

Bodine Overview and Results

The goal of this study was to gather data on the effectiveness of the Inner Strength Teen Program. This 12-week mindfulness-based intervention is designed for inner-city adolescents. The program incorporates contextual lessons on cultural development, evolutionary biology, and neuroscience with meditation exercises to promote self-development and reliance. This study was conducted across for cohorts of adolescents from September 2015 to June 2017.

Participants included 317 eleventh and twelfth grade students from 14 classrooms at Bodine William W. High School in Philadelphia. The evaluation design was quasi-experimental in that classrooms were assigned to the intervention or wait-list control group based on period of the day. Students received the programming once a week for 40 minutes during the regular school day. The average class size was 20 students. The curricula was administered by one of three trained Inner Strength instructors. The present analyses includes data on three groups of students: 199 in their first year of the program, 49 in their second year of the program, and 74 wait-list control students.

We conducted three waves of brief assessments via paper surveys administered during the school day as part of the mindfulness classes. The evaluation assessed youth's self-regulation (both short and long-term) using the Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007) and self-compassion using the Self-Compassion Survey (SCS; Neff, 2003). Long-term self-regulation is instrumental in obtaining long-range goals and aspirations, as it taps persistence with long-term projects, adaptability, and the ability to change one's actions in an effort to reach an objective. Short-term regulation includes both physical (e.g., ability to restrain from fidgeting) and psychological (e.g., being able to calm oneself down) regulation in the immediate context. Of the 317 students who participated, 214 (67.5%) completed both the pre- and post-test assessments (see Table 1).

The effect of the program was examined using independent t-tests and analysis of covariance (ANCOVA). An independent t-test allows us to compare scores between two unrelated groups (intervention and control) and uses statistics to determine the degree to which those scores differ (t -value) and how reliable that difference is (p -value). The test does not control for change over time, but rather reflects whether the group means differ at each time-point. The results of the independent t-tests examining the differences between the control group and students in their first year of the intervention are displayed in Table 2. Results suggest that the two groups were similar at pre-test (T1) across the three measures. At post-test (T2), the groups were similar on short-term regulation, showed some variation on long-term regulation, and differed significantly on self-compassion (see Figure 1). Next, we examined the extent to which the change from pre- to post-test differed across the two

groups over time using a series of ANCOVAs. ANCOVAs evaluate whether the means on outcome variables are equal across the groups, while statistically controlling for the effects of other variables. In this case, we entered the student’s pre-test score and group as covariates in these models. Thus, the model examined the difference between the groups on means that were adjusted for pre-test scores. The results indicated that group status was not significant for short-term regulation, $F(1, 169) = 1.46$, ns. As expected, however, group status was moderately significant for long-term regulation, $F(1, 160) = 2.86$, $p < .10$, and statistically significant for self-compassion, $F(1, 145) = 7.75$, $p < .01$. Specifically, there was a moderate difference between the intervention and control groups in terms of long-term regulation, such that the students in the intervention group maintained their levels of long-term regulation while those in the control group experienced a decline. The effect of the intervention on self-competence was significant; students in the intervention group experienced increases over time while those in the control group experienced a decline.

We also examined the differences between students in the control group and those who were in the second year of the intervention. The mean scores are displayed in Table 3. Results of the independent t-tests suggest that the two groups were similar at pre-test (T1) across the three measures. At post-test (T2), the differences between groups was moderate for short-term regulation and significant for both long-term regulation and self-compassion, such that the intervention group had the advantage (see Figure 2). Next, we ran a series of ANCOVAs to examine the difference between groups on the adjusted means scores. The results indicated that group status was not significant for short-term regulation, $F(1, 80) = 1.43$, ns. As expected, however, group status was moderately significant for long-term regulation, $F(1, 78) = 3.58$, $p < .10$, and statistically significant for self-compassion, $F(1, 61) = 6.16$, $p < .05$. Similar to the first-year analyses, there was a moderate difference between the intervention and control groups in terms of long-term regulation, such that the students in the intervention group maintained their levels of long-term regulation while those in the control group experienced a decline. The effect of the intervention on self-competence was significant; students in the intervention group experienced increases over time while those in the control group experienced a decline.

In sum, the results of the study suggest that the Inner Strength Teen Program enhanced self-compassion. This finding is promising in that this social-emotional construct is important for resiliency among at-risk youth. Although short-term and long-term regulation did not change significantly, students in the intervention groups were able to maintain their levels of these constructs, while students in the control group experienced meaningful decline, particularly in long-term regulation.

Table 1. Analytic Sample (n=214)

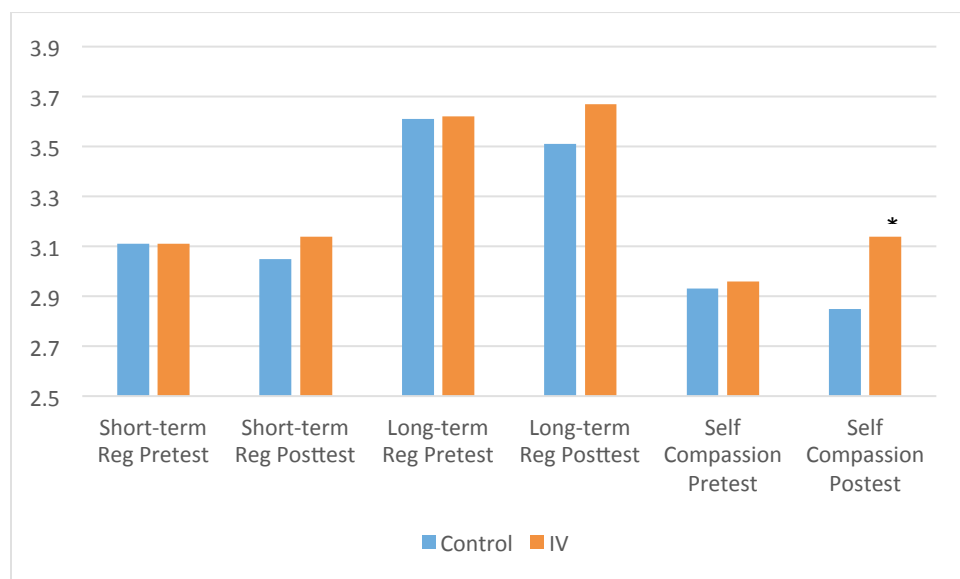
		Year in Intervention			Total
		Control	1st year of Inner Strength	2nd year of Inner Strength	
Grade	11	20	105	0	125
	12	26	25	38	89
Total		46	130	38	214

Table 2. Results of independent *t*-tests examining between-group differences for control versus students in the first-year of the intervention

	Group	N	Mean	SD	<i>t</i> -value	<i>p</i> -value
Short-term self-regulation T1	Control	46	3.11	.63	.01	.99
	Intervention	130	3.11	.55		
Short-term self-regulation T2	Control	43	3.05	.59	-.89	.37
	Intervention	129	3.14	.55		
Long-term self-regulation T1	Control	46	3.61	.56	-.16	.88
	Intervention	122	3.62	.50		
Long-term self-regulation T2	Control	43	3.51	.70	-1.42	.16
	Intervention	128	3.67	.52		
Self-compassion T1	Control	45	2.93	.72	-.26	.74
	Intervention	127	2.96	.74		
Self-compassion T2	Control	34	2.85	.81	-1.98	.05
	Intervention	117	3.14	.72		

Note. A significant difference is represented by $p < .05$.

Figure 1. Control and first-year of intervention scores by group



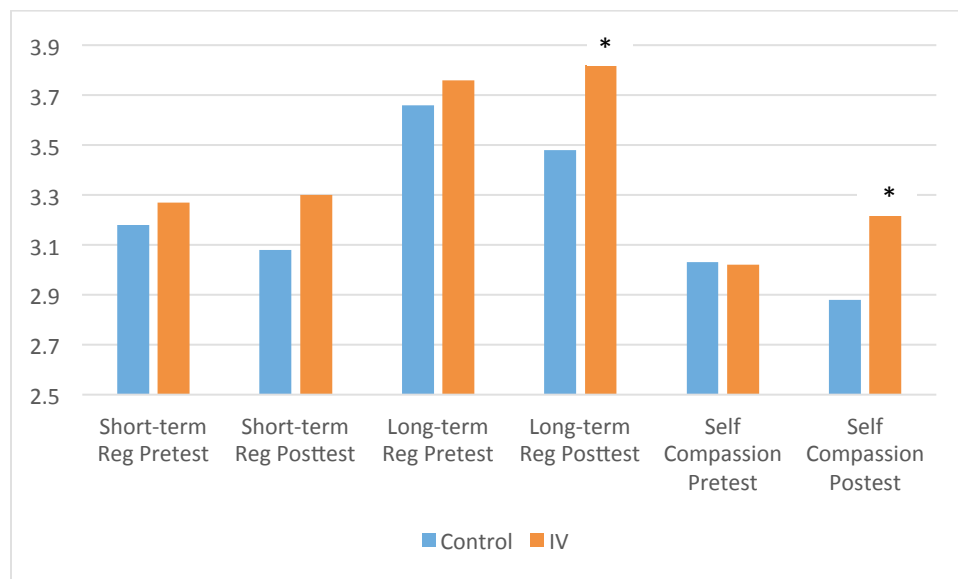
Note. * indicates a significant difference at $p < .05$.

Table 3. Results of independent *t*-tests examining between-group differences for control versus students in the second-year of the intervention

	Group	N	Mean	SD	<i>t</i> -value	<i>p</i> -value
Short-term self-regulation T1	Control	66	3.18	.63	-.77	.44
	Intervention	47	3.27	.54		
Short-term self-regulation T2	Control	49	3.08	.57	-1.78	.08
	Intervention	41	3.30	.62		
Long-term self-regulation T1	Control	66	3.66	.58	-.95	.35
	Intervention	46	3.76	.52		
Long-term self-regulation T2	Control	49	3.48	.67	-2.69	.01
	Intervention	40	3.82	.52		
Self-compassion T1	Control	64	3.03	.80	.07	.95
	Intervention	41	3.02	.86		
Self-compassion T2	Control	39	2.88	.80	-2.13	.04
	Intervention	34	3.29	.84		

Note. A significant difference is represented by $p < .05$. A moderate difference is represented by $p < .10$.

Figure 2. Control and second-year of intervention scores by group.



Note. * indicates a significant difference at $p < .05$.

Measure References:

Moilanen, K. (2007) The Adolescent Self-Regulatory Inventory: The development and validation of a questionnaire of short-term and long-term self-regulation. *Journal of Youth and Adolescence*, 36(6), 835-848.

Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223-250.