

## **Assessing the effects of Second Step: A program evaluation of a pilot implementation**

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### **Abstract**

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*Although school violence has decreased over the past two decades there is need for a targeted approach to improve social competence in children. Second Step is a social-emotional curriculum that has effectively decreased school violence and promoted a positive school environment. A ten-month longitudinal evaluation was conducted in a multi-ethnic suburban school district with students in enrolled in pre-kindergarten, kindergarten, second, third and fourth grades. Teacher ratings on Behavior Assessment System for Children, Second Edition revealed significant improvements on measures on the Aggression, Social, and Withdrawal scales, and significant increase in social-emotional knowledge. Findings support the continued validation of the Second Step program with a multiethnic sample and the effects of program sustained after post-intervention.*

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**Keywords:** Second Step, school violence, prevention, social-emotional

School violence represents an umbrella term for classifying the harmful acts that occur in schools, including bullying, suicide, weapon possession, and sexual harassment (Eisenbraun, 2007). A recent survey of public schools in the United States found that 85% of schools reported that one or more crime-related incidents had occurred at school, which equates to approximately 2 million crimes between 2007-2008 (Dinkes, Kemp, Baum, & Snyder, 2009). Although longitudinal research showed a 25 percent decrease in school violent crime victimization in the U.S. between 2006 and 2014, this decline remains muted by high-profile school shootings and threats (Musu-Gillette, Zhang, Wang, Zhang, Kemp, Diliberti, & Oudekerk, 2018). An equally important finding is the increased use of security staff present in school, with a higher percentage reported by primary schools comparing 2015-16 and 2005-05 (45 vs. 26 percent) (Musu-Gillette et al., 2018). One of the most recent focal points of the federal administration as part of an overarching plan in protecting children from harm is to bring mental health professionals (i.e., school psychologists, social workers, counselors) together to support students struggling with mental health issues and help avert crises before they occur (Aud et al., 2013). The pervasive nature of school violence has led to a focus on school-wide prevention efforts to reduce youth violence and antisocial behavior, which includes adopting frameworks like social-emotional learning (SEL).

According to Zins, Bloodworth, Weissberg, and Walberg (2004), SEL is defined as “the process through which we learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly, develop positive relationships, and avoid negative behaviors” (p. 4). Scholars and practitioners have accepted SEL as an important component of schooling practices (Comer, Darling-Hammond, Goleman, Shriver, & Buffett, 2016). As such, it is important to understand that the components of SEL program, which leads to positive developmental trajectories (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2008; Jones, Greenberg, & Crowley, 2015), and indirectly promotes improved academic outcomes (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

Embedding this approach into multi-tiered approach with interventions that teach children how to solve problems and interpersonal conflicts leads to the development of stronger school community, increased prosocial competence, decreased antisocial behavior, improvements in achievements, and decreases in internalizing behaviors (Osher et al, 2008). One example of an SEL curriculum that has been endorsed as exemplary by the U. S. Department of Education's Office of Educational Research and Improvement (OERI) panel for safe and drug-free schools is Second Step: A Violence Prevention Program. Second Step is a universal, school-based, prevention curriculum for children in preschool through middle school ages designed to promote social competence, reduce social-emotional problems (Committee for Children, 2002), and prevent aggression over time, by initially focusing on increasing prosocial behaviors (Cooke et al., 2007). Accordingly, the Second Step curriculum uses a developmental approach combined with sequential classroom lessons to teach problem solving and other social emotional skills. Each lesson is facilitated by school-based personnel using direct instruction (e.g., counselors, school psychologists, social workers, teachers), which focuses on key concepts for the unit being taught (e.g., empathy, impulse control and problem solving, emotion/anger management).

Findings from several lines of research (August, Egan, Realmuto, & Hektner, 2003; Dodge et al., 1997; Ladd, 2006) converge to suggest that aggressive children exhibit deficits in social skills knowledge and are more prone to respond impulsively when encountering social problems. These results suggest the importance for continuation of research focused on evaluating intervention programs to improve social competence and social-emotional knowledge to prevent aggressive behavior. Recent studies incorporating Second Step have yielded positive results but have varied in their design and use of objective measures to assess changes in behavior and social emotional knowledge.

For example, Low, Cook, Smolkowski, & Buntain-Ricklefs (2015) conduct a randomized controlled trial using the 4th edition of Second Step to assess its impact on the social-behavioral outcomes of kindergarten to second graders over one year. Results of the study indicated the Second Step program was most beneficial for students who demonstrated higher levels of problem behaviors (i.e., baseline scores on measures of social-emotional competence were below acceptable range at pretest). In another large scale study, Neace and Munoz (2012), adopted a randomized wait control pre-post design across 12 elementary schools to assess changes in knowledge attitudes and skills and decreases in non-cognitive outcomes (e.g., suspensions, tardiness and absences). Program effects on the primary outcomes indicated a significant increase in the composite knowledge/skills score fundamental to prosocial behavior from pre-intervention to post-intervention. In a much smaller study, Brown et al (2012), used a paired t-test design at one school with a predominantly Latino, English language learner sample to assess changes in social and emotional knowledge, as assessed by the KASS (Committee for Children, 2004) and behavioral and emotional risk as measures by the self-report and teacher report of the BASC-2 Behavioral and Emotional Screening System (BESS; Kamphaus & Reynolds, 2007). Results revealed significant improvement in KASS scores between overall pre- and post-intervention. Additionally, significant differences between overall pre- and post-intervention BESS scores were found. Although the current literature supports the use of Second Step across various designs, including randomized controlled trials (RCTs), single group repeated measures, quasi-experimental, the use of longitudinal designs focused on improving social emotional skills are needed to provide confirmatory evidence of the benefits of Second Step (Beisly, 2011; Brown et al., 2012; Espelage et al., 2013; Neace & Munoz, 2012).

As researchers understand social emotional skills, a key feature is the regulation of emotions, as well as an overall assessment a child's ability to navigate and meet the social and emotional demands of the environment (Gresham, 1986; Merrell & Gueldner, 2012). Eisenberg, Spinrad, and Eggum (2010), proposed that when young children experience high negative emotionality leads to an inability to self-regulate and manifests as aggression, social withdrawal and an inability to follow rules (Campbell et al., 2000; Liu, 2004)

Based on the above discussion, the purpose of the proposed study was to conduct a comprehensive implementation of a program at an ethnically diverse school on reducing the frequency of office discipline referrals (ODRs), aggressive behaviors and improving social competence measured through teacher ratings. The primary focus of this study was to evaluate the main effects of Second Step on elementary aged students' social-emotional competencies, with an emphasis on teacher ratings of aggression, social skills, and withdrawal using the Behavior Assessment System for Children, Third Edition (BASC-2; Reynolds & Kamphaus, 2004). For the current study, aggression is defined as acting in a hostile manner that is threatening to others; social skills represent the skills needed for interacting successfully with peers and adults across settings; withdrawal is defined as a tendency to avoid others and social contact.

We hypothesized that there would be a decrease in aggressive and withdrawal behaviors and an increase in social skills as a result of the program implementation. This hypothesis is informed by research that the Second Step curricula have been linked to student changes in prosocial attitudes, increased social skills, and decreased aggression.

The primary research question for this study was:

1. Does the implementation of the Second Step curriculum improve the skills associated with social competence and reduce problem behaviors that impact classroom instruction?

## **Method**

### ***Participants***

The participants involved in the evaluation were 148 students in pre-kindergarten through grade 4 across three of the five elementary schools in the district, with the Second Step program implemented randomly across the schools. Although the Second Step program was being piloted across three schools within the district, evaluation information was collected on a maximum of ten children randomly selected by each teacher across eight classrooms. Seventy-four children were selected from the three schools implementing the Second Step program and a non-matched control group was selected from the schools which the Second Step program was not being implemented. The districts' commitment to social-emotional learning was demonstrated through implementation of Positive Behavior Support for several years prior to the decision of piloting Second Step. Evidence of this commitment was shown through external evaluation of schools with Schoolwide Evaluation Tool (SET; Sugai, Lewis-Palmer, Todd & Horner, 2001) scores reaching fidelity for multiple years. The intent was to make the Second Step program a regular and permanent part of school curriculum for all the students in the school. The participating school district, teachers, and parents of the students provided passive consent—in accordance with IRB procedures and district policies. The demographic characteristics of the sample are presented in Table 1.

### ***Intervention Procedures***

The Committee for Children (2002) has outlined a clear set of steps for successful implementation of the Second Step curriculum. The schools within the district piloting the implementation of the Second Step curriculum followed these steps as outlined. The teachers were trained over a period of three weeks by qualified trainers, and procedures for implementing Second Step were standardized across all five schools. The lessons were implemented by classroom teachers and one school social worker for approximately 30 minutes per day, twice a week. Weekly support sessions were offered before and after school to the implementers to support their delivery of the program. The implementers used the relevant photo cards to the class and followed the lesson outline on the reverse side of the card. The instructional techniques included discussion, teacher modeling of the skills, and student role play (Sylvester & Frey, 1994, 1997). The classrooms within the schools implementing the Second Step curriculum intended to make the program a permanent part of the school curriculum for all students in the school.

### ***Measures***

*Behavior Assessment System for Children, Second Edition.* The Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) is a standardized, multi-dimensional measure of both adaptive and clinical behaviors of children. The current study used the Teacher Rating Scale (TRS) for children aged 4 – 11. The BASC-2 TRS contains 100 – 139 items based on the age of the child rated. The current study utilized the Aggression, Social Skills, and Withdrawal scales of the TRS. In the validation study of the BASC-2, the internal consistency of all subscales used for this study were above  $r = .80$  (Reynolds & Kamphaus, 2002).

*Level of problem behavior.* Student problem behavior was measured using total office discipline referrals (ODRs). ODRs are used to document serious incidents of problem behavior and provide an indicator of both individual student behavior and overall levels of problem behavior in the school (Sugai, Sprague, Horner, & Walker, 2000). School personnel issue ODRs to students for a defined set of severe behavior violations, such as physical aggression or harassment. In reality, an ODR represents a behavioral chain, including (a) the problem behavior, (b) observation of the behavior by school personnel, (c) determination whether the behavior meets criteria for an ODR, and (d) completing the ODR form (Sugai et al., 2000).

*Treatment integrity.* Each staff member implementing the Second Step program was observed on three separate occasions during randomly selected units (e.g., empathy, impulse control and problem solving, emotion/anger management) and lessons presented to the children in the classroom. The fidelity measure contained 17 items used to assess the implementer's delivery of the core program components of each lesson (e.g., teacher directed delivery, teacher modeled role-play, student role-play). For each item across the core components a graduate student trained in use of the fidelity measure assessed adherence, whether the item was implemented (yes/no). The adherence score was calculated by summing the number of dichotomously items scored as one and dividing by the total number of items on the fidelity measure.

### Results

Four repeated measures 2 x 3 ANOVAs were used to assess if there were significant changes in social competence as measured by the three scales of the BASC-3 TRS from pretest (January 2016) to follow-up (May 2016 and October 2016) and ODRs. Table 2 contains the descriptive statistics for the dependent variables used in the analyses. Full data sets were available for all 148 children. On three of the repeated measures ANOVAs, Mauchly's test indicated that the assumption of sphericity was not violated (Withdrawal, Social Skills, and ODRs), when the assumption was not met Greenhouse-Geisser corrected tests were reported. Across all the variables of interest, there were no unique effects for gender or grade. There was a significant time by group effect on the Withdrawal scale,  $F(2, 288) = 9.59, p < .001$ , showing a decreasing trend to avoid social contact. As can be seen in Figure 1, the experimental group was rated as more withdrawn across each time period.

Teacher ratings on the Social Skills scale revealed a significant time by group effect on the Social Skills scale,  $F(2, 288) = 17.25, p < .001$ , showing an increasing trend of successfully interacting with peers and adults (see Table 3). At the start of intervention, the control group was rated more socially competent than experimental group; however, nine months later the experimental group showed an increase in social skills. Results can be seen in Figure 2.

On the Aggression scale, teacher ratings showed a significant time by group effect  $F(1.80, 259.19) = 2.53, p < .05$ , show a decreasing trend of less aggression for both groups. Figure 3 showed that the experimental group was more aggressive than the control group and nine months later the groups obtained similar ratings.

Finally, when examining the number of ODRs, there was a significant time by group effect,  $F(2, 288) = 12.13, p < .001$ , which revealed a small decreasing trend. The experimental group had significant less ODRs at the beginning and end of the intervention, while the control group showed few changes in the number of ODRs earned. Figure 4 shows these changes from pre-test to follow-up.

Treatment adherence indicated that staff was implementing the majority of the core components with fidelity, on average 92% of the program components were delivered ( $M = 15.75, SD = 2.05$ ).

### Discussion

The purpose of the current study was to examine the effects of the Second Step program in improving the social competence skills and reducing problem behaviors. There were two key findings revealed by the study. First, social competence as measured by teacher ratings of student behavior using the Aggression, Social Skills and Withdrawal scales of the BASC-2 yielded significant results from Time 1 to Time 3. Second, there was a significant reduction in the number of ODRs for the experimental group, while little change for the control group.

These results are consistent with previous research examining the effects of the Second Step program as a school-wide approach to addressing skills related to social competence and (Farrell, Meyer, & White, 2001; Neace & Munoz, 2012). Although the intervention period was only four months, the impact of the Second Step program was significant. This is not unusual for the RCT and longitudinal studies, these positive effects are important for schools that adopt a universal commitment to the schoolwide prevention practices (Brown et al, 2012; Cooke et al, 2007; Edwards et al, 2005; McMahan & Washburn, 2003). One of the practical implications of this study is many of the implementing teachers indicated that some of the students demonstrated basic foundation of the skills being taught through the Second Step program and it appeared their acquisition of the new skills was not difficult to incorporate into their repertoire. The consistent, universal implementation of the program seemed to be a positive compliment to the teachers' and their commitment to the process. From a broad perspective, this finding is similar to Low et al (2015) who found that the effects of the program were more significant for students who exhibited higher levels of problem behavior versus those who exhibited lower levels of problem behavior.

If many of the students had these skills in their repertoire, it is reasonable to hypothesize their display of maladaptive behaviors would also be commensurate with a reduced level of problem behaviors. This is consistent with the finding of ODRs earned by control students versus those in the experimental group and is suggestive of the potential long-term effects direct instruction of prosocial skills can have on children. Thus, the pattern of low behavioral incidents is unusual because children exhibit varying levels of skills and subsequently respond to intervention in different ways (Walker et al., 1996). The findings of from this study are relevant to IDEA legislation. Congress recognized the need for schools to use evidence based approaches to proactively address the behavioral needs of all children, but especially students with disabilities.

Although the results from the current study are promising, it is valuable to interpret these findings with the following limitations in mind. This study did not adopt a randomized controlled design and targeted one districts' efforts to implementing a sustainable program. With the inclusion of a matched comparison sample on specific demographic variables, there was some hope that there would have been some other effects found (i.e., gender, grade), which would add evidence to support the interval validity of the program. This does not diminish the importance of the findings, but reduces the opportunity to make comparisons at different levels of the study. Moreover, each school has a unique culture and climate, so the matching of schools and students does not guarantee the effects of the program will be similar (Taub, 2001; Scott & Martinek, 2006).

Another limitation is the school district already adopted a strong commitment to explicitly teaching social emotional learning to their students and the effects of the existing program may have acted in a complementary manner to the Second Step program. Thus, the independent effects of the program may have been difficult to measure and were potentially obscured given this scenario. It is not unusual to expect that initial low levels of problem behaviors would impact the perspective of teacher ratings of childrens' social competence skills. Yet, the overall commitment of schools to support the youths' social emotional learning to improve behavioral and academic outcomes should not overshadow the effects a program can have on the climate and culture of a school.

Despite the limitations associated with this study, there are several implications for school psychologists and school-based service delivery providers. The fidelity of implementation provides evidence that with training and support, teachers are in an excellent position to change the climate and culture of the classroom. In their role as consultants, school psychologists can be instrumental in supporting teachers with implementation on topics like student engagement and performance-based feedback to support better program implementation. Moreover, because school psychologists understand the important of fidelity and how to conduct non-evaluative checks on the integrity of implementation, there is less reliance school-based clinicians (e.g., school social workers, school counselors, school psychologists) to deliver the intervention. These finding are encouraging because, the dosage of Second Step lessons were maintained over time and sufficiently addressed the social-emotional competency skills of the students involved in the program and fostered a more collegial atmosphere among school staff and administration.

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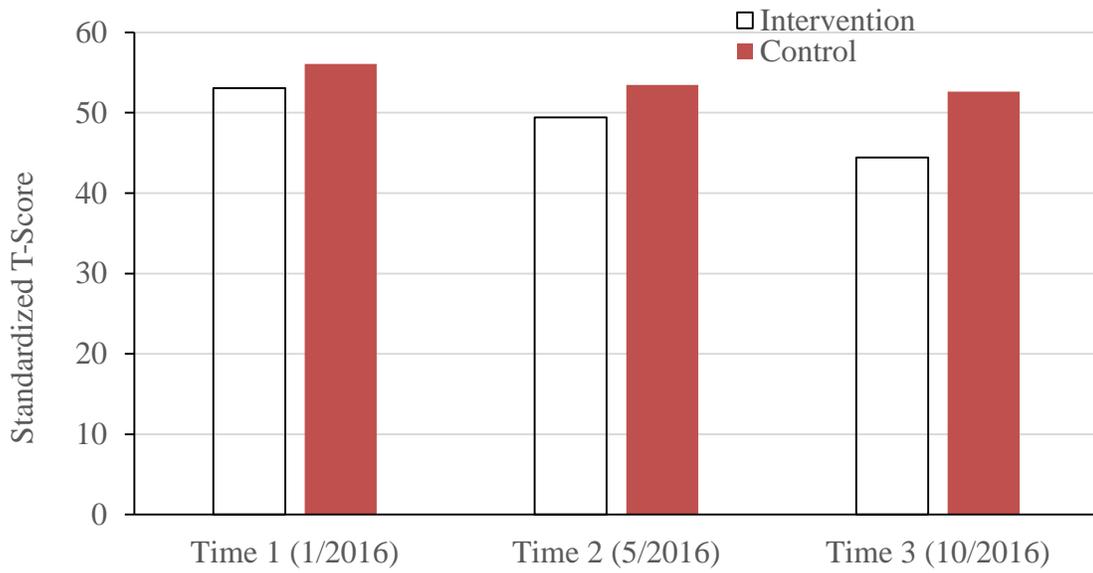
**Table 1: Demographic Characteristics of the Sample**

Variable	<i>n</i>	%	District %
<b>Ethnicity</b>			
African American	54	36.5	63.1
Asian	24	16.2	1.3
Hispanic/Latino	25	16.9	11.2
Multiethnic	24	16.2	4.2
White	21	14.2	20
<b>Educational Status</b>			
General Education	98	66.2	87.9
Special Education	50	33.8	12.1
<b>Gender</b>			
Male	70	47.3	
Female	78	52.7	
<b>Grade</b>			
Pre-Kindergarten	18	12.2	
Kindergarten	20	13.5	
Second	10	6.8	
Third	60	40.5	
Fourth	40	27	

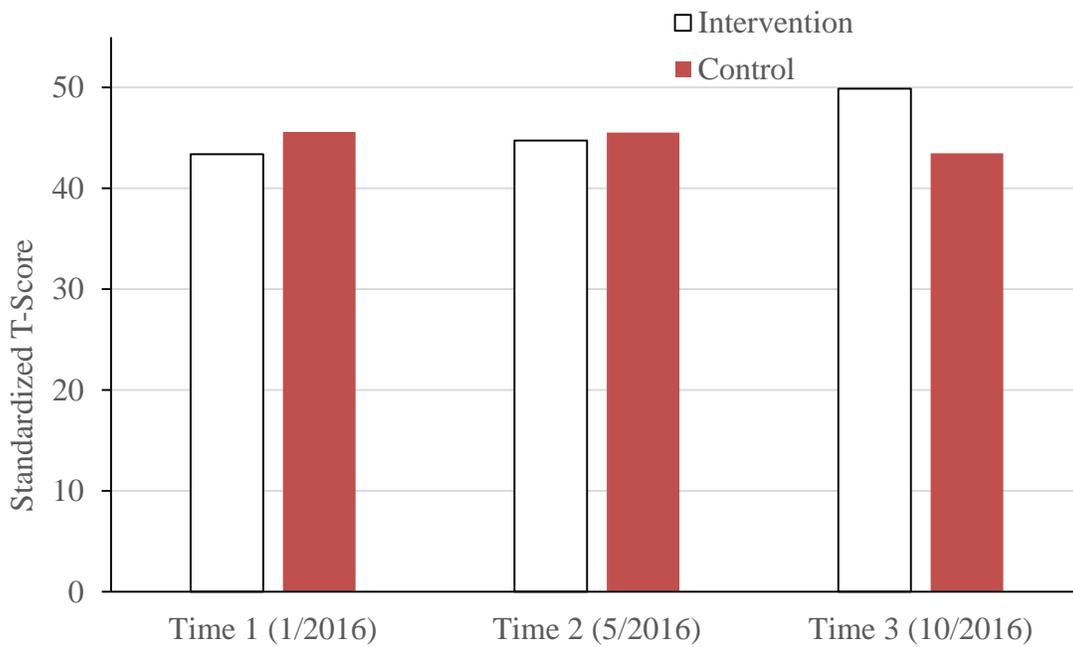
**Table 2: Dependent Measures by Group and by Time**

		Intervention Mean (SD)	Control Mean (SD)
Withdrawal	Time 1	53.08 (7.2)	56.08 (6.7)
	Time 2	49.43 (5.4)	53.45 (6.1)
	Time 3	44.45 (3.5)	52.61 (6.1)
Social Skills	Time 1	43.39 (5.7)	45.59 (7.9)
	Time 2	44.74 (5.9)	45.53 (9.1)
	Time 3	49.89 (5.4)	43.46 (9.2)
Aggression	Time 1	56.42 (6.2)	54.43 (6.2)
	Time 2	53.77 (5.4)	51.50 (5.4)
	Time 3	50.22 (4.9)	50.31 (4.3)
Office Discipline Referrals	Time 1	.03 (.16)	3.96 (1.8)
	Time 2	.11 (.53)	2.51 (1.6)
	Time 3	.00 (.00)	3.07 (1.9)

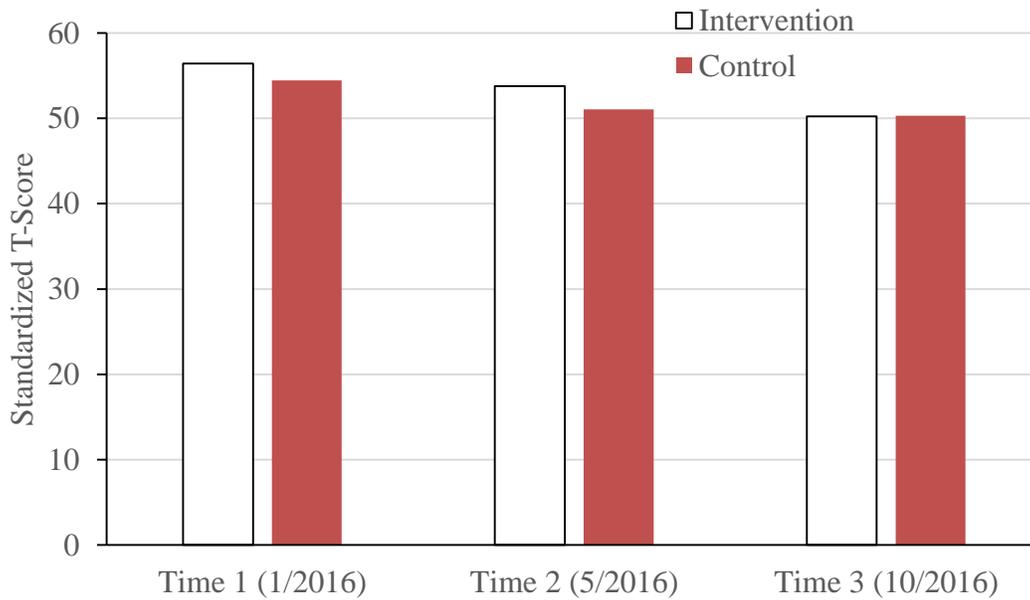
**Figure 1. Teacher Ratings on the Withdrawal Scale of the Behavior Assessment System for Children**



**Figure 2. Teacher Ratings on the Social Skills Scale of the Behavior Assessment System for Children**



**Figure 3. Teacher Ratings on the Aggression Scale of the Behavior Assessment System for Children**



**Figure 4. Number of Office Discipline Referrals Earned by Students**

