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Carrie Masia
Montclair State University, masiac@mail.montclair.edu

Daniela Colognori
New York University

Chad Brice
Nathan S. Kline Institute for Psychiatric Research

Kathleen Herzig
Plymouth State University

Laura Mufson
Columbia University

See next page for additional authors

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Can school counselors deliver cognitive-behavioral treatment for social anxiety effectively? A randomized controlled trial

Carrie Masia Warner,[1,2,3] Daniela Colognori,[3] Chad Brice,[3] Kathleen Herzig,[3] Laura Mufson,[4] Chelsea Lynch,[3] Philip T. Reiss,[2,3,5] Eva Petkova,[2,3,5] Jeremy Fox,[3] Dominic C. Moceri,[3] Julie Ryan,[3] and Rachel G. Klein[3]

[1]Department of Psychology, William Paterson University, Wayne, NJ, USA; [2]Nathan Kline Institute for Psychiatric Research, Orangeburg, NY, USA; [3]Department of Child & Adolescent Psychiatry, NYU Langone Medical Center, New York, NY, USA; [4]Department of Psychiatry, Columbia University College of Physicians and Surgeon and New York State Psychiatric Institute, New York, NY, USA; [5]Department of Population Health, NYU Langone Medical Center, New York, NY, USA

Background: Social anxiety disorder (SAD) typically onsets in adolescence and is associated with multiple impairments. Despite promising clinical interventions, most socially anxious adolescents remain untreated. To address this clinical neglect, we developed a school-based, 12-week group intervention for youth with SAD, *Skills for Academic and Social Success* (SASS). When implemented by psychologists, SASS has been found effective. To promote dissemination and optimize treatment access, we tested whether school counselors could be effective treatment providers. **Method:** We randomized 138, ninth through 11th graders with SAD to one of three conditions: (a) SASS delivered by school counselors (C-SASS), (b) SASS delivered by psychologists (P-SASS), or (c) a control condition, *Skills for Life* (SFL), a nonspecific counseling program. Blind, independent, evaluations were conducted with parents and adolescents at baseline, post-intervention, and 5 months beyond treatment completion. We hypothesized that C-SASS and P-SASS would be superior to the control, immediately after treatment and at follow-up. No prediction was made about the relative efficacy of C-SASS and P-SASS. **Results:** Compared to controls, adolescents treated with C-SASS or P-SASS experienced significantly greater improvement and reductions of anxiety at the end of treatment and follow-up. There were no significant differences between SASS delivered by school counselors and psychologists. **Conclusion:** With training, school counselors are effective treatment providers to adolescents with social anxiety, yielding benefits comparable to those obtained by specialized psychologists. Questions remain regarding means to maintain counselors' practice standards without external support. **Keywords:** Social anxiety; school counselors; adolescents; SASS.

Introduction

Social anxiety disorder (SAD) is highly prevalent in adolescents, affecting an estimated 9.1% (Merikangas et al., 2010). Associated social discomfort and avoidance lead to a paucity of friendships and social opportunities, as well as academic difficulties (Erath, Flanagan, & Bierman, 2007). SAD peaks in adolescence and persists into adulthood with continued impairment in professional attainment and interpersonal relationships (Beesdo-Baum et al., 2012). Yet, SAD has one of the lowest rates of service utilization among adolescent psychiatric disorders (12%) (Merikangas et al., 2011), pointing to a need for facilitating treatment access.

Schools are uniquely positioned to address treatment challenges specific to SAD. For one, SAD appears less responsive than other pediatric anxiety disorders to individual cognitive-behavioral therapy (CBT) (Ginsburg et al., 2011). Unlike individual treatments, groups provide social exposure, opportunities to confront social fears in vivo, and opportunities to practice appropriate social skills (Beidel, Turner, & Morris, 1999; Kendall, Settipani, & Cummings, 2012). Problematically, unlike schools, clinical settings have difficulty forming groups of children of similar developmental levels within specific clinical disorders. In addition, school-based treatment is especially relevant to social anxiety because many social fears manifest in school; thus, schools are uniquely suited for addressing these fears in real-life contexts (e.g., school cafeteria, library) with multiple individuals (e.g., peers, teachers). In sum, by supporting a group structure and integrating treatment within a natural environment, school-based intervention maximizes opportunities for treatment effectiveness in SAD.

Most CBT school-based programs found efficacious (Herzig-Anderson, Colognori, Fox, Stewart, & Masia Warner, 2012) have the impractical feature of relying on outside therapists. To render school-based programs sustainable, they must be in the hands of front-line school personnel (Ryan & Masia Warner, 2012). This dissemination approach, coined deployment-focused research (Schoenwald & Hoagwood, 2001), uses system employees to deliver interventions under natural conditions. Studies of CBT for anxiety, implemented by school personnel are scarce. A small trial with 32 adolescents with anxiety disorders obtained no benefit for individual CBT administered

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by school clinicians compared to usual care (UC) (Ginsburg, Becker, Drazdowski, & Tein, 2012). There is some support for school social workers as providers of *Interpersonal Psychotherapy for Adolescent Depression* (IPT-A) (Mufson et al., 2004) and of CBT for posttraumatic stress disorder (Kataoka et al., 2003; Stein et al., 2003). To date, there has been no systematic study of school counselors as therapists for SAD.

Current study

We report a randomized controlled trial of the effectiveness of a 12-week school-based cognitive-behavioral group intervention for SAD, called *Skills for Academic and Social Success* (SASS; Masia et al., 1999), implemented by school counselors. SASS is a group intervention specifically designed for school implementation that emphasizes exposure and social skills training. In two previous controlled trials, SASS delivered by psychologists was effective relative to a waiting list (Masia Warner et al., 2005) and to an attention control (Masia Warner, Fisher, Shrout, Rathor, & Klein, 2007).

This study randomized students with SAD to: (a) SASS delivered by school counselors (C-SASS), (b) SASS delivered by doctoral level psychologists (P-SASS), or (c) a control condition, *Skills for Life* (SFL), a nonspecific, manualized group program designed for school counselors. As recommended (Weisz, Jensen-Doss, & Hawley, 2006), school counselors and students were randomized within schools, and all treatments had similar formats. We hypothesized that relative to SFL, C-SASS and P-SASS would significantly reduce the severity of SAD, and yield significantly greater improvement, higher remission rates, and better school functioning immediately following treatment, and 5 months beyond treatment completion. The P-SASS condition served as a quality control and benchmark to enable full interpretation of results, particularly should C-SASS fail to be superior to SFL. The contrasts between C-SASS and P-SASS were exploratory.

Method

The study was approved by the Institutional Board of Research Associates at the New York University School of Medicine (ref: S13-00040). It was funded by the National Institute of Mental Health (NIMH; R01 MH081881) and registered on the U.S. National Institutes of Health Clinical Trials database (ref: NCT01320800).

Study design

High school students with SAD were randomized to one of three conditions: (a) C-SASS, (b) P-SASS, or (c) SFL. SFL was selected to control for nonspecific treatment effects because its structure is similar to SASS's. UC is frequently used as a control. However, because the majority of adolescents with SAD are not treated, UC would be 'No Treatment,' which would fail to control for nonspecific treatment effects. Thus, SFL provided a more rigorous test of SASS's specific efficacy than UC.

Procedure

Participants were in grades 9 through 11 in three suburban New Jersey public high schools, and were recruited over three consecutive academic years. Recruitment consisted of three sequential steps: (a) a school-wide screening; (b) a telephone call to parents; and (c) a comprehensive clinical diagnostic evaluation of the student. The CONSORT (2010) flowchart (Figure 1) indicates the number of students at each step (See online Appendix S1 for CONSORT checklist).

School-wide screening. Initial screening for social anxiety relied on two self-report questionnaires, the *Social Phobia and Anxiety Inventory for Children* (SPAI-C; Beidel, Turner, & Morris, 1995) and the social anxiety subscale of the *Multidimensional Anxiety Scale for Children* (MASC-Soc; March, Parker, Sullivan, Stallings, & Conners, 1997). A score above 17 on the SPAI-C or above 13 on the MASC social anxiety subscale qualified for further consideration. We selected scores lower than recommended clinical cutoffs to cast a broad net for social anxiety. Of 4,742 students, 4,204 (88.7%) completed scales and 1,193 (28.5%) had elevated scores. In addition, we solicited nominations of 'shy' students from school personnel who nominated 78 students (60 were below scale thresholds and 18 had been absent).

Parent telephone screening. Of the 1,271 students with possible social anxiety, parents of 847 (66.6%) had a brief semistructured telephone interview about their child's social anxiety. Of these, 454 (53.6%) reported that their offspring had social anxiety that interfered significantly with their child's functioning (specific examples of impairment were required), and 286 parents (63.0%) agreed to proceed with an evaluation of their child.

Diagnostic evaluation. Written informed consent was obtained from parents and adolescents (n = 286 dyads). They were interviewed separately by a trained clinical psychologist, using the *Anxiety Disorders Interview Schedule for DSM-IV: Parent and Child Versions* (ADIS-P/C; Silverman & Albano, 1996). Disorders are assigned a clinical severity rating (CSR) from 0 to 8, with 4 or above warranting a diagnosis. To test diagnostic interrater reliability, 86 (30%) randomly selected baseline audiotapes were rated by another interviewer; interrater agreement for SAD was high (κ = .84; Landis & Koch, 1977).

Entry criteria: A diagnosis of SAD was required. If additional disorders were present, SAD had to be of equal or greater severity. Among the 286 interviewed, 168 (58.7%) were diagnosed with SAD. Nine, who failed to meet study criteria, were excluded following diagnostic evaluation: four required immediate care, two had unreliable school attendance, and three were receiving CBT. We included participants medicated for anxiety, provided they were on a stable dose (n = 5) and still met criteria for SAD. Of the 159 adolescents who met study criteria, 138 (87%) agreed to participate, 21 refused. Students who agreed and refused differed significantly on a single characteristic: refusers had slightly less severe SAD (M = 5.10, SD = 0.77 versus M = 5.57, SD = 0.93), $t(157) = 2.23$, p = .027, d = .52).

Participant characteristics

The 138 participants had a mean SAD rating of 5.57 (SD = 0.93) on the ADIS CSR. The majority were white (72%) and female (68%). Their race/ethnicity composition was representative of the school population. Average age was 15.42 (SD = 0.81) years. Approximately, 42% had at least one comorbid diagnosis, 12.5% reported prior treatment for anxiety, and 3.7% (n = 5) were prescribed medication (i.e., SSRIs and benzodiazepines) for mood and anxiety symptoms (See Table S1 for demographic and clinical characteristics).

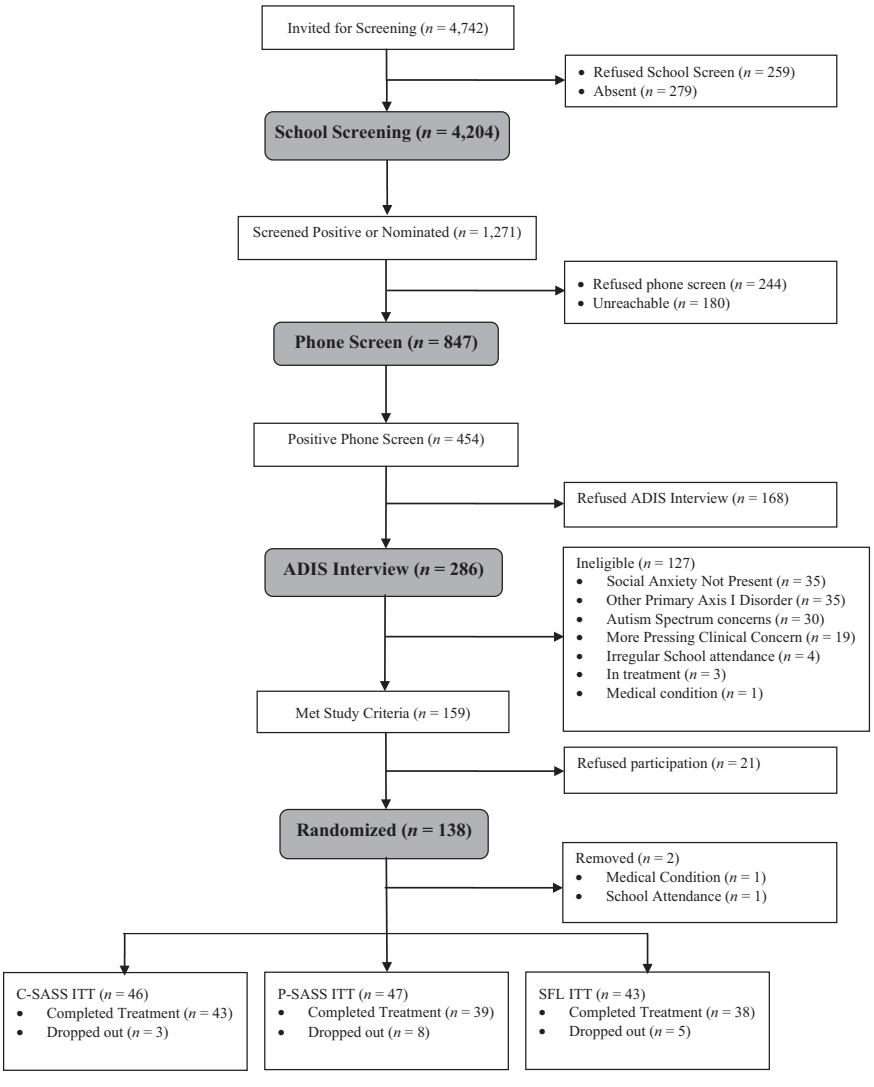

Figure 1 Consort table

Randomization. Participants were randomized in a 1:1:1 ratio to C-SASS (n = 46), P-SASS (n = 49), and SFL (n = 43), within school and within SAD severity strata (CSRs of 4 and 5, and CSRs >5). A statistician prepared the randomization list.

Assessments

Students were evaluated at baseline, postintervention (post), and 5 months beyond treatment completion (follow-up). At all time points, trained independent evaluators (IEs), blind to treatment condition, conducted assessments. Dropouts were assessed within 1 week of termination.

Primary outcome measures. SAD severity: Independent evaluator ratings (CSR) on ADIS-P/C (Silverman & Albano, 1996) indexed diagnostic severity.

Treatment response: Independent evaluators rated an overall improvement at post and follow-up on the *Clinical Global Impression Scale–Improvement–Revised Version* (CGI-I; Klein, Koplewicz, & Kanner, 1992) used in multiple clinical trials, including the Pediatric Psychopharmacology (RUPP) Anxiety Group (2001). Ratings range from 1 (*Completely Recovered*) to 8 (*Much Worse*). Treatment response was defined as ratings of 1 (*Completely Recovered*), 2 (*Much Improved*), and 3 (*Improved*), with a rating of 4 (*Minimally Improved*) or higher indicating treatment nonresponse.

Secondary outcome measures. Remission: Remission, strictly speaking better referred to as 'excellent response', was defined as not meeting criteria for SAD.

Social anxiety: Parents and adolescents completed the SPAI-C (Beidel et al., 1995). Across all time points, internal consistency was excellent (α = .95–.96).

School functioning: Adolescents rated school functioning on the School subscale of the *Social Adjustment Scale-Self-Report* (SAS-SR; adapted from Weissman & Bothwell, 1976; Mufson et al., 2004). Internal consistency was acceptable at baseline and post (α = .62–.65), but low at follow-up (α = .44).

Adolescents also rated anxiety and avoidance in school situations on eight items from the *Liebowitz Social Anxiety Scale for Children and Adolescents* (LSAS-CA; Masia Warner, Klein, & Liebowitz, 2003; Masia Warner, Storch et al., 2003). Internal consistency was excellent at all time points (α = .89–.91).

Treatment characteristics

Group attendance, treatment credibility, and therapeutic alliance were assessed throughout treatment implementation (See Appendix S2).

Group interventions

Skills for Academic and Social Success. Skills for Academic and Social Success is described fully elsewhere (Ryan & Masia Warner, 2012). Briefly, it consists of 12 in-school group sessions (one class period) focused on realistic thinking, social skills (e.g., starting conversations, inviting others), and exposures. Adolescents receive two brief (15-min) individual sessions, and parents receive two 45-min sessions. Finally, adolescents participate in four 90-min social events outside of school with prosocial school peers (e.g., bowling). Two group booster sessions occur after treatment termination.

Control intervention. A nonspecific counseling program, SFL, controlled for the attention and group involvement provided by SASS. We adapted it from *Skills for Living* (Morganett, 1990), designed for school counselors to promote general emotional well being. To enhance credibility, we applied session topics (e.g., deep breathing, problem-solving, progressive muscle relaxation) to SAD. We added a parent session providing SAD psychoeducation, one brief individual session, and one group booster session for students. SFL and SASS were not exactly matched for contact, as SASS conditions had three extra sessions (one parent, one individual, and one booster), and four outside social events.

Therapists

Psychologists. Five doctoral-level clinical psychologists (three female) with experience in CBT for pediatric anxiety implemented P-SASS (See Appendix S2 for details of P-SASS training and consultation).

Counselors. Fifteen masters' level school counselors (14 female) were randomized within schools to implement either C-SASS (n = 7) or SFL (n = 8) [See Appendix S2 for additional information regarding counselor certification, experience, and caseload. Both C-SASS and SFL counselors received training prior to study involvement (also detailed in Appendix S2)].

Treatment implementation

All sessions were audio recorded. To quantify SASS fidelity, we measured counselor adherence and competence in core treatment components. We also assessed treatment contamination, defined as introducing SASS active treatment elements (e.g., active cognitive reappraisal, social skills training) within SFL. Counselors received weekly reminders to eschew discussing treatment details with one another (Mufson et al., 2004) (See Appendix S2 for Fidelity measurement).

Power analysis

In previous studies, P-SASS had an effect size of 2.4 (Masia Warner et al., 2005) and 1.9 (Masia Warner et al., 2007) on primary outcomes. For this study, power calculations assumed a more modest effect size of 0.8 for C-SASS. To achieve at least 80% power for two-sided tests of significance at α = .05, 126 randomized participants were required.

Statistical analyses

Treatment conditions were compared with respect to treatment characteristics, dropouts, concomitant treatments, and treatment fidelity. *T*-tests and ANOVAs were applied to continuous measures, and chi-squares and Fisher's exact test to dichotomous variables.

Treatment differences in continuous outcomes were assessed using linear mixed effect models, which included random effects to account for the data's hierarchical structure, with four levels of nesting: subject, treatment group, school cohort (year-within-school), and school. These models treated outcomes as a function of time (post and follow-up, or dropout time), and time-by-treatment interactions, adjusting for baseline values. Thus, all observations for any outcome were included in a single model, from which differences among treatment groups, at post and at follow-up, were assessed by estimating the corresponding contrasts. Mixed effect models allow for valid inference in the presence of incomplete data under the 'missing at random' assumption (Verbeke & Molenberghs, 2009). Effect sizes are reported as Cohen's *d*, calculated by dividing the model-based estimates of the differences by the pooled standard deviation at baseline.

Dichotomous primary and secondary outcomes were analyzed with logistic regression, using the generalized estimating equation (GEE) approach to account for repeated measures over time, and clustering of students within condition, school-cohort and school; effect sizes are reported as odds ratios. Analyses included all randomized subjects (ITT), with the conservative assumption that all nonobserved values correspond to poor outcomes (i.e., nonresponder and SAD non-remitter). Results with treatment completers and ITT were identical with one exception: diagnostic remission rates at follow-up (reported below). Analyses were implemented with R software (R Core Team, 2013), using the 'lme4' package (Bates, Maechler, Bolker, & Walker, 2014) for the linear mixed models and the 'gee' package (Carey, 2012) for the GEE models. Significance level was set at $p \leq .05$ two-tailed. Control for multiple comparisons was not implemented because we essentially tested only one primary hypothesis, namely that C-SASS would be more effective than SFL for alleviating anxiety. Although two slightly different measures defined treatment response, they fundamentally reflect a single hypothesis.

Results

Preliminary analyses

Removed participants. Two participants in P-SASS were removed during the study. One had irregular school attendance; another had a medical emergency.

Dropouts. Sixteen (3 from C-SASS, 8 from P-SASS, 5 from SFL) dropped out between sessions 3 and 7 (M = 5.00, SD = 1.51). There were no significant differences between the 120 treatment completers and 16 dropouts on demographics, comorbidity, or severity. Of the 16 dropouts, 14 (87.5%) completed a final evaluation.

Treatment characteristics. Treatment attendance and credibility were uniformly high, and adolescents endorsed positive working relationships with therapists. Treatment characteristics did not differ significantly across study conditions (See Appendix S2 for treatment characteristics).

Treatment implementation. Adherence and competence: Overall, 79% of C-SASS and 83% of P-SASS sessions were considered adherent. In addition, 69% of C-SASS and 83% of P-SASS sessions were rated as competent. SASS conditions did not

differ significantly in adherence, χ^2 (1) = 0.33, p = .57, or competence, χ^2 (1) = 2.39, p = .122.

Treatment differentiation: Contamination occurred in eight of 19 SFL sessions (42%). One was judged as severe (i.e., cognitive reappraisal). The other seven were mild and in the realm of typical support (e.g., 'sometimes trying new things makes them easier', 'reward yourself').

Treatment contrasts

Table 1 presents clinical ratings at baseline, post, and follow-up. Table 2 displays treatment response and remission rates, for the total sample (n = 136), and for treatment completers (n = 120). First, we summarize results contrasting P-SASS and SFL because superiority of P-SASS was necessary to establish the integrity and internal validity of the study.

P-SASS versus SFL. At the end of treatment, adolescents who received P-SASS had significantly less severe SAD, greater rates of improvement, and more SAD remissions than SFL. Also, compared to SFL, P-SASS resulted in self-ratings of significantly better school functioning (SAS-School) and less anxiety in school situations (LSAS-CA). At follow-up, adolescents treated with P-SASS continued to have significantly less SAD severity and significantly greater rates of improvement than controls. Although remitted SAD was higher for those in P-SASS than SFL in the 'intent to treat' sample, it is only among treatment completers that the difference reached statistical significance. Finally, adolescents treated with P-SASS reported having less social anxiety (SPAI-C), and less discomfort in school situations (LSAS-CA) relative to SFL participants.

Posttreatment C-SASS versus SFL. Primary outcomes:

Diagnostic severity. As hypothesized, at the end of treatment, C-SASS had a significantly superior effect on SAD severity than SFL (C-SASS vs. SFL: p = .002, d = .69).

Treatment response (CGI-I). As shown in Table 2, significantly more C-SASS participants were classified as treatment responders relative to those in SFL (C-SASS vs. SFL: p < .001, OR = 8.20, 95% CI [3.08, 21.83]).

Secondary outcomes: Remission. Although the rate of remitted SAD was higher in the C-SASS group (22%) than in SFL (7%), there was only a trend in favor of C-SASS (OR = 3.70, 95% CI [0.94, 14.52], p = .06).

Social anxiety ratings (SPAI-C/P). Neither parent nor adolescent scale ratings of social anxiety showed superiority for C-SASS over SFL on this measure.

School functioning ratings (SAS-SR and LSAS-CA). Relative to SFL, C-SASS adolescents rated themselves as having better school functioning (SAS-SR) (p = .002, d = .63), but not significantly lower anxiety in school situations (LSAS-CA).

Follow-up C-SASS versus SFL. Primary outcomes:

Diagnostic severity. At follow-up, students who received C-SASS had significantly less severe SAD compared to those treated with SFL (C-SASS vs. SFL: p < .001, d = .93).

Treatment response (CGI-I). Similarly, response rates for C-SASS were significantly greater than for SFL (C-SASS vs. SFL: p < .001, OR = 16.21, 95% CI [5.63, 46.63]).

Secondary outcomes: Remission. At 5-month follow-up, eight additional adolescents from C-SASS and two from SFL remitted, increasing remission rates to 39% and 12%, respectively, reflecting superiority for C-SASS (p = .005, OR = 4.89, 95% CI [1.62, 14.74]).

Social anxiety ratings (SPAI-C/P). Adolescents in C-SASS evidenced further improvement on self-reports of social anxiety, leading to significant superiority over SFL at follow-up (C-SASS vs. SFL: p = .042, d = .38). Parent ratings did not yield treatment differences.

School functioning ratings (SAS-SR and LSAS-CA). At follow-up, treatment differences were no longer found on the SAS-SR *School* domain because of slight gains in SFL and no change in the C-SASS treatment. No significant differences were indicated on the LSAS-CA.

C-SASS versus P-SASS. Treatment by school counselors did not yield inferior outcomes to treatment by psychologists, as evidenced by the absence of posttreatment or follow-up differences. We also conducted unplanned, exploratory testing of inferiority of C-SASS to P-SASS. For continuous measures, inferiority was defined as a difference of effect size Cohen's d = 0.4 or larger in favor of P-SASS; and for dichotomous outcomes as a 20% or greater difference. One-sided tests with α = .05 were used for the noninferiority hypotheses. Noninferiority of C-SASS was established for all outcomes at posttreatment and follow-up, with the exception of three posttreatment outcomes (SPAI-P, treatment response, remission). These additional analyses supported that C-SASS was comparable to P-SASS.

Discussion

Highly consistent findings that most adolescents with anxiety disorders go untreated have led to the consensus that novel treatment models are needed. This study was designed to address this public health issue with regard to SAD, a common condition that incurs multiple disadvantages. The overall goal was to transport an evidence-based intervention for delivery by extant school personnel. SASS, an intervention for

Table 1 Baseline, posttreatment, and follow-up descriptive statistics and model-based comparisons at posttreatment and follow-up

Variable	C-SASS ($N = 46$) M (SD)	P-SASS ($N = 47$) M (SD)	SFL ($N = 43$) M (SD)	C-SASS vs. P-SASS			C-SASS vs. SFL			P-SASS vs. SFL		
				Estimate	95% CI	d	Estimate	95% CI	d	Estimate	95% CI	d
SAD.CSR (0–8)												
Baseline	5.59 (0.98)	5.57 (0.90)	5.54 (0.93)									
Posttreatment	4.40 (1.14)	4.31 (1.09)	4.95 (1.01)	0.02	[−0.39, 0.42]	0.02	−0.65**	[−1.06, −0.24]	0.69	−0.63**	[−1.05, −0.21]	0.67
Follow-up	3.87 (1.49)	3.84 (1.20)	4.64 (1.03)	0.09	[−0.33, 0.50]	0.09	−0.86***	[−1.28, −0.44]	0.93	−0.78***	[−1.22, −0.34]	0.83
SPAI-C (0–52)												
Baseline	20.77 (9.51)	23.23 (9.23)	19.34 (8.80)									
Posttreatment	13.96 (7.25)	13.76 (9.58)	15.11 (9.32)	−1.43	[−4.60, 1.75]	0.15	−1.58	[−4.88, 1.72]	0.17	−3.01	[−6.35, 0.34]	0.33
Follow-up	10.77 (7.26)	10.58 (8.24)	13.03 (9.40)	−0.89	[−4.12, 2.34]	0.10	−3.48*	[−6.84, −0.12]	0.38	−4.37*	[−7.79, −0.95]	0.47
SPAI-P (0–52)												
Baseline	24.39 (10.55)	27.71 (8.39)	25.27 (7.82)									
Posttreatment	17.22 (8.74)	20.44 (10.18)	17.66 (6.73)	1.40	[−1.92, 4.71]	0.16	−0.49	[−3.92, 2.94]	0.05	0.91	[−2.53, 4.35]	0.10
Follow-up	15.57 (8.45)	17.62 (10.48)	16.43 (7.87)	0.00	[−3.51, 3.51]	0.00	−0.83	[−4.42, 2.75]	0.09	−0.83	[−4.52, 2.85]	0.09
SAS school (1–5)												
Baseline	1.82 (0.44)	1.98 (0.46)	1.87 (0.49)									
Posttreatment	1.62 (0.37)	1.67 (0.45)	1.91 (0.60)	−0.01	[−0.18, 0.17]	0.02	−0.29**	[−0.47, −0.11]	0.63	−0.30**	[−0.48, −0.12]	0.64
Follow-up	1.57 (0.33)	1.55 (0.34)	1.58 (0.41)	−0.07	[−0.25, 0.11]	0.15	−0.02	[−0.21, 0.17]	0.05	−0.09	[−0.28, 0.10]	0.19
LSAS-CA school (0–48)												
Baseline	17.31 (10.15)	19.01 (10.11)	14.99 (9.61)									
Posttreatment	11.04 (8.34)	9.98 (6.92)	12.13 (9.53)	−1.82	[−4.76, 1.11]	0.18	−1.61	[−4.66, 1.44]	0.16	−3.43*	[−6.50, −0.36]	0.34
Follow-up	8.93 (7.63)	7.79 (7.49)	10.43 (8.41)	−1.19	[−4.23, 1.85]	0.12	−2.22	[−5.38, 0.94]	0.22	−3.41*	[−6.58, −0.24]	0.34

C-SASS, counselor delivered Skills for Academic and Social Success; P-SASS, psychologist delivered Skills for Academic and Social Success; SFL, Skills for Life; SAD.CSR, Social Anxiety Disorder Clinical Severity Rating; Treatment Responder Status determined with Clinical Global Impressions ratings; SPAI-C, Social Phobia and Anxiety Inventory for Children; SPAI-P, Social Phobia and Anxiety Inventory for Children (Parent Version); SAS-SR, Social Adjustment Scale–Self-Report (School subscales); LSAS-CA School, Liebowitz Social Anxiety Scale for Children and Adolescents School subscale; higher values indicate worse functioning for all measures; adjusted means are reported at post and follow-up controlling for baseline; p-values are based on linear mixed-effect models.
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 2 Treatment response and remission rates at posttreatment and follow-up

Variable	C-SASS	P-SASS	SFL	C-SASS vs. P-SASS	C-SASS vs. SFL	P-SASS vs. SFL
Total sample (N = 136)	(N = 46)	(N = 47)	(N = 43)	OR [95% CI]	OR [95% CI]	OR [95% CI]
Treatment response, n (%)						
Posttreatment	30 (65.2)	31 (66.0)	8 (18.6)	0.97 [0.41, 2.28]	8.20*** [3.08, 21.83]	8.48*** [3.19, 22.51]
Follow-up	39 (84.8)	34 (72.3)	11 (25.6)	2.13 [0.76, 5.95]	16.21*** [5.63, 46.63]	7.61*** [2.98, 19.42]
Diagnostic remission, n (%)						
Posttreatment	10 (21.7)	13 (27.7)	3 (7.0)	0.73 [0.28, 1.88]	3.70 [0.94, 14.52]	5.10* [1.34, 19.39]
Follow-up	18 (39.1)	13 (27.7)	5 (11.6)	1.68 [0.70, 4.02]	4.89** [1.62, 14.74]	2.91 [0.94, 9.00]
Treatment completers N = 120)	(N = 43)	(N = 39)	(N = 38)			
Treatment response, n (%)						
Posttreatment	29 (67.4)	29 (74.4)	8 (21.1)	0.71 [0.27, 1.87]	7.77*** [2.84, 21.27]	10.88*** [3.77, 31.41]
Follow-up	37 (86.1)	34 (87.2)	11 (29.0)	0.91 [0.25, 3.25]	15.14*** [4.98, 46.00]	16.69*** [5.17, 53.87]
Diagnostic remission, n (%)						
Posttreatment	9 (20.9)	12 (30.8)	3 (7.9)	0.60 [0.22, 1.62]	3.09 [0.77, 12.39]	5.19* [1.33, 20.23]
Follow-up	17 (39.5)	13 (33.3)	5 (13.2)	1.31 [0.53, 3.23]	4.32* [1.41, 13.25]	3.30* [1.04, 10.45]

C-SASS, counselor delivered Skills for Academic and Social Success; P-SASS, psychologist delivered Skills for Academic and Social Success; SFL, Skills for Life; Treatment Responder Status determined with Clinical Global Impressions ratings; p-values are based on generalized estimating equations.
*$p < .05$; **$p < .01$; ***$p < .001$.

SAD designed for implementation in schools, has been shown to be effective when delivered by specialized psychologists. In this study, we tested whether school counselors could implement SASS effectively, with the hope that demonstrating their capability could support future adoption by schools. To calibrate SASS's expected effects under validated conditions, we also included a SASS group delivered by psychologists. The study met standards for dissemination and implementation by incorporating essential methodological features: youth drawn from the same pool and randomized to treatments, therapists drawn from same pool and randomized to treatments, and evidence-based treatment (EBT) and UC delivered in the same setting (Weisz et al., 2006). With the exception of a recent investigation in community outpatient clinics (Weisz et al., 2012), none of 32 randomized controlled trials comparing EBTs with UC met these methodological requirements (Weisz et al., 2006). The present investigation incorporated these design features and, to our knowledge, is the largest randomized effectiveness trial testing the delivery of an EBT by school counselors.

This study found that school counselors can provide clinically meaningful care to adolescents with SAD. SASS delivered by school counselors was superior to a generic school counseling group immediately after treatment, as well as 5 months later. In addition, benefits were comparable to those of SASS conducted by specialized psychologists. Although the study was not designed to test directional predictions between SASS delivered by counselors and by psychologists, we did not anticipate the two to be so closely equivalent. These findings have important public health implications; they support efforts to train school personnel to treat SAD and potentially other childhood anxiety disorders, all of which are underserved.

Moreover, these results suggest that there may be a range of fidelity that supports treatment integrity. Psychologists, compared to school counselors, demonstrated higher competence in their delivery (about 13% more competent sessions), yet student outcomes were comparable. Although it is assumed that treatment fidelity is related to therapeutic effect (Perepletchikova & Kazdin, 2005), we need a better understanding of this association to inform requirements for dissemination efforts (Dobson & Singer, 2005; Kazdin & Nock, 2003; Perepletchikova & Kazdin, 2005).

Although C-SASS and P-SASS evidenced 15–21% greater remission than SFL, we were disappointed by the absolute remission rates with SASS; these were lower than in previous trials (Masia Warner et al., 2005, 2007). Initial studies conducted in private schools were small, and SASS was implemented by the treatment developer. It is probable that the potency of SASS was weakened by transferring implementation to less experienced providers and to large public schools. However, even considering the lesser efficacy of SASS, benefits of offering services in schools cannot be overlooked. C-SASS had the lowest dropout among conditions. Importantly, improvement with P-SASS remained stable from post to follow-up, without accrued advantage, in contrast to adolescents in C-SASS who experienced a 17% increase in remission. Having intervention delivered by counselors with whom students can have continued access may enhance treatment compliance, and may provide a sustained therapeutic resource, even after the formal treatment program terminates. The possibility of fostering enduring benefits, in itself, argues for school-based interventions.

Overall, our findings stand in contrast to three community treatment studies in pediatric anxiety disorders, which failed to find superiority for specialized treatment over UC (Barrington, Prior,

Richardson, & Allen, 2005; Ginsburg et al., 2012; Southam-Gerow et al., 2010). Several factors may contribute to the discrepancies. These studies included multiple anxiety disorders, while we targeted SAD exclusively. We implemented group treatment, whereas others relied on individual therapy. As we have noted, because of the social nature of SAD, it may be relatively less responsive to individual therapy (Ginsburg et al., 2011; Kendall et al., 2012). The SASS group format, which emphasizes social skills and exposure, coupled with delivery within a real-world context, may enhance clinical potency for SAD. In addition, a systematic manualized group treatment targeting a single psychiatric disorder may have enhanced community counselors' ability to master implementation.

Interpretation of findings should be placed in context of this investigation's hybrid design of effectiveness and implementation research (Curran, Bauer, Mittman, Pyne, & Stetler, 2012). School counselors were not involved in the diagnostic process. We cannot assume that one can transfer treatment delivery to school personnel without attending to diagnostic skills. As anxious students are vastly unrecognized, establishing effective and efficient means of identification will be critical to the viability of school-based treatment. Although therapists were system employees, the investigative team provided intensive consultation, potentially complicating dissemination (Chorpita, 2003). However, it is possible to streamline SASS and simplify training (e.g., using videotapes) to target competence of essential techniques (Dobson & Singer, 2005; Kazdin & Nock, 2003). Moreover, the majority of participants were white, and all were in suburban schools. Thus, generalizability to more diverse populations or urban schools is limited. Finally, some contamination occurred in the control treatment. Should it have had an impact, it would have minimized the relative efficacy of C-SASS over SFL and weakened the opportunity to support the study hypothesis.

In summary, the study demonstrates that SASS delivered by school counselors is a promising intervention for SAD. As suggested by Weisz et al. (2006), EBT effectiveness may be optimized by taking into consideration which clinicians and which contexts are best suited to address specific dysfunctions. In adolescents with SAD, school-based intervention may be particularly appropriate, if not essential, because school environments provide a rich context for active rehearsal of social skills and for social exposures, thereby reversing social avoidance, a key aspect of dysfunction in SAD.

Supporting information

Additional Supporting Information may be found in the online version of this article:

Table S1. Baseline participant demographics and clinical characteristics.

Appendix S1. CONSORT checklist.

Appendix S2. Treatment characteristics, counselor descriptives, therapist training and consultation, and treatment implementation.

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Correspondence

Carrie Masia Warner, Department of Psychology, William Paterson University, 300 Pompton Rd., Wayne, NJ 07470, USA; Email: masiac@wpunj.edu

Key Points

- This study addressed the public health issue of untreated adolescent social anxiety disorder (SAD) by testing whether school counselors could effectively implement a school-based evidence-based treatment, Skills for Academic and Social Success (SASS).
- SASS delivered by school counselors was superior to a school counseling group with efficacy comparable to that of clinical psychologists, thus supporting efforts to train school personnel in evidence-based strategies for SAD.
- Having school counselors implement intervention may have added benefits of enhanced treatment accessibility, increased treatment retention and compliance, and enduring improvements.
- Challenges remain to maintain high quality implementation in the absence of external support and to find feasible methods for schools to identify SAD in students.

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