Education, 2012), or only potentially positive and based on a small amount of evidence, as with *Fast Track: Elementary School* (United States Department of Education, 2014a). *Early Risers* was designed to be a program used as early intervention for students with externalizing behaviors, particularly aggression and other antisocial traits (August, Egan, Realmuto, & Hektner, 2003). It is a multicomponent intervention, requires cooperation and collaboration among school personnel, community providers, and the family and child using the intervention, and is often an intervention in which students and families participate for a year or longer. Although its impact on social outcomes and academic achievement were rated as "potentially positive" in the 2012 United States Department of Education report (p. 1), impact on both externalizing and internalizing symptoms appeared to have no effect. Despite the potential of this program for positive effects, its long-term duration may not fit well with multi-tier models such as MTSS and PBIS that utilize short-term interventions in which progress monitoring occurs regularly (Stormont et al., 2012).

Similar to *Early Risers*, *Fast Track: Elementary School* was developed as a comprehensive early intervention program for students displaying chronic antisocial behavior characteristics (Nelson & Schulz, 2009). It is, by design, a long-term program meant to "facilitate the development of social and self-regulation skills" (p. 156) thought by the developers to be the deficits partially responsible for severe, externalizing behavior. Although such a long-term program has demonstrated potentially positive results (United States Department of Education, 2014a), its design is not appropriate for targeted-level intervention.

The What Works Clearinghouse is not the only group of researchers exploring evidence-based interventions for children; Division 53 of the American Psychological Association, representing the Society of Child and Adolescent Clinical Psychology, manages a list of evidence-based treatments for youth (American Psychological Association, 2014). The recommendations presented by this group for evidence-based interventions for internalizing problems are simple; the only well-established evidence-based intervention for children with depression is cognitive-behavioral therapy (CBT). Nonetheless, CBT can take on many forms and include many components (Merrell, 2008), and in some ways this further complicates the job of the school-based clinician. There are indeed many evidence-based CBT methods that have been validated in research studies, but far fewer documenting effects when used in a multi-tier intervention framework. It appears that school mental health personnel might benefit from additional research about which CBT methods work best for different levels of intervention.

Several manual-based CBT programs exist that have a solid base of research to support their use (Merrell, 2008). The *ACTION* and *Taking ACTION* programs are

exemplars in terms of empirical support for use with children ages 8-18 who exhibit symptoms of depression. *Coping Cat* and the related *C.A.T.* program are CBT treatments with a remarkably strong evidence base for school-aged youth with symptoms of anxiety. The challenge with these interventions, however, is that the evidence base upon which they are built has come primarily from trials conducted in clinical – not school – settings (Stormont et al., 2012). Although some flexibility in the use of manual-based treatments is common and often considered acceptable (Merrell, 2008), it can be difficult to reconcile this approach with empirical research that is based on strict adherence to treatment protocols (Shirk, Jungbluth, & Karver, 2012). Yet, in some cases, changes may need to be made in order to make these interventions work within a public school setting, particularly one that embraces a multi-tiered approach to behavior management (Merrell, 2008; Stormont et al., 2012). The typical length of the *Taking ACTION* or *Coping Cat* interventions ranges from 16-30 weekly sessions. Considering time off for school breaks, cancellations, field trips, and any other reason why school may not proceed as planned on a given day, this time frame is roughly one half to one whole school year (Merrell, 2008). It is important that interventions be designed so that a student can be referred for and begin accessing the appropriate intervention at any time, not only at the beginning of a cycle of sessions (United States Department of Education, 2014b); this would be challenging within these programs. Finally, the intervention *Taking ACTION* is designed for use with females only (Stark, Streusand, Arora & Patel, 2012). Given the length and specificity of these specific interventions, they may be better suited to tertiary level intervention.

The *FRIENDS* series of programs, originally modeled after *Coping Cat*, is another prevention-based model aimed at internalizing problems (Pahl & Barrett, 2010). The program began as an adaptation of *Coping Cat* for use in Australia, and has developed into a series of programs for children ranging from age four through adulthood. While still primarily used to address anxiety, and endorsed by the World Health Organization (2004) for that purpose, international research has also explored its use for children at risk of depression with promising results (Barrett, Farrell, Ollendick, & Dadds, 2006; Gallegos, Gómez, Rabelo, & Gutiérrez, 2012; Kösters et al., 2012). Research on the use of the *FRIENDS* programs in the United States is currently underway (Pathways Health and Research Centre, 2014).

Another CBT intervention for children with depression is the Penn Prevention Project, created at the University of Pennsylvania (Jaycox, Reivich, Gillham, & Seligman, 1994). The project began as an effort to explore the efficacy of a prevention protocol targeted to at-risk youths between 10-13 years of age. Initial results were promising; data collected immediately post-treatment and at six-month follow-up suggested that students who had participated in the intervention displayed far fewer symptoms of depression. A two-year follow up yielded similar results (Gillham, Reivich, Jaycox, & Seligman, 1995), and the intervention was listed as a promising evidence-based modality by Division 53 of the American Psychological Association (Stormont et al., 2012). However, at 30- and 36-month follow-ups, the gains made by the students involved in the intervention had faded, and further research into the introduction of booster sessions was encouraged (Gillham & Reivich, 1999).

Another approach to supporting students with internalizing disorders includes instructional materials focused on Social Emotional Learning (SEL). SEL curricula are becoming increasingly prevalent in schools as a method by which to reduce mental health and behavioral issues through prevention. One such program being used in schools is the Strong Kids curriculum (Merrell, 2008), including the Strong Start variation for students in second grade and younger or Strong Teens for those in upper grades. Like most SEL programs, Strong Kids and its related programs were designed as universal interventions provided to all students, able to be taught by a range of professionals within a school. Research extending Strong Kids for use at a more targeted level is minimal, although at least one successful project occurred through identification of students at risk for developing internalizing disorders and providing a slightly augmented curriculum apart from the general classroom (Marchant, Brown, Caldarella, & Young, 2010). This research, although not specifically designed for use as a targeted intervention within a multi-tiered model, suggested that the use of Strong Kids as an intervention for students who displayed internalizing symptoms was promising.

The purpose for this study was to further investigate the use of Strong Kids at the targeted level. Additionally, it addressed the feasibility of using the intervention within a multi-tiered framework, within which quick access to intervention following referral is necessary. The following research questions were addressed in this study:

1. Will use of the Strong Kids intervention reduce students' symptoms of depression, as measured by student report on the Children's Depression Inventory, Second Edition (CDI-2) and school satisfaction items from the Multidimensional Students' Life Satisfaction Scale (MSLSS)?

2. Will the Strong Kids intervention be effective when lessons are presented in an order other than that as prescribed by the authors of the program?
3. Will differential effects exist for students who received the Strong Kids intervention in the order designed by the authors and those students who did not?

CHAPTER 2: Method

Design

This study used a variation of the single-case, multiple baseline across subjects design. In a traditional multiple baseline across subjects design, subjects were added to the study one at a time after evidence of a stable baseline; given the group nature of the *Strong Kids* intervention, however, this study deviated from that methodology and allowed for more than one student to begin intervention at the same time. Part of the design logic of the multiple baseline across subjects design is to demonstrate a functional relationship between intervention and behavior change by replicating that change at different times for different participants, since not all participants receive the intervention at the same time. The net effect in the current study was a multiple baseline across intervention groups design.

Participants

Students in grades four and five in one elementary school in the Northeast were asked to participate. All of the students in the target grades who were not recipients of school-based mental health counseling or social work services were asked to complete the school satisfaction items from the *Multidimensional Students' Life Satisfaction Scale* (MSLSS; Huebner, 2001). The fifteen students with the lowest scores – suggestive of a low level of school satisfaction, and thus, for purposes of this study considered "at risk" for the development of depression – were considered for inclusion in the study and informed parental permission as well as student assent for participation were obtained. At this stage, further screening to identify students who received mental health services outside of the school setting was conducted by asking parents during the process of

obtaining consent if other services were being used. Students who were participating in mental health treatment outside of school were excluded so that such treatment was not a confound. All procedures were reviewed and approved by a university Institutional Review Board (IRB) before the study began.

Materials

The *Strong Kids* curriculum for grades 3-5 was adapted for use in this study. The curriculum as packaged includes 12 sessions of 45-55 minutes each of which can be used once or twice weekly, along with one booster session to be provided several weeks after completion. To adapt *Strong Kids* as a multi-tiered targeted intervention, with capacity for immediate availability to students – defined as access to intervention within two school weeks of referral – a school-specific schedule of sessions was created. This schedule accommodated sessions that needed to be held in sequence as well as sessions that were appropriate for a new student to join. The schedule included up to five sessions per week, although not all students attended all five lessons. This schedule can be found in Appendix A.

Dependent Measures. The effects of the intervention were measured by the *Strong Kids* embedded assessments (Merrell, 2007), student support cards created by the principal investigator, and the school satisfaction items from the Multidimensional Student Life Satisfaction Scale (MSLSS; Huebner, 2001), and the Children's Depression Inventory, Second Edition (CDI 2; Kovacs, 2010).

Strong Kids *measures*. The *Strong Kids* assessment includes a 10-item symptom test and a 20-item knowledge test, intended to be used as pre-test and post-test measures (Merrell et al., 2007); for purposes of this study, the knowledge test was used as intended,

while the symptom test was also used for baseline data collection and weekly progress monitoring. Although specific information on the reliability and validity of these tests was not readily available, widespread research on the success of *Strong Kids* when measured by these assessments alongside other measures suggests that these are appropriate for purposes of this research (Harlacher & Merrell, 2010; Kramer, Caldarella, Young, Fischer, & Warren, 2014; Merrell, Juskelis, Tran, & Buchanan, 2008). In addition, *Strong Kids* student support cards were used to measure the extent to which each participant exhibited changed behaviors in class. These cards were matched to the school's PBIS behavior expectations: Be safe, be respectful, and be responsible. After each lesson, student support cards were given to classroom teachers for each student participating in the intervention. The classroom teacher was to mark whether the target behaviors were observed during a specified time interval. Changes in the frequency of observed prosocial behaviors were evaluated. These measures can be found in Appendices B and C.

Other measures. The MSLSS school satisfaction scale includes eight items that specifically address students' attitudes toward the school environment (Huebner, 2001). The MSLSS is an empirically based, norm-referenced global measure of life satisfaction in children (Gilman, Huebner, & Laughlin, 2000; Greenspoon & Saklofske, 1997; Huebner, 1991; Lucas, Diener, & Suh, 1996). Several studies exploring the reliability and validity of the MSLSS have suggested internal consistency coefficients and test-retest coefficients for both two- and four-week periods between .70 and .95 (Greenspoon & Saklofske, 1997; Huebner, 1994; Huebner, Laughlin, Ash, & Gilman, 1998). These same studies also tested the validity of the measure, and demonstrated convergent and

discriminant validity through comparison to other self-report well-being indices. Research suggests that scores on the school satisfaction scale are correlated with depression symptoms (Athay, Kelley, & Dew-Reeves, 2012; Huebner, Antaramian, Hills, Lewis & Saha, 2010), thus making them a suitable proxy for screening and progress monitoring when used alongside the *Strong Kids* embedded measures and the CDI 2. The school satisfaction items, which were used to screen potential participants and for monitoring progress, can be found in Appendix D. In order to determine whether students in the intervention experienced a reduction in risk for depression, they also completed the CDI 2 as a pre- and post-intervention measure; to ensure all participants could understand the CDI 2 questions, regardless of reading skills, it was presented orally. The CDI 2 has 28 items that are specific to symptoms of depression in children (Kovacs, 2010).

Procedures

After parent permission and student assent for participation were obtained, students were enrolled in the study. During the first intervention session, students completed the CDI 2 and the 20-item *Strong Kids* knowledge test. Students who scored within the clinically significant range on the CDI 2 were ruled out for participation in this study, and were referred for mental health services using the process found in Appendix D. Baseline data were collected twice per week using both the school satisfaction items from the MSLSS and the *Strong Kids* Symptom Test. The first students to display stable baseline over three or more data points were chosen to begin intervention. The remaining students continued to complete weekly baseline measures. The intervention was delivered by a staff member of the school who had been trained by the principal investigator. Intervention lessons primarily followed the scripted procedures outlined in

the *Strong Kids* manual (Merrell, 2007) except where they were modified to allow new students to join the group at specified intervals or to conform to the existing PBIS framework in the school in which the research took place; general implementation notes and outlines for each lesson, including scripts modified for this study, can be found in Appendices E and F. Every week, an additional one to three students was eligible to join the intervention group based on evidence of stable baseline, until a total of six students were included.

Semi-weekly progress monitoring using both the *Strong Kids* 10-item symptoms test and the school satisfaction items from the MSLSS was ongoing throughout intervention. In addition, the *Strong Kids* group leader completed the *Strong Kids* assessment of each participant at the beginning of Lesson 1 as a pre-test, and at the end of Lesson 10 as a post-test. The participants completed the CDI 2 on a staggered basis at the beginning of intervention and again after Lesson 10 to provide additional information about whether the intervention was related to a change in depression symptoms. Throughout the intervention, the principal researcher performed integrity checks by randomly attending at least two intervention group meetings every week and completing the Integrity Checklist found in Appendix G. In addition, the seriousness of each participant's depression symptoms was carefully reviewed and monitored by the researcher and a licensed psychologist for the duration of the intervention. When a participant's monitoring responses or behavior suggested that he or she needed clinical attention, the student and parent(s) were notified immediately and an appropriate referral initiated. This occurred with two students and in both cases, in addition to providing a

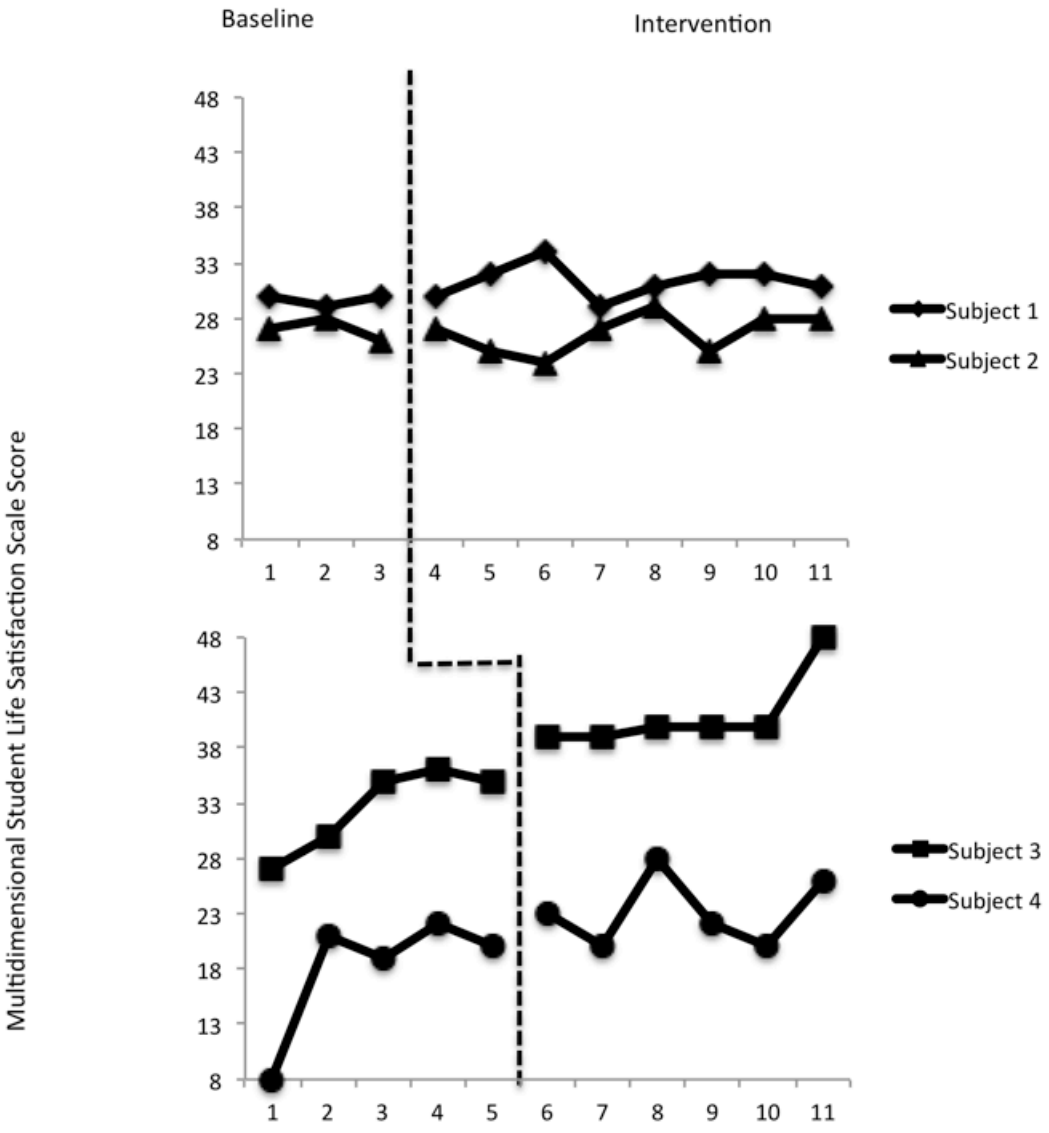
referral for mental health services, the student and parents were reminded of their right to have the student discontinue the study without loss of care or any other repercussions.

CHAPTER 3: Results

Of the 15 students with the lowest scores on the MSLSS during screening, 11 parents provided consent for participation. Ten of those 11 students provided assent for participation. One student was dropped from the study following a full week of absences from school. Two additional students were dropped from the study upon recognition that they had not fully understood the questions on the MSLSS and therefore had provided invalid data. Of the remaining seven, two students entered the intervention during week one, two additional students during week two, and two more students during week three. The two students who entered the intervention during week three both scored in the clinical range on the CDI 2 and never began intervention procedures; instead, they were referred for clinical-level intervention. The remaining student was not added to the intervention due to endorsement of the highest possible score on the MSLSS and lowest possible score on the *Strong Kids* Symptom Test over five data points, suggesting little to no risk for depression. Treatment integrity checks took place randomly twice per week during the four weeks that the study took place. Scores on all integrity checks reached at least 90%, with a mean score of 96.25%.

Figure 1 depicts the change in score on the MSLSS for the four students who participated in both baseline and intervention phases. The surveys were co-scored by the primary investigator and by a research assistant, with inter-observer agreement calculated at 98%. Changes in scores were inconsistent between participants, and appear unrelated to differences in socioeconomic status or academic achievement between participants. Subjects 1 and 2 both evidenced stable scores throughout baseline and intervention conditions. Subjects 3 and 4 demonstrated more growth during intervention, however,

Figure 1. *Change in score on the Multidimensional Students' Life Satisfaction Scale during baseline and intervention.*



Subject 4 endorsed an initial baseline score that should be considered an outlier when compared with other data points. The percentage of non-overlapping data points, displayed in Table 1, also suggests variability in the data among participants.

Figure 2 depicts the change in score on the *Strong Kids* Symptom Test. The tests were co-scored by the primary investigator and by a research assistant, with inter-

Table 1.

Percentage of non-overlapping data points on the Multidimensional Students' Life Satisfaction Scale (MSLSS) and Strong Kids *Symptom Test between baseline and intervention.*

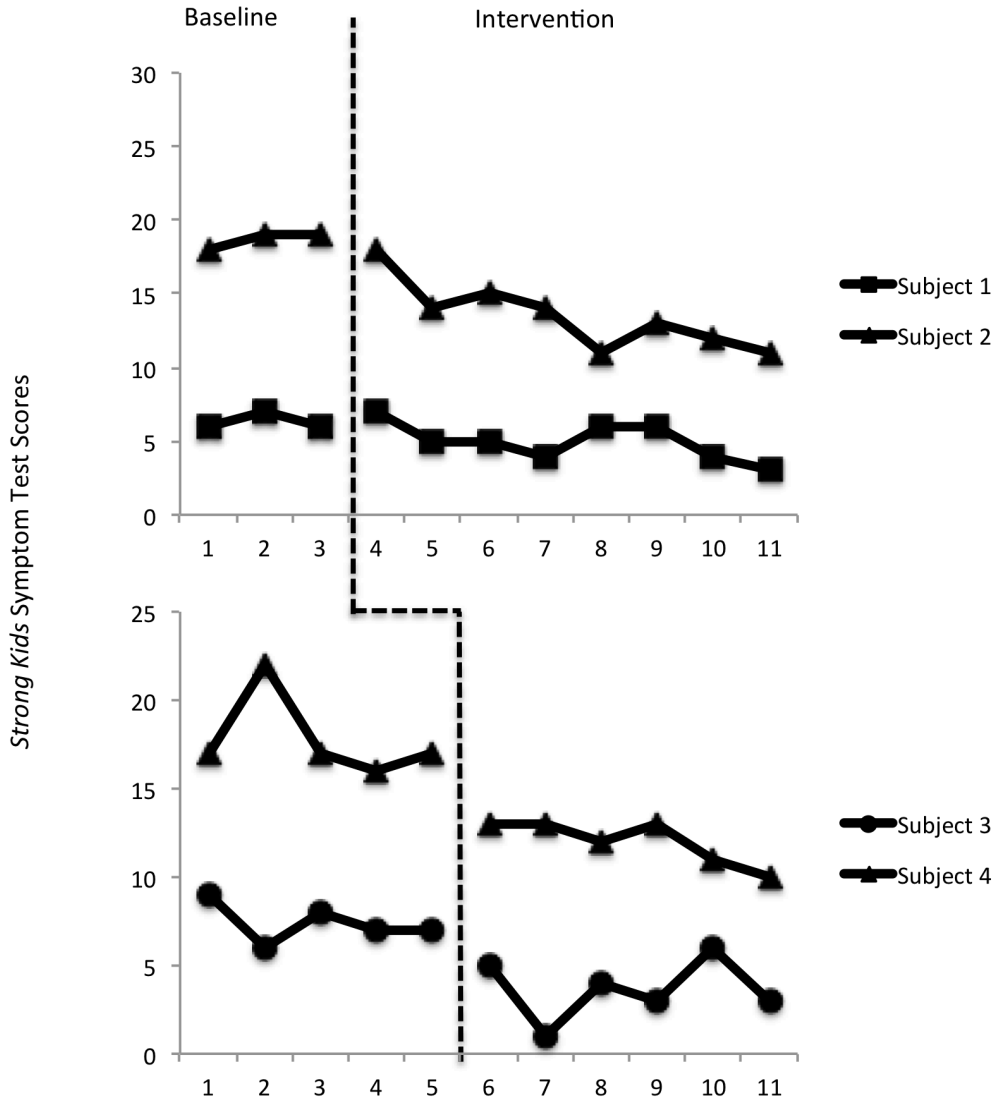
	MSLSS	*Strong Kids* Symptom Test
Subject 1	75%	63%
Subject 2	13%	88%
Subject 3	100%	83%
Subject 4	50%	100%

observer agreement calculated at 100%. All participants evidenced at least a modest decline in scores on this measure, indicating improvement. Subjects 2 and 4, who began with the highest baseline scores on the Symptom Test, evidenced the most significant declines. The percentages of non-overlapping data points (PND) are provided with those for MSLSS scores in Table 1.

The Support Cards that were created to promote generalization outside of the group setting were not filled out and returned consistently by teaching staff. 100% of support cards were returned for Subject 1, while only 40% were returned for Subject 2, 50% were returned for Subject 3, and none were returned for Subject 4. As a result of this inconsistency, the ratings from these cards were not interpreted.

Pre- and post-test data are included in Tables 2 and 3. Table 2 displays the percentage of items answered correctly on the *Strong Kids* Knowledge Test. All participants evidenced at least slight improvement from pre-test to post-test. Table 3 includes the T-scores representing the overall Total composite score on the CDI 2 at pre-

Figure 2. *Change in score on the* Strong Kids *Symptom Test during baseline and intervention.*



and post-intervention. These scores decreased modestly in the three subjects whose pre-test scores were low, but remained the same for Subject 2, whose scores were the only scores in the elevated range as described by this measure.

Table 2.

Pre- and post-test percentage correct on the Strong Kids *Knowledge Test*

	Pre-Test	Post-Test
Subject 1	70%	80%
Subject 2	65%	75%
Subject 3	65%	80%
Subject 4	65%	70%

Table 3.

Pre- and post-test T-scores on the Children's Depression Inventory, Second Edition (CDI 2)

	Pre-Test	Post-Test
Subject 1	47	44
Subject 2	69	69
Subject 3	42	40
Subject 4	52	46

CHAPTER 4: Discussion

Evidence was mixed as to the efficacy of the *Strong Kids* curriculum being used as a secondary tier intervention. MSLSS scores were inconsistent across participants both in relation to the trend of scores, and the percentage of non-overlapping data points, which ranged from 33-100%. However, the MSLSS directly measured only school satisfaction, and was used as a proxy for depression symptoms. The *Strong Kids* Symptom Test did measure depression symptoms directly, and scores on this measure demonstrated a more dramatic change over time. The greatest change was evident in students whose scores were higher at baseline, suggesting greater depression risk. The declines demonstrated by Subjects 2 (88% PND) and 4 (100% PND) are particularly notable, and suggest that the *Strong Kids* program is effective at targeting the specific symptoms that the authors intended to target. In addition, since these students were in two different baseline groups, these scores also lend support to the research hypotheses that the *Strong Kids* program is potentially effective when lessons are presented in an alternative order and that differential effects for students taking the lessons in an alternative order are not significant.

The percentage of non-overlapping data points on the Symptom Test also suggests a stronger effect than was measured with the MSLSS. Subject 1, who demonstrated 63% non-overlapping data points, started with a very low score and had little room for change. All other subjects demonstrated percentages of 83-100%. Pre- and post-test scores also reflected a modest increase in knowledge across participants, as measured by the students' accuracy on the *Strong Kids* Knowledge Test. Pre-test scores ranged from 65-75% correct, while post-test scores ranged from 75-80% correct.

Change in CDI 2 scores from pre- to post-test was small for all participants, although only one student scored in the elevated range at either pre- or post-test. The CDI 2 T-scores for the three participants in the average range evidenced small declines, while the T-score for the student with an elevated score remained the same. Given that this student was only one point from the clinical range, at which referral for a clinical level of service would have taken place, this may reflect that the *Strong Kids* program was not sufficient to meet her level of need. Additionally, this student's Symptom Test scores evidenced 88% non-overlapping data points, while her Knowledge Test score increased from 75% to 85% correct, suggesting that the intervention was successful when measured using the embedded assessments included in the curriculum. Nonetheless, some of her symptoms, as measured on the CDI 2, appear to have been beyond those directly impacted by the *Strong Kids* curriculum.

This study's exploration of *Strong Kids* as a targeted (i.e., Tier 2) intervention was an extension of the literature base supporting the use of the program at the universal level. Prior research confirmed that *Strong Kids* has a robust effect when used as a social-emotional curriculum taught by classroom teachers to their students (Harlacher & Merrell, 2010; Kramer et al., 2014; Merrell et al., 2008). For example, Merrell and colleagues published three concurrent pilot studies in 2008 reporting on the use of *Strong Kids* with a group of 5th grade students in a general education setting and a group of 6th and 7th grade students in a general education setting, as well as a third group of high school students in a special education setting for students diagnosed with emotional disturbance using the *Strong Teens* version of the curriculum. In all three studies, students evidenced both statistically and clinically significant changes in behavior.

The current findings offer additional empirical support of the potential benefits of using the *Strong Kids* program as a targeted intervention. Specifically, all of the participants reported improved scores on the program-specific measures, including both the symptoms and knowledge of managing stress. These findings are similar to those of Marchant, Brown, Caldarella, and Young (2010) whose pilot study of *Strong Kids* as a targeted intervention indicated potential benefits but also included mixed results. Marchant et al. used a quasi-experimental group design with 22 students in grades three through five with two lessons per week over six weeks. The major difference between Marchant et al. and the current study is the dependent measures used to evaluate effects; Marchant et al. used the Achenbach System of Empirically Based Assessment (ASEBA) Teacher Report Form (TRF; Achenbach & Rescorla, 2001) and self-report using the short version of the Internalizing Symptom Scale for Children (ISSC; Merrell & Walters, 1998). While the TRF scores decreased between pre-and post-test, that decrease did not reach statistical significance. However, the ISSC scores evidenced statistically significant decreases both at post-test and at follow-up (Marchant et al, 2010).

Although there were some encouraging findings about the effects of *Strong Kids* as a targeted intervention in both the Marchant et al. (2010) and current studies, a common challenge was the lack of demonstrated effects on measures not designed by the *Strong Kids* authors. In both studies the measures connected to the curriculum (e.g., ISSC, Strong Kids Symptoms Test) were more sensitive to the students' reported changes in symptoms than external and previously validated child symptom rating scales such as the ASEBA-TRF and CDI 2. This result is vexing because it is not clear why the curriculum does not lead to larger score changes on validated measures. The

improvements observed on the program-related measures are encouraging in that it appears that students who were at greater risk for internalizing problems have demonstrated some improvement. Nonetheless, validation with at least one empirically-based instrument is necessary to confirm whether the changes included reduction in all of the symptoms included in conditions like anxiety and depression, or if *Strong Kids* helps with only a subset of symptoms.

Generally, the current results are in line with prior research in that all participants showed improvement on at least one measure, and some showed improvement on several. Although the current study did not produce results as strong as those observed when *Strong Kids* has been used at the Tier 1 universal level, the findings are in line with those of the most similar prior study (Marchant et al., 2010). In addition, the results suggested that *Strong Kids* produced a more significant effect in the one student whose symptoms were more severe at the start of intervention. Additional research to replicate and extend the current findings is recommended to determine the settings and students that are the best match for different presentations of the *Strong Kids* curriculum.

Limitations and Future Research

A number of limitations apply to this study. The total number of participants was smaller than intended. A larger number of participants making possible a third group would have strengthened the research design and reduced threats to internal validity. Although this was attempted in the current study, certain students' individual needs prevented them from participating in the intervention after baseline. Despite having 10 students in the initial pool at the beginning of the study, the unique rule-out factors for participants suggests that a bigger pool of students should be used in future studies. It is

also possible that different dependent measures might have been more sensitive to depression risk than those used in this study.

One of the planned dependent measures, students' scores on Support Cards, did not yield sufficient data to be interpretable and this prevents confirmation of external validity. These cards were created for use with this study to facilitate generalization and measure prosocial behavior outside of the group setting and to include a dependent measure that did not rely entirely on self-report, but teachers did not consistently complete and return these cards. This prevented measurement of the application of skills outside of the group setting, and may also have limited generalization if reinforcement was not provided when subjects practiced new skills. Without the skills cards in use, students were limited in the amount of reinforcement received for the practice of skills, thus limiting the ability to refer to this intervention as a true PBIS Tier 2 intervention. In addition, this left only self-report measures by which to measure the effectiveness of the intervention. Self-report measures are, by definition, limited to input directly obtained from subjects and therefore a more subjective measure than, for example, direct observation of behavior by a third party. The lack of the teacher rating data is a study limitation and suggests that future research should include detailed training and implementation integrity checks for the Support Cards or another method of direct observation of well-defined relevant behavior.

This study was the first to examine whether the *Strong Kids* lessons are effective when presented on a rotating basis. Future research could seek to replicate this design to provide further evidence of effectiveness, particularly given the mixed results found in this study. The obtained results are promising for medium to large schools with 500 or

more students in each building. However, it is questionable whether providing *Strong Kids* on a rotating schedule is a necessary change in small, rural schools, as the number of students who would need this type of targeted intervention at any given time is likely small. Given that no study has yet shown significant effects of a targeted application of *Strong Kids* on an external measure, research that carefully reviews the specific items on both the *Strong Kids* assessments and others that measure children's depression could be useful. It may be that *Strong Kids* effectively prevents and treats certain features of childhood depression, but not all symptoms. Additional research could also attempt to determine the upper limit of depression risk at which the *Strong Kids* curriculum is effective. It may be that the features that define a risk for childhood depression are different enough from standard measures of depression that new risk indicators need to be developed. Such information could provide clinicians with guidance about the children for whom *Strong Kids* is likely to be the most effective. Longitudinal studies to measure symptoms and behavior change over time would also provide data as to whether *Strong Kids* supports lasting change in children who participate in the program.

CHAPTER 5: Summary

The current study adds further support to the research base documenting the positive effects of the *Strong Kids* curriculum delivered as a targeted intervention (Marchant et al., 2010). Although the hypothesis that the intervention would be effective at reducing depression risk as measured by decreased CDI 2 scores and increased MSLSS scores was not supported, it should be noted that three of the four participants did not evidence elevated CDI 2 scores at pre-test, so their scores were unlikely to change significantly. These students did evidence improved scores on the *Strong Kids* program assessments. The hypotheses that *Strong Kids* could be presented on a rotating schedule without impacting the efficacy of the program and without producing differential effects in the participants appears to be supported, given decreases in *Strong Kids* Symptom Test scores for all four participants, regardless of the order in which they received the lessons. This study supports the feasibility of providing *Strong Kids* on a rotating schedule as a Tier 2 intervention, in the public school setting, although care should be taken in the selection of the most appropriate students.

REFERENCES

Achenbach, T. M. & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.) [Adobe Digital Editions version]. Retrieved from www.appi.org.

American Psychological Association. (2014). *Effective child therapy*. Retrieved from http://www.effectivechildtherapy.com/

Athay, M. M., Kelley, S. D., & Dew-Reeves, S. E. (2012). Brief Multidimensional Students' Life Satisfaction Scale – PTPB Version (BMSLSS – PTPB): Psychometric properties and relationship with mental health symptom severity over time. *Administration and Policy in Mental Health and Mental Health Services Research, 39*, 30-40.

August, G. J., Egan, E. A., Realmuto, G. M., & Hektner, J. M. (2003). Four years of the Early Risers early-age-targeted prevention intervention: Effects on aggressive children's peer relations. *Behavior Therapy, 34*, 453-470. doi: 10.1016/S0005-7894(03)80030-8

Barrett, P. M., Farrell, L. J., Ollendick, T. H., & Dadds, M. (2006). Long-term outcomes of an Australian universal prevention trial of anxiety and depression symptoms in children and youth: An evaluation of the Friends program. *Journal of Clinical Child and Adolescent Psychology, 35*, 403-411.

Chafouleas, S., Riley-Tillman, T. C., & Sugai, G. (2007). *School-based behavioral assessment*. New York, NY: Guildford Press.

Cicchetti, D. & Toth, S. L. (1998). The development of depression in children and adolescents. *American Psychologist, 53*, 221-241. doi: 10.1037/0003-066X.53.2.221

Cooper, P. J., & Goodyer, I. (1993). A community study of depression in adolescent girls: Estimates of symptom and syndrome prevalence. *British Journal of Psychiatry, 163*, 369-374. doi: 10.1159/000072294

Deno, S. L. (2005). Problem-solving assessment. In R. Brown-Chidsey (Ed.), *Assessment for intervention: A problem solving approach* [Kindle version]. Retrieved from www.amazon.com

Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J. L., … Whiteford., H. A. (2013). Burden of depressive disorders by country, sex, age, and year: Findings from the Global Burden of Disease Study 2010. *PLoS Medicine, 10*(11). doi: 10.1371/journal.pmed.1001547

Gallegos, A. R., Gómez, G., Rabelo, M., & Gutiérrez, M. F. (2012). The FRIENDS for Life program for Mexican girls living in an orphanage: A pilot study. *Behavior Change, 29*(1), 1-14. doi: 10.1017/bec.2012.8

Gillham, J. E. & Reivich, K. J. (1999). Prevention of depressive symptoms in schoolchildren: A research update. *Psychological Science, 10,* 461-462.

Gillham, J. E., Reivich, K. J., Jaycox, L. H., & Seligman, M. E. P. (1995). Prevention of depressive symptoms in schoolchildren: Two-year follow-up. *Psychological Science, 6*, 343-351.

Gilman, R., Huebner, E. S., & Laughlin, J. (2000). A first study of the Multidimensional Students' Life Scale with adolescents. *Social Indicators Research*, 52, 135-160.

Greenspoon, P. J. & Saklofske, D. H. (1997). Validity and reliability of the Multidimensional Students' Life Satisfaction Scale with Canadian children. Journal of Psychoeducational Assessment, 15, 138-155.

Gresham, F. M. (2005). Response to intervention: An alternative means of identifying students as emotionally disturbed. *Education and Treatment of Children, 28*, 328-344.

Hammen, C., & Rudolph, K. D. (2003). Childhood mood disorders. In E. J. Mash and R. A. Barkley (Ed.), *Childhood psychopathology* (2nd ed.) [Kindle version]. Retrieved from www.amazon.com

Harlacher, J. E. & Merrell, K. W. (2010). Social and emotional learning as a universal level of student support: Evaluating the follow-up effect of *Strong Kids* on social and emotional outcomes. *Journal of Applied School Psychology, 26*, 212-229.

Herman, K. C., Reinke, W. M., Parkin, J., Traylor, K. B., Agarwal, G. (2009). Childhood depression: Rethinking the role of the school. *Psychology in the Schools, 46*, 433-446. doi: 10.1002/pits.20388

Hoagwood, K. E., Olin, S. S., Kerker, B. D., Kratochwill, T. R., Crowe, M., & Saka, N. (2007). Empirically based school interventions targeted at academic and mental health functioning. *Journal of Emotional and Behavioral Disorders, 15*, 66-92.

Huebner, E. S. (1991). Further validation of the Students' Life Satisfaction Scale: The independence of satisfaction and affect ratings. *Journal of Psychoeducational Assessment, 9,* 363-368.

Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment, 6*, 149-158.

Huebner, E. S. (2001). *Manual for the Multidimensional Students' Life Satisfaction Scale*. Retrieved from https://ww2.cas.sc.edu/psyc/sites/default/files/directory_files/huebslssmanual_0.pdf

Huebner, E. S., Antamarian, S. P., Hills, K. J., Lewis, A. D., & Saha, R. (2011). Stability and predictive validity of the Brief Multidimensional Students' Life Satisfaction Scale. *Child Indicators Research, 4*, 161-168.

Huebner, E. S., Laughlin, J. E., Ash, C., & Gilman, R. (1998). Further validation of the Multidimensional Students' Life Satisfaction Scale. *Journal of Psychological Assessment, 16*, 118-134.

Ialongo, N. S., Edelsohn, G., & Kellam, S. G. (2001). A further look at the prognostic power of young children's reports of depressed mood and feelings. *Child Development, 72*, 736-747.

Jaycox, L. J., Reivich, K. J., Gillham, J., & Seligman, M. E. P. (1994). Prevention of depressive symptoms in school children. *Behaviour Research and Therapy, 32*, 801-816.

Kendall, P. C. (2012). Guiding theory for therapy with children and adolescents. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive behavioral procedures* (4th ed.). New York, NY: Guildford Press.

Kösters, M. P., Chinapaw, J. M. M., Zwaanswijk, M., van der Wal, M. F., Utens, E. M. W. J., & Koot, H. M. (2012). Study design of 'FRIENDS for Life': Process and

effect evaluation off an indicated school-based prevention programme for childhood anxiety and depression. *BMC Public Health*. doi: 10.1186/1471-2458-12-86

Kovacs, M. (2010). *Children's Depression Inventory 2*. Cheektowaga, NY: MHS.

Kramer, T. J., Caldarella, P., Young, K. R., Fischer, L., & Warren, I. S. (2014). Implementing *Strong Kids* school-wide to reduce internalizing behaviors and increase prosocial behaviors. *Education and Treatment of Children, 37*, 659-680.

Lucas, R. E., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology, 71*, 616-628.

Marchant, M., Brown, M., Caldarella, P. & Young, E. (2010). Effects of *Strong Kids* curriculum on students with internalizing behaviors: A pilot study. *Journal of Evidence-Based Practices for Schools, 11*, 124-143.

Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 22*, 35-40.

Merrell, K. W. (2007). Strong Kids *unit tests*. Retrieved from http://strongkids.uoregon.edu/unittests/strongkids.pdf

Merrell, K. W. (2008). *Helping students overcome depression and anxiety: A practical guide* (2nd ed.). New York, NY: Guildford Press.

Merrell, K. W., Carrizales, D., Feuerborn, L., Gueldner, B. A., & Tran, O. K. (2007). Strong Kids*: Grades 3-5.* Baltimore, MD: Paul H. Brookes Publishing.

Merrell, K. W., Juskelis, M. P., Tran, O. K., & Buchanan, R. (2008). Social and emotional learning in the classroom: Evaluation of *Strong Kids* and *Strong Teens*

on students' social-emotional knowledge and symptoms. *Journal of Applied School Psychology, 24*, 209-224.

Merrell, K. W. & Walters, A. S. (1998). *Internalizing Symptoms Scale for Children*. Austin, TX: Pro-ED.

National Research Council and Institute of Medicine. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK32775/pdf/TOC.pdf

Nehmy, T. J. (2010). School-based prevention of depression and anxiety in Australia: Current state and future directions. *Clinical Psychologist, 14*(3), 74-83. doi: 10.1080/13284207.2010.524884

Nelson, W. M. III & Schultz, J. R. (2009). Managing anger and aggression in students with externalizing behavior problems: Focus on exemplary programs. In M. J. Mayer, R. Van Acker, J. E. Lochman, and F. M. Gresham (Eds.), *Cognitive-behavioral interventions for emotional and behavioral disorders: School-based practice*. New York, NY: Guilford Press

Pahl., K. M. & Barrett, P. M. (2010). Interventions for anxiety disorders in children using group cognitive behavioral therapy with family involvement. In J. R. Weisz and A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (2nd ed.). New York, NY: Guilford Press

Pathways Health and Research Centre. (2014). Home page. Retrieved from http://pathwayshrc.com.au/

Shirk, S., Jungbluth, N., & Karver, M. (2012). Change processes and active components. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive behavioral procedures* (4th ed.). New York, NY: Guilford Press.

Spence, S. H., & Shortt, A. L. (2007). Research review: Can we justify the widespread dissemination of universal, school-based interventions for the prevention of depression among children and adolescents? *Journal of Child Psychology and Psychiatry, 48*, 526-542. doi: 10.1111/j.1469-7610.2007.01738.x

Stark, K. D., Streusand, W., Arora, P., & Patel, P. (2012). Childhood depression: The ACTION treatment program. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive behavioral procedures* (4th ed.). New York, NY: Guilford Press.

Stormont, M., Lewis, T. J., Beckner, R., & Johnson, N. W. (2008). *Implementing positive behavior support systems in early childhood and elementary settings*. Thousand Oaks, CA: Corwin Press.

Stormont, M., Reinke, W. M., Herman, K. C., & Lembke, E. S. (2012). *Academic and behavior supports for at-risk students: Tier 2 interventions* [Kindle version]. Retrieved from www.amazon.com.

Tilly, D. W., III. (2008). The evolution of school psychology to science-based practice: Problem solving and the three-tiered model. In A. Thomas and J. Grimes (Eds.), *Best practices in school psychology V* (pp. 17-37). Bethesda, MD: National Association of School Psychologists.

United States Department of Education. (n.d.). *What works clearinghouse*. Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved from http://ies.ed.gov/ncee/wwc/findwhatworks.aspx

United States Department of Education. (2012). *Children classified as having an emotional disturbance intervention report: Early Risers*. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_earlyrisers_060512.pdf

United States Department of Education. (2014a). *Children classified as having an emotional disturbance intervention report: Fast Track: Elementary School*. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/wwc_fasttrack_100714.pdf

United States Department of Education. (2014b). *Office of Special Education Programs Technical Assistance Center on Positive Behavior Interventions and Supports*. Retrieved from http://www.pbis.org/school/secondary_level/faqs.aspx

Walker, H. M. & Severson, H. H. (1992). *Systematic Screening for Behavior Disorders* (2nd ed.). Longmont, CO: Sopris West.

World Health Organization. (2004). *Prevention of mental disorders: Effective interventions and policy options.* Retrieved from http://www.who.int/mental_health/evidence/en/prevention_of_mental_disorders_sr.pdf

APPENDIX A: Strong Kids: Sample Four Week Rotation of Lessons

	Monday	Tuesday	Wednesday	Thursday	Friday
Week One	*About* Strong Kids*/Makeup*	Understanding Your Feelings 1	*Booster/Makeup*	Understanding Your Feelings 2	Dealing With Anger
Week Two	*About* Strong Kids*/Makeup*	Understanding Other People's Feelings	*Booster/Makeup*	Clear Thinking 1	Clear Thinking 2
Week Three	*About* Strong Kids*/Makeup*	The Power of Positive Thinking	*Booster/Makeup*	Solving People Problems	Letting Go of Stress
Week Four	*Setting Goals and Staying Active*	Understanding Your Feelings 1	*Finishing UP!*	Understanding Your Feelings 2	Dealing With Anger

Strong Kids*: Schedule for a Student Starting on Week One*

	Monday	Tuesday	Wednesday	Thursday	Friday
Week One	About *Strong Kids*	Understanding Your Feelings 1		Understanding Your Feelings 2	Dealing With Anger
Week Two		Understanding Other People's Feelings		Clear Thinking 1	Clear Thinking 2
Week Three		The Power of Positive Thinking		Solving People Problems	Letting Go of Stress
Week Four	Setting Goals and Staying Active		Finishing UP!		

APPENDIX B: *Strong Kids* Unit Tests

Pretest _____ Posttest _____

Strong Kids Unit Tests
For Students in Grades 3-8

Name _____ Grade _____ Age _____

School _____ Today's Date _____

I am a: ☐ boy ☐ girl

On the next few pages, you will be asked to answer questions about how you have been feeling over the past month. Think about how you have been feeling overall and answer the questions as well as you can. After answering those questions, you will then be asked to answer more questions to see how much you know about healthy and unhealthy ways to express feelings, thoughts, and behavior. Read each question carefully and choose what you think is the best answer to the questions.

You will not be graded on your answers. Your answers will be kept confidential. If you have any questions, please ask your teacher.

Part One: Strong Kids Symptoms Test

Directions: The following statements tell some ways that kids might sometimes feel and things they might sometimes do. Read each of these statements and decide how often they are true for you *for the past month*. Ask yourself, is this *Never True*, *Hardly Ever True*, *Sometimes True*, or *Often True* for me?" After you have decided how often the statement is true for you, make an **X** in the box that goes with that answer. There are no right or wrong answers, just choose the answer that tells how you feel.

	Never True	Hardly Ever True	Sometimes True	Often True
1. There is very little that I like to do	0	1	2	3
2. I can't deal with my problems	0	1	2	3
3. I argue with other people	0	1	2	3
4. I get so mad that I break or throw things	0	1	2	3
5. I worry about things	0	1	2	3
6. I feel depressed or sad	0	1	2	3
7. Things don't work out for me	0	1	2	3
8. I get headaches	0	1	2	3
9. I feel sick to my stomach	0	1	2	3
10. I argue with my parents	0	1	2	3

TOTAL SCORE _____

Part Two: Strong Kids Knowledge Test

Directions: This test has 20 questions about healthy and unhealthy ways to express feelings, thoughts, and behavior. Read each question carefully and pick what you think is the best answer.

TRUE-FALSE. Read each sentence. If you think it is true or mostly true, circle the T, which means "true." If you think it is false or mostly false, circle the F, which means "false."

1. T F Self-esteem is your feelings of worth for yourself.

2. T F When identifying a problem, it is important to describe how you feel and then listen to how the other person says they feel.

3. T F When people feel embarrassed, they are likely to stand tall, smile, and talk to others.

4. T F Clenched fists and trembling or shaking hands are often signs of stress.

5. T F Your friend took the last ice cream bar at the class party and you hadn't gotten one yet. A good way to deal with this is to first identify how you feel, figure out if you feel comfortable or uncomfortable, and then choose 3 positive ways to express your feeling.

MULTIPLE CHOICE. Circle the letter that goes along with the best answer for each question.

6. Devin's gym teacher tells him to try out for the basketball team. Devin thinks that he is too short and won't make it, so he decides to not try out for the team. What thinking error is Devin making?
   a. Binocular vision
   b. Black and white thinking
   c. Making it personal
   d. Fortune telling

7. An example of an emotion that is uncomfortable for most people is
   a. Excited
   b. Frustrated
   c. Curious
   d. Content

8. What is an emotion?
   a. A thought you have about a situation
   b. Your inner voice inside your head
   c. A memory you have about something that happened to you
   d. A feeling that tells you something about a situation you are in

9. Self-talk is a way to calm down after you get angry. Self-talk includes telling yourself
   a. I don't deserve this
   b. I should get angry when something like this happens
   c. I can work through this
   d. I need to stop getting angry so often

10. Which of the following statements best describes empathy?
    a. Knowing how you are feeling
    b. Not knowing why another person is feeling sad
    c. Understanding another person's feelings
    d. Thinking about another person

11. What is the meaning of the thinking error dark glasses?
    a. Looking at the whole picture
    b. Seeing only the part of a situation that makes you sad
    c. Trying to see things in a different way
    d. Thinking about only the negative or bad parts of things

12. Thinking errors occur when
    a. You see things differently than what really happened
    b. You see both the good and bad of each situation
    c. You think something different than your friend
    d. You tell yourself you shouldn't try to do something

13. Reframing is a way to
    a. See the whole picture
    b. Think about the things that make you smile
    c. Think about the situation more realistically
    d. Think about what you will do next

14. Why would you want to know how someone else is feeling?
    a. So you can leave them alone when they're angry
    b. To better understand that person's feelings
    c. To tell other people about that person
    d. To act the same when you are together

15. What does the ABCDE plan for optimism help you to do?
    a. Look at both sites of a situation
    b. View situations more positively
    c. Control your positive and negative thoughts
    d. Realize that you sometimes have no control over things

16. Conflict resolution is best described as
    a. Discussing a problem until there is a winner and a loser
    b. Arguing with another person until they see your point and give in
    c. Problem-solving so you can reach an agreement
    d. Talking about the problem until something changes the other person's mind

17. Which of the following is a positive way to express how scared you are for your parents to get your report card?
    a. Tell them why you are scared
    b. Hide your report card
    c. Tell your parents they are expecting too much from you
    d. Say that your grades were bad because other kids at school distracted you

18. Why is it important to make an agreement when you are trying to solve a problem?
    a. To understand what the other person is feeling
    b. To let the other person know what you think about the problem
    c. To make sure both people accept the solution to the problem
    d. To solve the problem more quickly

19. Which of the following is one of the best ways to deal with a problem with you are feeling stressed?
    a. Crying
    b. Talking about the problem with a friend
    c. Complaining to your mom
    d. Ignoring the problem

20. Which of the following is the better way to deal with feeling very angry when the person next to you in class keeps talking and annoying you?
    a. Yell at them and tell the to stop
    b. Call out to the teacher about the student
    c. Take their backpack to get even
    d. Stop, count to ten, and try to relax

STRONG KIDS
Knowledge Test Answer Key

Correct answers for each of the 20 items are in boldface and underlined type. The Strong Kids lesson to which the question corresponds is indicated in parentheses.

1. **T** (Lesson 1)
2. **T** (Lesson 9)
3. **F** (Lesson 2)
4. **T** (Lesson 10)
5. **T** (Lesson 3)
6. **d** (Lesson 6)
7. **b** Lesson 2)
8. **d** (Lesson 1)
9. **c** (Lesson 4)
10. **c** (Lesson 5)
11. **d** (Lesson 6)
12. **a** (Lesson 6)
13. **c** (Lesson 7)
14. **b** (Lesson 5)
15. **b** (Lesson 8)
16. **c** (Lesson 9)
17. **a** (Lesson 3)
18. **c** (Lesson 9)
19. **b** (Lesson 10)
20. **d** (Lesson 4)

APPENDIX C: *Strong Kids* Support Card

Strong Kids Support Card

Dirigo Elementary School

Student:_____ Date:_____ Teacher:_____

Place a checkmark in the corresponding box if a student demonstrates an identified skill and receives reinforcement/praise

SKILLS – UNDERSTANDING YOUR FEELINGS (1)			
TIME	BE SAFE: Talk to an adult if uncomfortable feelings are bothering you	BE RESPECTFUL: Explain your uncomfortable feelings to peers if you have been hurt	BE RESPONSIBLE: Ask for help in advance if a situation comes up in which you think you might have uncomfortable feelings
9:30 (ish)			
11:30 (ish)			
12:50 (ish)			
2:10 (ish)			
Special/Other			

APPENDIX D: MSLSS School Scale Items

I look forward to going to school.

I like being in school.

School is interesting.

I wish I didn't have to go to school. *

There are many things about school I don't like. *

I enjoy school activities.

I learn a lot at school.

I feel bad at school. *

*Reverse keyed items

APPENDIX E: Procedure for Referral for Additional Service

- Referral for Additional Service
    - To be followed if a student scores in the clinically significant range on the CDI 2 during screening, or if a student shows a stable or negative trend (based on three data points) on the *Strong Kids* Symptom Test during intervention:
        - The primary researcher will contact the student's parents to recommend referral for a clinical level of service outside of the school setting.
        - If the parent declines the option of referral, the parent contact will be documented, and a list of community providers will be sent to the parent. The parent will be asked whether s/he maintains the informed consent to participate.
        - If the parent accepts the option of referral, the parent contact will be documented, and a community provider will be contacted. If the parent indicates a preferred community provider, that will be the provider to whom the referral is made; otherwise, the referral will be made to the provider in closest geographic proximity to the family's place of residence. Referred students will be discontinued from the intervention.

APPENDIX F: General Implementation Notes

- Throughout the curriculum, there are a few important differences between the published procedures and scripts and the way that we will proceed with implementation.
    - Any time a script uses the word "unit" to describe the *Strong Kids* program, replace "unit" with "group." This is because we are providing *Strong Kids* as an intervention rather than a curriculum.
    - We will not be using handouts as overhead transparencies. Instead, provide each member of the group with a copy of the handout; the group will be small enough that each student can be provided with any individual attention necessary to understand the printed material.
    - The behavioral expectations of the group are described in the included script for Lesson 1. These expectations are intentionally aligned with the positive behavior interventions and supports (PBIS) expectations of the school building, and should be used in place of the expectations detailed in the *Strong Kids* manual.
    - Each group meeting must begin by taking attendance; any absences should be noted, and follow-up with the classroom teacher to plan for a make-up lesson should occur as soon as possible after the missed group.
    - Many individual lessons follow the lesson plans detailed in the *Strong Kids* manual, with the above notes being the only exceptions. In those

instances, the included outlines will simply state to "follow the published procedures and scripts included in the *Strong Kids* manual."

- Progress monitoring must occur at least twice per week. Scripts and procedures are included in the lesson outlines.
- Some lessons include additional or changed scripts, either in place of or in addition to the manual. These are described in the outline.
- A "Support Card" that is aligned with the school PBIS expectations should be provided to each teacher for each day of the week. The cards should contain specific behaviors to be reinforced based upon the most recent *Strong Kids* lesson. Support Cards are provided in Appendix H. The "Tips for Transfer Training" included in each lesson must also be provided to classroom teachers so that they can reinforce new skills in between group meetings. This should be done when students are walked back to class following group.

APPENDIX G: *Strong Kids* Lesson Outlines

Lesson 1: About *Strong Kids*

- Introduction
    - Script

      Today, we will begin a new group called Strong Kids. In this group, we will discuss how to understand our emotions and the emotions of others. We will also discuss how to solve problems, how to set goals, and how to think in a way that helps us in life. We will meet a few times a week for about 45 minutes. You will learn important new skills that will help you work well with others and make good choices. Everyone needs to be healthy – emotionally and physically. This group will help you learn skills that you may use to be emotionally healthy throughout your life.

- Pretest Assessments
    - Script

      First, we are going to take some brief tests that will help me to know how much you already know about your emotions and feelings. One of these tests might seem familiar to you, because you have taken it in your classroom before. One of these tests will be taken today and then again when you are all finished with Strong Kids; the others will be taken every week that you participate in the group. These tests will take about 20 minutes. It's okay if you aren't sure of the answers – just do your best work, and answer all of the questions. Raise your hand if you need help

understanding all of the questions. I will read all the questions out loud for you.

- Procedure

  At this time, students should take the *Strong Kids* knowledge test, followed by the symptom test, then the MSLSS School Items.

- Introduction to the Topics Covered in the Curriculum
  - Script

    During this 12-lesson group, we will be discussing these topics (refer to the handout, supplement 1.1). *Today's lesson will help us to understand our goals for Strong Kids. Other lessons will help us learn to identify our emotions and good ways to express them; to talk about our anger and give us good ways to deal with it; to notice and better understand other people's feelings; and to think in ways that help us in life. We will also learn how to solve people problems and conflicts, and how to relax, keep active, and achieve our goals.*

- Awareness or Disclaimer Statement: Students with Serious Problems
  - Script:

    The Strong Kids *group will be focusing on life skills and may not be enough help for students experiencing a large amount of depression or anxiety. If you feel you are experiencing these issues or you know someone that might, see me or another person who works in the school so that we can support you in getting the help you need.*

- Defining Behavior Expectations

- **Do NOT use Supplement 1.2**
- Script:

  During Strong Kids*, you are expected to follow the same expectations that apply any time you are at school. Dirigo Elementary School has three important expectations; who can raise their hand to tell me one of the expectations?* (continue until all three have been shared; if students cannot name all three – Be Safe, Be Respectful, and Be Responsible – complete the list for them).

  During our group, you may be asked to share stories about when you felt a strong emotion, such as anger, or when you've had a problem. You can raise your hand when you have a story to share. When someone is sharing a story, we will be respectful by listening quietly while they are talking. Also, because stories might be personal, they will just stay in the group; this is called confidentiality, and it is an important part of being respectful during Strong Kids*. If you decide that you no longer want to share your story or if you begin to feel uncomfortable, you may stop at any time. If you do not feel comfortable sharing your story with the whole group but you feel like you want to talk to someone, please speak to me after group.*

  (For new groups only) *From time to time, new students may join our group. All students will attend a lesson like this one first, so they will also be taught the importance of confidentiality. Sometimes, and extra adult might also come to our group; they will also follow our confidentiality expectation.*

(For students joining an existing group) *When you attend your next lesson, there will be students present who have already been taught some of the* Strong Kids *lessons. They also attended a lesson like this one, and they understand the importance of confidentiality. New students may also join the group after you have attended a few lessons, and they will also have a lesson like this before you see them in the group. Sometimes, and extra adult might also come to our group; they will also follow our confidentiality expectation.*

(For all) *We also need to be safe and responsible during* Strong Kids*. Being safe during our group means keeping our hands and feet to ourselves and walking to and from class. Being responsible during our group means completing your homework assignments and raising your hand to ask questions when you don't understand something.*

- Closure
    - Script

      Today, we talked about Strong Kids*, our new group. For the next several weeks, we will be learning about our feelings, learning how to deal with them, and learning other important life skills. During this time, we need to remember to be safe, respectful, and responsible, just like during any other class or activity at school.*

- Homework Handout (Supplement 1.3)
    - Follow published procedure

Lesson 2: Understanding Your Feelings 1

- Review
    - Follow published procedure and script if all students in the group attended *About* Strong Kids as the prior lesson
    - Mixed-Group Script:

      Since we have new students joining the group today, let's begin by reviewing the expectations during group. Raise your hand if you can tell me one important expectation.

      (Review all Safe, Respectful, and Responsible expectations, emphasizing confidentiality, before proceeding)

      During the last group meeting, we discussed relaxation and stress-relieving techniques. Raise your hand if you attended that lesson and can tell me an important idea we learned.

      (Follow published procedure using the six ideas listed on page 148 of the *Strong Kids* manual for review of Lesson 10, including review of the Lesson 10 homework, before proceeding with Lesson 2)
- Progress Monitoring
    - Needed for any student who DID NOT attend About *Strong Kids* as the previous lesson.
    - Script:

      Now we will take a few minutes for you to take our weekly tests.

      Remember, there are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work,

answer all the questions, and raise your hand if you need help understanding any of the items. I will read all the questions out loud for you. If you are not taking these tests today, you may read, write, draw, or talk quietly with any neighbors who are not taking the tests until the rest of the group is finished.

- For all other sections of Lesson 2, follow the published procedures and scripts found in the *Strong Kids* manual

Lesson 3: Understanding Your Feelings 2

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual

Lesson 4: Dealing with Anger

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual, adding time for Progress Monitoring for ALL students immediately following the Review section.
- Progress Monitoring
    - Script:

      Now we will take a few minutes for you to take our weekly tests. There are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work, answer all the questions, and raise your hand if you need help understanding any of the items.

Lesson 5: Understanding Other People's Feelings

- Review
    - Follow published procedure and script if all students in the group attended *Dealing with Anger* as the prior lesson
    - Mixed-Group Script:

      Since we have new students joining the group today, let's begin by reviewing the expectations during group. Raise your hand if you can tell me one important expectation.

      (Review all Safe, Respectful, and Responsible expectations, emphasizing confidentiality, before proceeding)
- Progress Monitoring
    - Needed for any student who DID NOT attend About *Strong Kids* as the previous lesson.
    - Script:

      Now we will take a few minutes for you to take our weekly tests. Remember, there are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work, answer all the questions, and raise your hand if you need help understanding any of the items. I will read all the questions out loud for you. If you are not taking these tests today, you may read, write, draw, or talk quietly with any neighbors who are not taking the tests until the rest of the group is finished.

- Follow published procedures and scripts from the *Strong Kids* manual for the rest of Lesson 5

Lesson 6: Clear Thinking 1

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual

Lesson 7: Clear Thinking 2

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual, adding time for Progress Monitoring for ALL students after the Review section
- Progress Monitoring
    - Script:
- *Now we will take a few minutes for you to take our weekly tests. Remember, there are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work, answer all the questions, and raise your hand if you need help understanding any of the items. I will read all the questions out loud for you.*

Lesson 8: The Power of Positive Thinking

- Review
    - Follow published procedure and script if all students in the group attended *Clear Thinking 2* as the prior lesson
    - Mixed-Group Script:

      Since we have new students joining the group today, let's begin by reviewing the expectations during group. Raise your hand if you can tell me one important expectation.

      (Review all Safe, Respectful, and Responsible expectations, emphasizing confidentiality, before proceeding)
- Progress Monitoring
    - Needed for any student who DID NOT attend About *Strong Kids* as the previous lesson.
    - Script:

      Now we will take a few minutes for you to take our weekly tests. Remember, there are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work, answer all the questions, and raise your hand if you need help understanding any of the items. I will read all the questions out loud for you. If you are not taking these tests today, you may read, write, draw, or talk quietly with any neighbors who are not taking the tests until the rest of the group is finished.

- Follow published procedures and scripts from the *Strong Kids* manual for the rest of Lesson 8

Lesson 9: Solving People Problems

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual

Lesson 10: Letting Go of Stress

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual, adding time for Progress Monitoring for ALL students after the Review section
- Progress Monitoring
    - Script:

      Now we will take a few minutes for you to take our weekly tests. Remember, there are no "right" or "wrong" answers on these tests; they just help me to know how you are feeling. Please do your best work, answer all the questions, and raise your hand if you need help understanding any of the items. I will read all the questions out loud for you.

Lesson 11: Behavior Change: Setting Goals and Staying Active

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual, incorporating the appropriate Review section based on the last session attended (Lesson 4, Lesson 7, or Lesson 10)

Lesson 12: Finishing UP!

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual, leaving time for post-test MSLSS and *Strong Kids* measures at the end
- Post-Test Assessments
    - Script

      Now we are going to take some brief tests that will help me to know how much you have learned about your emotions and feelings. You have taken all of these tests before, and they will take about 20 minutes. It's okay if you aren't sure of the answers – just do your best work, and answer all of the questions. Raise your hand if you need help understanding all of the questions. I will read all the questions out loud for you.
    - Procedure

      At this time, students should take the *Strong Kids* knowledge test, followed by the symptom test, then the MSLSS School Items.

Strong Kids Booster: Putting It All Together

- Follow All Published Procedures and Scripts found in the *Strong Kids* manual

APPENDIX H: Treatment Integrity Checklist

Observer's Initials:_____ Date:

_____

1) The group leader took attendance: _____(Observer's Initials)

2) The group leader completed a review at the beginning of the lesson, including review of homework (not applicable for Lesson 1 or the Booster session): _____(Observer's Initials)

3) When the group leader collects homework, each student's homework is added to the folder that is designed only for that student's materials (not applicable for Lesson 1 or the Booster session): _____(Observer's Initials)

4) When the pre- and post-tests or progress monitoring measures are given, all procedures and scripts are followed verbatim (not applicable in all sessions): _____(Observer's Initials)

5) After the pre- and post-tests or progress monitoring measures are given, each student's test is added to the folder that is designed only for that student's materials (Lessons 1 and12 only): _____(Observer's Initials)

6) The group leader followed the appropriate script for the introduction to the new lesson: _____(Observer's Initials)

7) The group leader followed the appropriate script and procedures for the lesson being taught: _____(Observer's Initials)

8) The group leader used the appropriate handouts for the lesson being taught: _____(Observer's Initials)

9) The group leader completed the Closure section, following appropriate scripts and handing out homework as instructed in the manual: _____(Observer's Initials)

10) The group leader personally hands the *Strong Kids* Support Cards and Tips for Transfer Training sheets to the classroom teacher(s) when students are walked back to class (not applicable for Lesson 1 or the Booster Session): _____(Observer's Initials)

BIOGRAPHY OF THE AUTHOR

Danielle D. Williams was born in Bangor, Maine on April 30, 1981. She was raised in Hampden, Maine and graduated from Hampden Academy in 1999. She attended Anna Maria College and graduated in 2004 with a Bachelor of Music degree in Music Education. She married in 2009 and has a beautiful son, age 5. She continued her education at the University of Southern Maine, earning a Master of Science degree in Educational Psychology in 2013. She has been a Board Certified Behavior Analyst since 2014. Danielle completed her pre-doctoral internship in Maine Regional School Unit 10 (RSU 10). After completion of the doctoral program, Danielle will continue to provide comprehensive school psychology services in RSU 10. She is a candidate for the Doctor of Psychology degree in School Psychology from the University of Southern Maine in August, 2015.