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A Randomized Trial of the Positive Thoughts and Action Program for Depression among Early Adolescents

Carolyn A. McCarty,

University of Washington and Seattle Children's Research Institute P.O. Box 5371, Seattle, Washington 98145, cmccarty@u.washington.edu

Heather D. Violette,

Seattle Children's Research Institute P.O. Box 5371 M/S: CW8-6, Seattle, Washington 98115, heather.violette@seattlechildrens.org

Mylien T. Duong,

University of Washington Seattle, Washington 98145, mylien.duong@seattlech

Rick A. Cruz, and

University of Washington Seattle, Washington 98145, cruzr1@u.washington.edu

Elizabeth McCauley

University of Washington, P.O. Box 5371 M/S: CW8-6, Seattle, Washington 98115, eliz@uw.edu

Abstract

Objective—This study was conducted to compare the outcomes of a group-based cognitive-behavioral preventive intervention (Positive Thoughts and Actions, or PTA) tailored to youth in middle school with a brief, individually administered supportive intervention (Individual Support Program, or ISP).

Method—A randomized, clinical trial was conducted with 120 early adolescents (72 girls and 48 boys; age 11–15 years) who had elevated depressive symptoms and were selected from a school-based population. Measures of internalizing problems, externalizing problems, personal adjustment, school problems, and interpersonal relations, were obtained from parents, youth, and/or teachers at pre-intervention (Time 1) and post-intervention (Time 2, 5–7 months after pre-intervention).

Results—General linear model repeated measures analyses yielded a significant group $\times$ time interaction on youth-reported, but not parent-reported, depressive symptoms and internalizing symptoms. Youth in the PTA group showed greater decreases following intervention compared to youth who received ISP, yielding effect sizes (Cohen's *d*) of 0.36 for depressive symptoms [95% CI: $-.02, .73$], and 0.44 [95% CI: $.05, .82$], for internalizing symptoms. PTA youth also showed improvements in their personal adjustment (sense of inadequacy, self-esteem), and parent-reported social skills, but no differences emerged between groups for externalizing symptoms, school problems or interpersonal relationships.

Conclusions—Cognitive-behavioral preventive interventions in which youth engage in personal goal-setting and practice social-emotional skills, such as PTA, may be beneficial for the reduction of depressive symptoms over and above general support and empathy.

Keywords

depression; prevention; adolescence; randomized controlled trial; intervention research

The onset of depressive symptoms during adolescence is associated with significant functional impairment, both during adolescence and into adulthood (Avenevoli, Knight,

Kessler, & Merikangas, 2008; Fergusson, Horwood, Ridder, & Beautrais, 2005). Given these ramifications, it is particularly important to focus on preventive efforts. Depression prevention programs for adolescents have primarily been based on cognitive-behavioral principles. Three recent meta-analyses showed that youth depression prevention programs are efficacious, although effect sizes were small, ranging from $d = .16$ (Horowitz & Garber, 2006) to $d = .20$ (Merry et al., 2012) to $d = .30$ (Stice, Shaw, Bohon, Marti & Rohde, 2009). The authors also examined effect sizes by type of program: indicated, which include participants with subclinical symptoms, selective, which include participants with higher-than-average risk for development of the disorder, and universal, which are administered to all members of a target population. Effect sizes for indicated and selective programs were larger than effect sizes for universal programs (Horowitz & Garber, 2006; Merry et al., 2012), though universal programs have still been found to be effective in reducing incidence of depressive disorder (Merry et al., 2012). The Penn Resiliency Program (PRP) is one of the most well-tested cognitive-behavioral prevention programs for adolescents. A recent meta-analysis of 17 controlled evaluations of PRP found that participants reported fewer depressive symptoms at post-intervention in 11 of 14 evaluations, although the average effect was small ($d = 0.11$) (Brunwasser, Gillham, & Kim, 2009).

Efficacy over placebo allows us to distinguish between prevention program components (i.e., cognitive-behavioral techniques) and nonspecific effects that can be accounted for by therapeutic alliance or social support. The number of indicated cognitive behavioral prevention trials with placebo controls are growing, with some studies supporting superiority of cognitive-behavior prevention programs (Merry, McDowell, Wild, Bir, & Cunliffe, 2004; Stice, Rohde, Seeley, & Gau, 2008), while others do not (Dobson, Hopkins, Fata, Scherrer, & Allan, 2010; Stice, Burton, Bearman, & Rohde, 2007). The meta-analysis reviewing PRP found that 4 out of 17 evaluations included an active control, only one of which supported the efficacy of PRP at post-test (Brunwasser et al., 2009). The average effect size across these four studies was almost zero ($d = -0.02$).

Only a handful of indicated cognitive-behavioral depression prevention programs for adolescents have examined effects on non-depressive outcomes. While some studies suggest that depression prevention programs effects are specific and do not generalize to other symptoms (Clarke et al., 1995; Clarke et al., 2001), others have demonstrated positive effects for problems other than depression (Arnarson & Craighead, 2009), including anxiety (Gillham, Hamilton, Freres, Patton, & Gallop, 2006; Roberts, Kane, Thomson, Bishop, & Hart, 2003), substance use (Stice et al., 2008), and broadband internalizing and externalizing symptoms (Roberts et al., 2003). The findings regarding the effects of depression prevention programs on adaptive functioning are similarly mixed, with some studies showing positive effects on functional outcomes (Lamb, Puskar, Sereika, & Corcoran, 1998) and others not (Stice, Rohde, Gau, & Wade, 2010).

We sought to test a novel depression prevention approach where CBT skills are applied to goals that are important to adolescents and their families. Our trial included assessment of broader outcomes, including externalizing symptoms and three key areas: personal adjustment, school problems, and interpersonal relationships. Personal adjustment incorporates cognitive and intrapersonal aspects of identity development, such as self-esteem and locus of control, that may be impacted by depression. Problems in the academic and interpersonal domains serve as risk factors for increases in depressive symptoms (Nolan, Flynn & Garber, 2003; Pelkonen, Marttunen & Aro, 2003). Depression may also lead to difficulties with concentration and perceived school stress that then interfere with academic performance (Frojd et al., 2008). Likewise, depressed individuals may exhibit interpersonal dependency, self-focused attention, or ruminative thinking that elicits withdrawal from

significant others and increases the likelihood of interpersonal rejection (Frojd et al., 2008; Galambos, Leadbeater & Barker, 2004).

Although there is promising evidence for depression prevention, prior work over-relies on the use of passive control groups, and insufficiently assesses broader outcomes. The current trial uses a brief, one session active (non-waitlist) control condition and examines broader outcomes in addition to depressive symptoms that were targeted by the program. This study is also enhanced by collateral outcome data from teachers and parents. Middle school was chosen because this timeframe tends to precede the typical age of onset for depression (Lewinsohn, Clarke, Seeley, & Rohde, 1994).

Method

Participants and Procedure

Recruitment and enrollment—Youth were recruited from four Seattle public middle schools, from a total population of 2,650 7th and 8th grade students (see Figure 1). 1,190 students (45%) returned parental consent forms, assented to participation, and were administered the screening survey by our study staff in November, 2010 to January, 2011. Our goal was to identify a symptomatic sample of youth who did not yet have depressive disorders. Students who scored 14 or higher (top 25%) on the Mood and Feelings Questionnaire, administered as part of our screening questionnaire, were seen individually for a brief follow-up by study staff to assess their eligibility for the prevention trial. Exclusion criteria for students were as follows: (a) parents did not understand English, (b) current suicidal ideation, (c) currently enrolled in mental health treatment for depression or to cope with stressors, (d) symptoms consistent with probable major depressive disorder (MDD) based on responses to the Patient Health Questionnaire-9, or (e) during individual follow-up, student was perceived to be inappropriate for a group-based intervention due to clear intellectual disability or behavioral problems. Parents of students who had unmet clinical needs (suicidal ideation or probable MDD) were contacted by phone to provide feedback about their child's needs and referral information.

From the screened sample, 957 students were ineligible, 113 were eligible but were not enrolled (declined or could not be reached), and 120 were enrolled in the prevention trial and included in the final analyses (see Figure 1). A statistician applied random number sequences to de-identified study data to assign students to groups within each strata. Randomization was stratified based on school, grade, and gender, and yielded assignment of 58 students to Positive Thoughts and Actions, and 62 students to the active control group, which was an Individual Support Program (ISP). Over 95% of those randomized to ISP received their single intervention session, while over 91% of PTA youth received 8 of the 12 sessions. Demographic characteristics of participating students and their families were comparable across intervention groups, with the exception of parent education level ($p < .001$; see Table 1). We retained 112 of the original 120 students (93%) at post-intervention, as well as parents of 116 (97%) students.

Assessments

Assessments have occurred at two time points: pre-intervention interview (Time 1) and post-intervention interview (Time 2), 5 to 7 months after Time 1. Trained interviewers who were blinded to intervention status conducted structured research interviews in the family home or at our research offices. All instruments were administered separately to students, and then to parents by the same interviewer. Students nominated an academic teacher to fill out a questionnaire regarding their behavior. Internal consistency is reported at Time 1 for each measure.

Primary outcome measure: Depressive Symptoms—The Mood and Feelings Questionnaire (MFQ) (Costello & Angold, 1988) was designed for children ranging in age from 8 to 18 and was written in parallel versions for parent and youth, which were both administered in this study to assess depressive symptoms ($\alpha = .84$ youth report; $\alpha = .90$ parent report). It has previously shown high content and criterion validity (Angold, Costello, Messer, & Pickles, 1995).

Secondary symptom outcomes—The Behavior Assessment Scale for Children-Second Edition (BASC-2) provides a triangulated view of a child's behavioral functioning by considering ratings by teachers, parents, and youth (Reynolds & Kamphaus, 2004). The adolescent versions of the Teacher Rating Scale (TRS-A), Parent Rating Scale (PRS-A), and student Self-Report of Personality (SRP-A) were administered, which contain 139, 150, and 176 items, respectively. The majority of the items are rated on a four point scale (Never-Sometimes-Often-Almost Always), with some true/false items on the student form. The BASC-2 measures a broad range of psychopathology, including composite scales for internalizing and externalizing symptomatology, as well as adaptive behavior scales.

Internalizing: Internalizing problems were rated by youth, parents, and teachers ($\alpha = .90-.92$). The SRP-A internalizing problems composite is strongly correlated with depressive symptoms and with the internalizing syndrome scale of the Youth Self-Report (Reynolds & Kamphaus, 2004).

Externalizing: Externalizing behaviors on the BASC-2 were rated by teachers ($\alpha = .95$) and parents ($\alpha = .86$). The BASC-2 externalizing scale correlates highly with externalizing problems with Teacher Report Form.

Secondary instrumental outcomes—Measures of personal adjustment, school problems, and interpersonal relationships were used as secondary instrumental outcomes.

Personal adjustment: Three youth-rated subscales of the BASC were used as measures of personal competence, measuring the student's self-esteem ($\alpha = .87$), locus of control ($\alpha = .77$), and sense of inadequacy ($\alpha = .81$). Higher scores on self-esteem indicate more positive levels of adjustment, whereas lower scores on locus of control and sense of inadequacy indicate more positive levels of adjustment.

School problems: School problems were measured using two scales on the BASC, based on student ($\alpha = .86$) and teacher report ($\alpha = .93$). Youth self-report of school problems indicates their perceived adaptation to school and their relationships with teachers. The teacher composite measures academic difficulties related to motivation, attention, learning and cognition.

Interpersonal relationships: The Parent-Child Communication Scale measures parent openness to communication, and includes both parent ($\alpha = .71$) and youth ($\alpha = .76$) report forms (Loeber, Farrington, Stouthamer-Loeber & Van Kammen, 1988; Thornberry, Huizinga & Loeber, 1995).

Three subscales from the BASC-2 were used to measure the interpersonal functioning of the youth. The Interpersonal Relations subscale ($\alpha = .83$) captures the youth's perceptions of their success in relating to others and the degree of enjoyment derived in their relationship. The Relations with Parents subscale ($\alpha = .91$) measures youth's perception of being an important person in the family and the degree of parental trust and concern. The Social

Skills subscale provides a measure of the youth's interpersonal skills for engaging with others, and is rated by parents ($\alpha = .87$) and teachers ($\alpha = .92$).

Interventionists

Interventionists were generally master's level graduate students or therapists who were part of the research team. Interventionists received 1 (ISP) or 2 full days of training (PTA), and only delivered one of the two interventions.

PTA—Positive Thoughts and Actions (PTA) is a manualized, developmentally-based prevention program designed to address key factors that contribute to and perpetuate depressive symptoms during the early adolescent years. All scenarios and examples used in the curriculum focus on common stressors and situations experienced by middle school students, in addition to using personally-generated issues. PTA focuses on cognitive-behavioral factors such as the youth's coping and cognitive style and problem-solving, with application of skills to broader areas including school functioning, interpersonal relations, and health behavior (McCarthy, Violette, & McCauley, 2011). PTA student groups took place at school during the school day (3 schools) or after school (1 school). Groups consisted of weekly (once a week for 12 weeks) 50-minute sessions with groups of 4–6 students. PTA includes significant involvement of parents through the inclusion of two home visits with parents and students together, and two parent workshops, conducted in the evenings at the school during weeks 4 and 6 of the student groups. See Table 2 for a description of the intervention structure and session titles. Topics addressed during parent sessions were: setting personal goals for students and parents, adolescent development, teaching parents cognitive and behavioral skills, and communication skills. At week 11 of the groups, students rated their satisfaction and comfort with the PTA class using a modified version of the Working Alliance Inventory (Horvath & Greenberg, 1989). Following each home visit and parent workshop, parents rated how helpful the content of the session was.

Individual Support Program—The control group participants received an Individual Support Program (ISP), which was a modified version of the Measurement for Adolescent Potential for Suicide intervention (Eggert, Thompson, Herting, & Nicholas, 1995). This modification involved removal of modules on suicide risk (because youth with suicidal ideation were excluded during the recruitment process), and adapting questions to ensure relevance to a middle school population. The ISP intervention consisted of a 45–90 minute individualized supportive interview, facilitated by the use of a laptop computer, in which the interviewer queried about stressors, depression and anxiety, personal control/hopelessness, coping strategies, and support resources. The interviewer's role was to summarize and empathize with the student's perspective, while formulating an overall sense of the youth's areas of strength and need. The student and interventionist worked together on a brief action plan to be implemented after the interview to address issues that the youth would like to change, and the student was asked to follow up with a school counselor or teacher that they chose for future support. The interventionist called the youth's parent to discuss the student's plan and any areas of need in which the parent could be helpful, and also contacted the student's chosen supportive school staff member. Thus, both ISP and PTA involved supportive adult contact with problem-solving.

Fidelity Monitoring

Two PTA video recordings per group ($n = 22$, 17%) were randomly selected and independently rated for presence/absence of core concepts of the curriculum, achieving 96% agreement. Overall mean intervention adherence across group leaders was excellent at 92%, (range 73% –100%). A comparable percent of audio-recorded ISP interviews ($n = 10$, 16%)

were rated for adherence to core concepts of the intervention, with 99% agreement between coders. Individual adherence ratings ranged from 80% to 96%, with an overall mean of 91%.

Data Analyses

To determine the effects of the intervention, general linear model (GLM) repeated measures analyses were conducted for each dependent variable with intervention group (PTA versus ISP) as the between-subjects variable and time as the within-subject variable. All analyses were conducted controlling for parental education using an intent-to-treat design with a significance set at $p < .05$. Effect sizes (ESs) were also computed for all variables in order to examine the magnitude of intervention effects using the procedures for Cohen's d (Cohen, 1988). Between group indices of ES were calculated such that positive values indicated an advantage for PTA over ISP, using adjusted means from the GLM analyses. Within group ESs were also calculated using the Time 2 mean minus the Time 1 mean divided by the pooled standard deviation.

Results

T-tests and chi-square analyses were conducted to examine between group differences for eligible students who enrolled ($n = 120$) versus eligible students who declined participation or could not be contacted to recruit ($n = 113$). No significant differences between these groups were found for gender, race, ethnicity, Time 1 depression or anxiety (all $ps > .14$), indicating overall similarity between adolescent enrollees and those who did not participate.

On average, students in the PTA group attended 10.7 out of 12 sessions. At week 11, students reported high levels of satisfaction: 84% of students felt comfortable in the group and 83% liked it "very much" or "pretty much." A total of 56 parents participated in home visits, with 85% ($n=49$) attending both home visit sessions. 74% of the participating parents found the initial home visit to be "very helpful", 24% found it to be "somewhat helpful", while 2% found the session to be "a little helpful". A total of 22 parents (38%) attended both parent workshop sessions, while 13 (22%) attended one session, and 23 parents (40%) did not attend any. Overall, the parent workshop components were rated to be "very helpful" (45%) or "somewhat helpful" (55%) by those who participated. More than half of the parents (58%) received at least 3 of the 4 parent sessions.

We examined three different types of symptom outcomes, including depressive symptoms, internalizing symptoms, and externalizing symptoms, as shown in Table 3. Youth reported levels of depression were comparable between PTA and ISP groups at screening (PTA: $M = 22.39$, $SD 7.78$; ISP: $M = 22.59$, $SD 8.95$). Participants assigned to PTA showed greater reduction in depression symptoms from Time 1 to Time 2 compared with the ISP group, using the youth-reported primary outcome measure (MFQ). The effect size for between-group differences on youth-reported depressive symptoms at Time 2 (post-intervention) was .36 [95% CI: $-.02$, $.73$]. Compared to the ISP group, PTA youth also reported a greater reduction of internalizing symptoms on the BASC-2 from Time 1 to Time 2. Group $\times$ time interactions for measures of parent-reported depressive symptoms, and internalizing and externalizing problems based on parent and teacher report were not significant.

Table 4 shows means, standard deviations, group $\times$ time interaction terms, and effect sizes (Cohen's d , including within group and between group) for each of the three broader outcomes. Youth in PTA showed greater increases in personal adjustment on two of three measures: sense of inadequacy and self-esteem. Academic outcomes, as measured by the school problems scale of the BASC, did not significantly differ by groups over time for teacher or child report. Compared to ISP participants, youth in PTA showed greater gains in social skills according to parent-report, but not teacher-report. Indicators of interpersonal

relationships, including parent-child communication, relations with parent, and interpersonal relations, were not significantly different by group across time.

Discussion

Findings from the current study with a diverse group of adolescents (52% ethnic minority) demonstrate that PTA was an effective program for decreasing depression symptoms when compared to a control group receiving limited non-specific support. These results add to the growing evidence (Stice et al., 2007; Stice et al., 2008) for the positive effects of skill-based group prevention programs in reducing depression risk. The effect size for PTA observed in this study for youth-reported depressive symptoms ($d = 0.34$) compares favorably to the effect sizes found in recent meta-analyses of youth depression: $d = 0.23$ for indicated programs (Horowitz & Garber, 2006), and $d = 0.30$ (Merry et al., 2012; Stice et al., 2009). This may be due to the fact that PTA was developed specifically for early adolescents using age-appropriate curriculum material, and used skills-based training and psychoeducation to parents via workshops and home visits, in addition to the student groups. At the same time, we cannot rule out that some of the effects of PTA are due to differences in dose or elements of being involved in a group of peers, including important non-specific effects (Dobson et al., 2010; Stice et al., 2008), given that our control condition was much briefer and delivered on an individual basis. Moreover, a large decline in symptoms was observed for both groups between screening and intervention, possibly reflecting spontaneous improvement, and consistent with other studies of depressed youth (e.g., Richardson et al., 2012).

In the current study, we found program effects for youth-reported depression outcomes but not those reported by parents or teachers. The absence of effects for parent report is generally consistent with the few prevention trials that include parent-report measures (Clarke et al., 1995; Clarke et al., 2001). Similarly, meta-analyses of treatment studies for youth depression have found that depression treatment has essentially no effect when based on parent-reported outcomes, and that effect sizes for parent-reported outcomes are significantly lower than youth reported effect sizes (Weisz, McCarty & Valeri, 2006). Consistent with research suggesting that parents are relatively insensitive reporters of their children's depressive symptomatology (Angold et al., 1987), in the current study parents reported on average over 40% fewer symptoms for their adolescents.

Parents participated in PTA through both home visits and workshops, although home visits were much better attended, likely due to the conveniences afforded by coming to their home at a time that was chosen for its convenience to the family. Workshop attendance rates (38% of parents attended both; 60% attended at least 1) were better than those achieved by the Australian test of the Resourceful Adolescent Program where 35% of adolescents had a parent attend any session and only 10% attended all three (Schochet et al., 2001). Yet our rates were somewhat lower than those achieved by the Penn Resiliency Program (involving six 90-minute parent sessions with 91% of parents completing at least one and 41% attending 5/6 sessions) (Gillham et al., 2006). Despite the modest attendance rates realized in our study, all of the parents who attended the workshops reported that they were at least somewhat helpful. However, the benefits of a parent component over and above student-only skills groups requires further testing.

The pattern of results also suggests that PTA participants demonstrated some (albeit limited) changes in two other domains of adolescent functioning examined, specifically personal adjustment, and interpersonal relationships. Youth-reported personal adjustment indicated advantages of PTA in sense of inadequacy and self-esteem, consistent with previous prevention programs that have documented changes in similar domains (Lamb et al., 1998). We found no effects of PTA on externalizing symptoms, consistent with previous prevention

(Clarke et al., 1995; Clarke et al., 2001) and treatment literature (Weisz et al., 2006). We did find a beneficial effect of PTA on parent-reported social skills, although evidence suggested no effect for other aspects of interpersonal functioning.

One limitation of the current study may be the lack of correction for possible alpha inflation; however all tests were *a priori* planned comparisons and Bonferroni corrections with our small sample size would significantly reduce power. Other limitations of the current study include lack of diagnostic data regarding onset of depressive episodes or disorder, and examination of outcomes at post-treatment only. Future research examining the PTA program should examine whether differences between the active PTA group and the control group are maintained over time in order to answer key questions about the true effectiveness of the PTA program as a prophylactic intervention. Moreover, despite gathering outcome data from multiple informants including parents and teachers, the fact that significant group differences emerged only for youth-reported outcomes somewhat limits the robustness of the findings. Although both PTA and ISP were portrayed as potentially useful intervention programs, parents, youth, and interventionists were not blinded to allocation, and dose of intervention was not equal. In future studies, it will be important to examine whether youth changes in targeted domains might account for changes in youth internalizing and externalizing outcomes over time to investigate proposed mediation pathways, and to test moderation hypotheses to investigate how individual factors, including program dose, might influence the effectiveness of the PTA program.

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Figure 1.
Participant flow from screening to post intervention.

Table 1

Sample Demographic Characteristics

Characteristics	ISP <i>n</i> = 62	PTA <i>n</i> = 58	<i>t</i> or χ^2	<i>p</i>
Mean Age (<i>SD</i>)	12.7 (.77)	12.8 (.69)	-0.13	.45
Sex, <i>n</i> (%)			1.03	.31
Female	35 (56.5)	38 (65.5)		
Male	27 (43.5)	20 (34.5)		
Grade, <i>n</i> (%)			0.02	.89
7 th	35 (56.5)	32 (55.2)		
8 th	27 (43.5)	26 (44.8)		
Race, <i>n</i> (%)			3.04	.69
White	38 (62.9)	28 (48.3)		
African American	3 (4.8)	5 (8.6)		
Asian	9 (14.5)	11 (19.0)		
Native American	5 (8.1)	7 (12.1)		
Native Hawaiian/Pacific Islander	1 (1.6)	2 (3.4)		
Other/Multiracial	5 (8.1)	5 (8.6)		
Ethnicity, <i>n</i> (%)			1.14	.29
Hispanic	4 (6.5)	7 (12.0)		
Non-Hispanic	58 (93.5)	51 (88.0)		
Parental Education, <i>n</i> (%)			14.97	.001
HS Diploma/GED/Some College/AA	32 (51.6)	21 (36.2)		
Bachelor's Degree	14 (22.6)	32 (55.2)		
Masters/Professional/Doctoral Degree	16 (25.8)	5 (8.6)		
Family Constellation, <i>n</i> (%)			0.01	.93
Single (never married, divorced, widowed, long-term separated)	23 (37.1)	22 (38.0)		
Married (or 2 cohabitating parents)	39 (62.9)	36 (62.0)		
Annual Household Income, <i>n</i> (%)			3.35	.17
50,000	23 (37.7)	21 (36.2)		
50,000 to 100,000	16 (25.8)	23 (39.7)		
100,000	22 (35.5)	13 (22.8)		

Note: Annual household income was not reported for 2 subjects.

Table 2

Chronological Summary of Positive Thoughts and Actions Session Structure

Week Number	Type of Session	Title of Session
1	Home Visit 1	Getting to Each Other
2	Youth Session 1	Introduction and Purpose
3	Youth Session 2	Setting Goals
4	Youth Session 3	Start with Action
5	Youth Session 4	Positive Thoughts, Positive Feelings
5	Parent Workshop 1	Positive Thoughts and Actions for Parents
6	Youth Session 5	Changing the Way We Think and Feel
7	Youth Session 6	STOP before Responding
7	Parent Workshop 2	Communicating with Your Teen
8	Youth Session 7	Making Decisions & Problem Solving
9	Youth Session 8	Managing Conflict & Anger
10	Youth Session 9	Learning
11	Youth Session 10	Relationships
12	Youth Session 11	Making Healthy Decisions
13	Youth Session 12	Staying on Track & Celebration
14	Home Visit 2	Staying Successful

Table 3

Mean Symptom Level by Informant, Group, and Time

	Time 1			Time 2			Within Group ES			Group by time		
	PTA	ISP		PTA	ISP		PTA	ISP		F	p	Between group ES [95% CI]
Depressive Symptoms												
Youth	15.11 (7.86, 58)	14.41 (7.97, 62)		12.33 (8.85, 52)	15.59 (9.24, 58)		-.33	.14		4.38	.039*	.36 [-.02, .73]
Parent	8.50 (8.10, 57)	8.52 (7.28, 62)		6.86 (7.36, 54)	8.26 (7.08, 59)		-.21	-.04		1.78	.185	.20 [-.17, .57]
BASC-2 Internalizing												
Youth	50.07 (8.32, 58)	50.84 (9.39, 62)		47.06 (8.17, 52)	50.79 (8.75, 56)		-.36	-.01		4.71	.032*	.44 [.05, .82]
Parent	52.53 (10.88, 58)	54.18 (11.61, 61)		48.92 (10.32, 53)	50.57 (11.31, 58)		-.34	-.31		2.24	.137	.18 [-.19, .56]
Teacher	50.74 (10.81, 50)	49.98 (7.56, 53)		53.78 (10.07, 36)	52.71 (9.30, 42)		.29	.33		.29	.595	-.14 [-.59, .31]
BASC-2 Externalizing												
Parent	48.57 (7.67, 59)	50.64 (9.65, 61)		47.28 (7.65, 53)	49.57 (8.82, 58)		-.17	-.12		1.28	.260	.30 [-.08, .67]
Teacher	47.74 (6.77, 50)	50.29 (11.39, 53)		48.22 (8.09, 37)	51.36 (11.85, 42)		.07	.09		.363	.549	.30 [-.16, .74]

Note. Standard deviations and *ns* are in parentheses (SD, *n*). ES= Effect size (Cohen's *d*) *Between groups* (+) = PTA > ISP (better than); (-) = PTA < ISP (worse than).

Table 4

Instrumental Outcomes by Group and Time

	Time 1			Time 2			Pre to Post Effect Sizes			Group by time		
	PTA	ISP		PTA	ISP		PTA	ISP	F	p	Cohen's <i>d</i> [95% CI]	
BASC-2 Personal Adjustment (Youth)												
Sense of Inadequacy	52.14 (10.36, 58)	52.55 (11.65, 62)		49.56 (9.38, 52)	53.32 (10.50, 56)		-.26	.07	4.08	.046*	.38 [-.01, .75]	
Locus of Control	47.38	49.11		47.31	51.55		-.01	.26	2.88	.092	.43 [.05, .81]	
Self Esteem	46.60 (10.03, 58)	46.82 (8.10, 62)		50.98 (8.77, 52)	45.25 (10.74, 56)		.44	-.14	9.46	.003*	.54 [.15, .92]	
BASC-2 School Problems												
Teacher	51.22 (9.82, 50)	51.70 (10.03, 53)		51.87 (10.12, 38)	50.95 (9.95, 42)		.07	-.08	2.10	.152	-.07 [-.51, .38]	
Youth	47.22 (9.03, 58)	49.63 (9.01, 62)		47.41 (9.25, 51)	50.46 (8.67, 56)		.02	.09	1.70	.195	.34 [-.04, .72]	
Interpersonal Relationships (Youth)												
PCC	19.40 (4.24, 58)	19.34 (3.26, 62)		19.71 (3.99, 52)	19.41 (3.31, 58)		.08	.02	.10	.751	.08 [-.29, .46]	
Relations with Parent	49.28 (10.63, 58)	47.42 (10.49, 62)		49.73 (9.36, 52)	45.98 (10.87, 56)		.04	-.13	2.13	.147	.37 [-.01, .75]	
Interpersonal Relations	49.95 (10.48, 58)	50.24 (9.39, 62)		51.21 (10.57, 52)	48.79 (10.01, 56)		.12	-.15	2.48	.118	.24 [-.14, .61]	
Parent												
PCC	25.89 (3.26, 57)	26.59 (2.63, 62)		26.22 (2.75, 54)	26.17 (3.08, 59)		.11	-.15	.38	.538	.01 [-.36, .38]	
Social Skills	52.28 (9.76, 57)	51.85 (8.73, 62)		53.94 (9.13, 53)	49.93 (9.39, 58)		.18	-.21	4.88	.029*	.42 [.04, .80]	
Teacher												

	Time 1		Time 2		Pre to Post Effect Sizes			Group by time	
	PTA	ISP	PTA	ISP	PTA	ISP	F	p	Cohen's <i>d</i> [95% CI]
Social Skills	51.50 (10.10, 50)	51.87 (11.40, 53)	54.86 (12.22, 37)	53.02 (11.25, 42)	.14	.10	2.10	.152	.17 [-.28, .61]

Note. Standard deviations and *ns* are in parentheses (SD, *n*). PCC = Parent-Child Communication. Cohen's *d* (+) = PTA > ISP (better than); (–) = PTA < ISP (worse than).