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Effects of a Universal Classroom Management Intervention on Middle School Students With or At Risk of Behavior Problems

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Abstract

Universal interventions implemented in schools have the potential to impact large numbers of students on a multitude of behavioral and academic outcomes. In the context of a large group randomized controlled trial, the current study examined whether teacher-perceived student need for behavior support plans at baseline moderated the effects of a middle school universal classroom management training program, CHAMPS, which stands for Conversation, Help, Activity, Movement, Participation, and Success, on student outcomes. We hypothesized that students in CHAMPS classrooms who were identified by teachers at baseline as needing behavior support plans would have greater end-of-year improvements on behavior and academic outcomes relative to comparable youth in non-CHAMPS classrooms. Results indicated baseline teacher-perceived student behavior support need moderated some intervention outcomes; in particular, youth at risk in CHAMPS classrooms demonstrated improvements in concentration problems ($b = -.19$) and communication arts outcomes ($b = .13$) compared with youth at risk in control group classrooms. Implications of these findings and future research are discussed.

Keywords

universal prevention, youth at risk, classroom management

Disruptive behavior problems among students in classrooms present a significant challenge for teachers and schools. In response, many schools have adopted and implemented universal prevention interventions to help reduce problem behaviors that disrupt student's educational attainment (McIntosh et al., 2018). Universal prevention methods are interventions that impact all students in a classroom or a school building. They are an efficient, low-cost attempt to reduce multiple risk factors and promote protective factors in the youth population (Greenberg & Abenavoli, 2017).

Universal interventions have been developed to make a broad impact on those who are exposed to it. The expectation is that approximately 85% of students will respond successfully to preventive universal strategies, whereas the other 15% of students will benefit from more targeted supports (Stormont et al., 2012; Sugai & Horner, 2006). What is less known is whether students at risk of behavior problems, who are identified as in need of more intensive interventions, also benefit from the universal interventions they receive as part of the larger student body.

Middle School Context

One area that many teachers report struggling with is implementing effective classroom behavior management strategies (Buell et al., 1999; Pavri, 2004). In fact, teachers indicated that they considered classroom behavior management to be the most challenging aspect of their job and one in which they received the least amount of training (Reinke et al., 2011). Furthermore, problematic behaviors in classrooms can disrupt learning and also take time away from instruction. Thus, teachers have also expressed concerns about the impact that problem behaviors have on the academic performance of their students (Lassen et al., 2006).

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Middle schools prove to have their own specific challenges that enhance the potential for increased problematic behaviors. Students in middle schools are faced with environmental changes, more independence from teachers, and increased peer influence (Rusby et al., 2011). Furthermore, students who express problem behaviors throughout middle school and later are at increased risk of more punitive consequences, including often being suspended or expelled, which decreases academic learning time and opportunity for classroom engagement (Tobin & Sugai, 1999).

Students who continue to experience problem behaviors or are at risk of developing problem behaviors are vulnerable to experiencing persistent long-term negative outcomes (Wagner & Newman, 2012). Of particular concern are the lasting effects of problem behaviors through high school where these behaviors are predictive of negative outcomes such as high school dropout (Darney et al., 2013; Sweeten, 2006) and poorer academic performance (McIntosh et al., 2008). The changing dynamics between elementary and secondary education settings also require more specific skill competence and acquisition to be successful in the classroom. Students in middle school must learn to self-regulate, communicate clearly, stay on task for longer periods of time, become critical thinkers, and be able to problem-solve. Furthermore, students become more aware of environmental impacts to their education and development; for instance, students who experience poverty or attend schools in lower socioeconomic areas may also experience poorer academic achievement and be more at risk of lower attendance (Morrissey et al., 2014).

The unique challenges that middle schools face in addressing the needs of their students creates an opportunity for professionals to increase prevention and intervention efforts and intervene to curb problem behaviors and the potential long-lasting impacts it can cause. Providing the opportunity for students to interact with effective classroom management practices implemented at the universal level lays the groundwork for learning and engagement, which in turn reduces problem behaviors (Conroy et al., 2008). Promoting and implementing universal-level interventions offers a higher probability of capturing youth who may be considered at risk or are "under the radar"; these students thus would not have the opportunity to benefit from targeted or individualized interventions (Wilson & Lipsey, 2007). Universal interventions can be beneficial for those under the radar because not all students with behavioral challenges will have a diagnosable disorder and receive special education services. In fact, it has been widely hypothesized that youth with emotional and behavioral disorders are under-identified (Walker et al., 2000), which could lead to students who need special education services not receiving those services. Without proper supports and services provided by the school, the sole responsibility of simultaneous effective classroom management and high-quality instruction shifts to the classroom teacher (Lassen et al., 2006).

While research has suggested that teachers can play a critical role in supporting the behavior of students, it has also indicated that many teachers are unaware of evidence-based practices that might ameliorate the disruptive problem behaviors they struggle to manage and, conversely, increase positive outcomes for students in their classrooms (Stormont et al., 2011). For example, Stormont et al. (2011) documented that only 44% of educators were confident that the interventions they used had the desired impact on their students. This lack of knowledge may be associated with a lack of sufficient experience, training, or support (Reinke et al., 2011). Thus, there is a need for interventions that focus on building teachers' knowledge and skills to promote the use of effective universal classroom management strategies.

Conversation, Help, Activity, Movement, Participation, and Success (CHAMPS)

CHAMPS is a universal classroom-wide intervention that can be implemented by middle school teachers. CHAMPS was developed for implementation in middle schools over a decade ago, with the intention to help teachers develop strategies to reduce off-task behavior, promote prosocial behavior, and increase academic opportunities to respond. CHAMPS consists of a modular series of training and coaching materials designed to help classroom teachers develop an effective classroom management plan that is proactive, positive, and instructional (Sprick et al., 1998). Emphasis is placed on promoting positive teacher–student interactions and in helping teachers structure their classrooms in ways that prompt responsible student behavior. The program prepares teachers to explicitly teach students how to behave responsibly, to give attention and energy toward acknowledging student responsible behavior, and to being consistent, calm, and brief when correcting misbehavior. Teachers trained in CHAMPS receive ongoing coaching to help support the implementation of newly learned skills in the classroom. Coaches use evidence-based coaching strategies, including modeling and providing performance feedback.

CHAMPS is a fully developed and widely disseminated prevention program. Books, planning materials, and DVDs support the implementation of this program in precise and repeatable ways (Sprick, 2009). In a recent randomized controlled trial of the CHAMPS intervention, teachers who received training in and implemented the CHAMPS intervention were found to use more proactive behavioral classroom strategies than teachers in the control condition (Herman et al., under review). In addition, the effects found for the treatment teachers were maintained over time.

Students in the treatment classrooms also showed better academic and behavior outcomes (Herman et al., under review); specifically, they had significantly higher scores on a state standardized communication arts achievement measure and on a math problem-solving achievement test as well as significantly lower levels of disruptive behaviors at the end of the school year adjusting for baseline covariates.

Current Study

Universal interventions have the capacity to impact the broad spectrum of students in a classroom. Typically, studies that report the results of a universal intervention's main effects do so across all students. Fewer studies disaggregate students and report how these interventions may benefit students who have been identified as at risk. Yet, the realities are that youth at risk of problem behaviors are included in general education settings, where universal prevention interventions are implemented (Lane et al., 2014). Thus, to broaden our understanding of the impact that universal interventions can have, we must examine how they affect individual students who are at risk as well as classrooms as a whole.

The purpose of this study was to evaluate whether students identified by teachers as needing behavioral supports in classrooms of teachers who were randomly assigned to receive the CHAMPS intervention demonstrated improvements in disruptive behavior, concentration problems, emotional regulation, prosocial behaviors, and academic outcomes in comparison with students identified by teachers as needing behavioral supports in classrooms of teachers who did not receive the training. Specific research questions included the following:

Research Question 1: To what extent do students perceived by teachers to be in need of behavioral supports in classrooms of teachers receiving CHAMPS have more positive end-of-year behavioral outcomes than students perceived to be in need of behavioral supports in the control classrooms?

Research Question 2: To what extent do students perceived by teachers to be in need of behavioral supports in classrooms of teachers receiving CHAMPS have more positive end-of-year academic outcomes than students perceived to be in need of behavioral supports in the control classrooms?

We hypothesized that students identified as at risk (i.e., teachers reported that a student would benefit from an individualized behavioral support plan) in CHAMPS classrooms would demonstrate improved outcomes, including decreased disruptive behavior, improved prosocial behavior and emotional regulation, increased concentration, and improved academic outcomes.

Method

Participants

Participants were recruited as part of a randomized controlled trial of the CHAMPS behavior management intervention funded by the Institute of Education Sciences. The randomized controlled trial recruited participants from nine middle schools from an urban school district in the Midwest. Teachers and students were recruited from Grades 6 to 8 English language arts and mathematics classrooms. Teachers and caregivers of participating students provided written informed consent and students provided verbal and written assent prior to participating in the study.

A total of 102 teachers and 1,405 students consented to participate in the study. Teachers identified primarily as female (79.1%). Teachers' racial and ethnic identities included White (70.9%), Black (25.6%), Asian (2.3%), and Other (1.2%). The mean age of teacher participants was 37.8 ($SD =$ 8.8, range = 23–63 years) and the mean years of teaching was 10.4 (SD = 6.3, range = 1–23 years). Fifty-one teachers (50%) were randomly assigned to the intervention condition.

Students were identified, by teacher report, as either having a need for individualized behavioral support (i.e., students at risk) or no need. Approximately, 44% (n = 639) of the total student sample were students who were identified as having need for individualized behavioral support. Of those students, 32% were in Grade 6, 44% were in Grade 7, and 24% were in Grade 8. Fifty-nine percent of students were male and 41% female. Racial and ethnic categories for students who were identified as at risk included 87% Black, 11% White, 0.9% Latinx, 0.6% Asian, and 0.5% multiracial. Seventy-six percent received free/reduced-price lunch (FRL). Furthermore, of students who were receiving special education services at the time of the study (n = 138), 60% of these students were identified as at risk based on teacher report that the student would benefit from individualized behavioral supports. Disability category was not available in the data set. Of those students considered not at risk of behavior problems, 38% were in Grade 6, 34% were in Grade 7, and 28% were in Grade 8. Forty-two percent were male and 58% were female. Racial and ethnic categories for students who were not identified as in need of individualized behavioral support plans included 72% Black, 23% White, 0.1% American Indian, 3% Latinx, 0.1% Pacific Islander/Native Hawaiian, 1.4% Asian, and 0.9% multiracial. Sixty-five percent of students qualified for FRL.

Procedures

The university's institutional review board and the participating school district approved the study protocol. Teachers were recruited and students in their classrooms were eligible to participate. Only students with written parental consent and student assent for participation were included in

the study (75% of all eligible students). All pre-intervention assessments were completed at the start of the academic year in the month of October prior to teachers being randomized to condition. All post-intervention assessments were completed in the Spring term after all intervention activities were completed in April or May of the same academic year.

Intervention condition. Teachers randomly assigned to receive the CHAMPS training attended three full-day group training sessions in October and one additional session in late November/early December. All trainings were facilitated by a certified CHAMPS trainer supervised by the program developer. The CHAMPS trainer also provided ongoing coaching to support teacher implementation of newly learned skills following training sessions.

CHAMPS is a comprehensive curriculum for improving teacher classroom management and relationship skills. The acronym STOIC highlights the key principles for an organized and effective classroom: Structure for success, Teacher expectations, Observe systematically, Interact positively, and Correct calmly. The training focuses on building teacher competence in each of these five domains. Teachers receive training across seven modules: (a) developing a vision, (b) organizing and structuring the classroom, (c) teaching expectations, (d) using proactive teaching, (e) supporting student motivation, (f) using data to make decisions, and (g) providing effective corrections. CHAMPS includes a host of well-developed and user-friendly materials to support teacher implementation of the practices, including companion books and DVD compendiums.

Adherence and fidelity of implementation of the CHAMPS workshops and teacher implementation skills were monitored over the course of the year, including dose/exposure to training and coaching, teacher ratings of workshop quality, and observation of classroom implementation. Regarding dose/exposure to the training, teachers in the intervention were all exposed to the training workshops; nearly all teachers attended all three workshops (attendance rate was 92%–100% for each workshop) and the few teachers who missed a workshop due to illness or any other reason met with the CHAMPS coach to review missed material. Teachers rated the workshops with high satisfaction and likelihood of recommending the training to others (mean ratings of 4.80 and 4.87 on a scale from 1 to 5, with high scores indicating greater satisfaction). In addition, teachers reported that they expected good results from receiving the training (4.60), agreed with the approach to behavior change (4.69), and were confident it would be helpful with current (4.33) and future (4.38) behavior problems in their classrooms.

CHAMPS coaching. In this study, the CHAMPS coach was a doctoral-level special educator. The coaching model includes providing teachers with explicit performance feedback following coach observations of the implementation of the CHAMPS intervention using a partnership framework (rather than coach as expert model; see Sprick et al., 2009). In between each workshop session, the CHAMPS coach conducted observations of teacher practices and student behaviors, followed by a meeting with each teacher individually for up to 1 hr on a weekly basis. A minimal dose of coaching for each teacher was set at a minimum of four visits with the coach. The first coaching visit focused on establishing rapport and setting goals. The second coaching visit focused on providing the teacher with explicit feedback based on the coach's classroom observations and developing a plan based on the teacher's own goals. Subsequent coaching visits were tailored to teacher needs and goals. During coaching sessions, the coach provided performance feedback, reviewed workshop content, modeled effective practices, supported goals setting and action planning, and processed barriers to implementation. The mean time spent with a teacher by the coach, outside of classroom observations, was 147 min (range = 48–358 min).

Control condition. The teachers who were randomly assigned to the control condition (business as usual) were instructed to continue teaching without alteration and to participate in any professional development opportunities that were provided during the study period. At the end of the school year, teachers were asked the number of hours of professional development they had received. Control teachers reported receiving on average 19 hr of professional development, whereas intervention teachers reported on average receiving 28 hr of professional development. Due to the wait-list design, control condition teachers were offered the CHAMPS intervention after all of the follow-up data were collected and the study was concluded.

Measures

Student demographics. The participating school district provided student-level data on race, sex, FRL, and special education status. Race was coded as Black, White, or Other. Student sex was coded as 1 for male and 0 for female. FRL was coded as 1 if they received FRL and 0 if not. Finally, with regard to special education services, students were coded as 1 for receiving services and 0 if they were not receiving services.

Teacher implementation fidelity to CHAMPS. Independent observers conducted direct observations of teacher implementation fidelity using the STOIC Rating Form (Sprick, 2013) three times across the school year, including immediately after the CHAMPS training in October, after the additional CHAMPS training session in December, and at the end of the school year. Data were collected for both

intervention and control classrooms. STOIC provides global ratings of each of the five key domains of CHAMPS practices: Structure for success, Teacher expectations, Observe systematically, Interact positively, and Correct calmly. Independent observers rated each of these five domains on a 0 (*no evidence*) to 4 (*full evidence*) rating scale, and we computed a summary score of these ratings as a measure of adherence. The intraclass correlation for STOIC summary scores for this sample ranged between .92 and .97 at each measurement time point.

We only collected post-intervention STOIC ratings across all cohorts, so we used the baseline Classroom Assessment Scoring System–Secondary (CLASS-S; Pianta et al., 2008) Climate subscale as a covariate to equate classrooms on baseline climate. The CLASS Climate subscale has been shown to be highly reliable and to predict student achievement and social outcomes in a number of studies of studies (Allen et al., 2013). The interclass correlation for the Climate subscale across all time periods was .751.

Behavioral outcome variables. The *Teacher Observation of Classroom Adaptation–Checklist* (TOCA-C; Koth et al., 2009) was completed by teachers and used as the primary behavioral outcome measure. The TOCA-C is a measure of child behavior and is completed on each student. When completing the TOCA-C, teachers were asked to reflect on the student's behaviors in the last 3 weeks. Teachers rate student behaviors on a scale of 1 (*never*) to 6 (*almost always*) on four major subscales (disruptive behaviors, concentration problems, emotional dysregulation, and prosocial behavior). Internal consistency for the TOCA-C for this sample was .95 to .97 for the concentration problems subscale, .88 to .94 for the disruptive behavior subscale, .85 to .89 for the prosocial subscale, and .87 to .91 for the emotion dysregulation subscale.

Academic outcome variables. Two district-level assessments were used as academic outcome variables. The Missouri Assessment Program (MAP) is a standardized, statewide assessment administered to all students across Grades 3 to 8. This assessment was designed to measure achievement toward statewide standards. Students received scores in communication arts and mathematics. Data included in the current study were from the end-of-year Mathematics and Communication Arts subtests of the MAP. Since 2014, the MAP assessments have been online and administered by the district's testing vendor, CTB-McGraw-Hill. Scale scores produced for each student describes achievement on a continuum that spans Grades 3 to 8. MAP scores of adjacent grades can be compared within a content area. The content for the MAP assessments were developed using grade-level blueprints that map onto the Missouri Learning Standards. MAP scaled scores had acceptable Cronbach's alpha

coefficients. Specifically, reliability of the communication arts test was .87 for Grade 6, .90 for Grade 7, and .91 for Grade 8, and the mathematics test produced reliability coefficients of .88 for the Grade 6, .90 for the Grade 7, and .87 for the Grade 8 versions of the test (Missouri Department of Elementary and Secondary Education, 2015).

In addition, we administered subtests of the 10th edition of the *Stanford Achievement Test* (SAT-10; Harcourt, 2004) pre-intervention, post-intervention, and in the spring of the following year. The Stanford 10 is a widely used group-administered standardized measure of academic achievement developed around national and state curriculum standards as well as those trends promoted by national professional educational groups (Harcourt, 2004). It is designed to estimate academic achievement in reading, math, language arts, and science. Extensive research has documented the reliability and construct validity of the SAT-10 (Harcourt, 2004). Subtest coefficient alphas all exceeded .80. We used two subtests, the Comprehension subtest for students in reading classes and the Problem-Solving subtest for students in math classes. Assessment occurred post-intervention in April of the same school year.

Moderator variable. Students were designated as at risk of behavioral problems if their teachers answered the question "Do you feel this student would benefit from individualized behavioral support in the classroom?" in the affirmative. Although a teacher perceived and indicated that additional supports would be beneficial, no behavior support plans were developed as a result. Thus, this variable was used simply as a teacher-perceived indicator of risk of behavior problems. This variable was scored as a "1" if teachers indicated *yes*, and "0" if teachers indicated *no*. Being at risk of behavior problems was positively correlated with students receiving in-school suspensions ($r = .28, p < .001$) and out of school suspension ($r = .30, p < .001$) during the same school year, indicating that teacher perception of behavioral risk at the start of the year was associated with exclusionary punishment during the school year. This variable was also correlated with baseline levels of observed disruptive behavior of the students gathered by independent observers, ($r = .15, p < .001$), indicating that students who were identified at risk had higher rates of observed disruptive classroom behaviors.

Design

This study utilized a block cluster random assignment design in which teachers were either randomly assigned to receive the CHAMPS intervention or assigned to a wait-list (business as usual) control condition. Randomization occurred within school with the limitation that each group (intervention or control condition) not outnumber the other

by more than 1. Teachers were recruited for the study across three cohorts.

Data Analysis

Missing data. A total of 102 teachers and 1,450 students across nine schools participated in the study that represent our original sample. Of the 102 teachers, only one was not able to complete the study due to moving out of the district during the school year. Preliminary review of data for missingness revealed that most missing data were from outcome measures. The missing rates for the pretests of four social and behavioral outcome measures was 0.5%, whereas the missing rates for the posttests of four social and behavioral outcome measures was 14.2% in the overall sample. Mobility (e.g., students moving out of the school district during the year) was the most predominant reason for missing student data. The differential missing rates between the treatment and control groups were 0.7% for the pretest and 2.7% for the posttest. Students with missing posttests were excluded from the final analytic sample. The final analysis included nine schools, 101 teachers, and 1,244 students. Data from all teachers and students were included in the analyses of social and behavioral outcomes. Data from 47 math teachers (587 students for Problem-Solving and 594 students for MAP Math) and 54 reading teachers (632 students for Reading Comprehension and 646 students for MAP Communication) were included in the analyses of academic achievement outcomes. Multiple imputation, using a Markov Chain Monte Carlo (MCMC) method in SAS PROC MI was used to impute missing data on pretest and other covariates. The data were imputed five times.

Moderation analysis. Moderation analyses were conducted to examine whether the treatment effects on student outcomes differed by teacher ratings on student needs for individualized behavioral support in the classroom. For each of the five imputed data sets, three-level hierarchical linear models (HLM), in which students (Level 1) are nested within teachers (Level 2) and teachers are nested within schools (Level 3), were conducted using SAS PROC MIXED to examine the moderation effects on student behavior and academic outcomes. Each student's pretest and demographic information were included at Level 1, the treatment variable was at Level 2, and its coefficient was assumed constant across Level 3. We included the treatment condition to predict the coefficient of the moderator variable (being at risk of behavior problems). SAS PROC MIANALYZE was used to combine the results from the analyses of five data sets. The statistical model follows:

Level 1 (student):

$$Y_{ijk} = \alpha_{0jk} + \sum_{q=1}^{Q} \alpha_{qjk} X_{qijk} + e_{ijk}, \quad e_{ijk} \sim N(0, \sigma^2),$$

Level 2 (class):

$$\alpha_{0jk} = \beta_{00k} + \beta_{01k}(Condition)_{jk} + \mu_{jk}$$
$$\alpha_{qjk} = \beta_{q0k} + \beta_{q1k}(Condition)_{jk}, q = 1,...,Q. \quad , u_{jk} \sim N(0, \tau_2^2),$$

Level 3 (school):

$$\beta_{00k} = \gamma_{000} + \xi_k$$
$$\beta_{01k} = \gamma_{001} \qquad , \xi_k \sim N(0, \tau_3^2),$$
$$\beta_{q0k} = \gamma_{q00}, q = 1,...,Q.$$

where X_{qijk} represents student-level covariates, which include pretest, age at pretest, gender, race, FRL, special education status, grade level, cohort year in the study, and being at risk of behavior problems. $(Condition)_{jk}$ is a binary variable indicating treatment condition (Condition = 0 for control group and Condition = 1 for treatment group). The parameter, β_{q1k}, estimates the moderator effects of the qth covariate and was assumed as constant across schools ($\beta_{q1k} = \gamma_{q10}$).

Results

Teacher Implementation Adherence to CHAMPS

Repeated-measure analyses of covariance (ANCOVAs) of STOIC ratings from post-intervention in October and December, and at the end of the school year, adjusting for baseline climate scores, revealed a significant intervention effect on STOIC summary scores across three post-intervention observations adjusting for pretest scores, $F(1, 96) = 7.51$, $p = .007$, $\eta_p^2 = .074$. The CHAMPS teachers had consistently higher ratings of STOIC, and the average differences across three posttest observations represented a small effect ($d = .28$).

Moderation Analyses

See (Herman et al., under review) for the results of the overall main effects of the CHAMPS intervention. Moderating effects of students identified by their teachers as at risk of behavior problems have not been examined from the CHAMPS randomized controlled efficacy trial prior. Tables 1 and 2 provide the moderation effects of students identified by their teachers as at risk of behavior problems on behavioral and academic outcomes. Students at risk in the treatment group were found to have improvement on concentration problems in comparison with peers at risk in the control group ($b = -.19$, $p < .05$, $g = -0.07$), meaning that students identified as needing behavior supports by their teachers who received the intervention demonstrated a decrease in concentration problems in comparison with similar peers in control classrooms. No significant moderating effects were found for disruptive behavior, emotional

Table 1. Behavioral Outcome Variables for the CHAMPS Study.

Variable	Concentration problems			Prosocial behavior			Emotional regulation			Disruptive behavior		
	_b_	_SE_	_p_	_b_	_SE_	_p_	_b_	_SE_	_p_	_b_	_SE_	_p_
Intercept	1.51	0.64	.05	4.91**	0.38	<.01	2.37**	0.42	<.01	1.60**	0.39	<.01
Age	0.10	0.05	.05	−0.01	0.04	.69	−0.01	0.03	.82	0.01	0.03	.71
Female	−0.16**	0.03	<.01	0.08*	0.04	.03	0.00	0.06	.93	−0.03	0.04	.42
Lunch status	0.03	0.06	.54	−0.04	0.06	.55	0.00	0.03	.98	0.05	0.02	.06
Support Time 1	0.10	0.06	.11	−0.17**	0.05	<.01	0.10	0.06	.09	0.10*	0.04	.01
Black	0.23**	0.06	<.01	−0.10*	0.04	.01	0.09**	0.02	<.01	0.11**	0.04	<.01
Other race	−0.04	0.05	.45	0.19**	0.05	<.01	−0.13*	0.05	.01	−0.01	0.04	.70
Year 2	−0.03	0.10	.74	0.08	0.07	.29	0.01	0.08	.88	−0.01	0.07	.90
Year 3	0.13	0.08	.09	0.07	0.10	.48	0.01	0.09	.94	0.02	0.10	.86
Year 4	0.27*	0.08	.01	0.08	0.12	.53	0.06	0.09	.53	0.07	0.08	.40
Grade 7	−0.21	0.15	.14	0.07	0.10	.47	−0.10	0.07	.19	−0.05	0.07	.53
Grade 8	−0.13	0.16	.41	−0.04	0.14	.75	0.16	0.11	.13	0.08	0.08	.29
Pretest	0.72	0.03	<.01	0.71**	0.02	<.01	0.72**	0.02	<.01	0.75**	0.03	<.01
Intervention	0.09	0.14	.51	−0.03	0.11	.78	−0.16	0.15	.30	−0.11	0.09	.20
Intervention × Support	−0.19*	0.07	.01	0.08	0.09	.34	0.04	0.10	.64	0.02	0.05	.67

Note. Test used was the _Teacher Observation of Classroom Adaptation–Checklist_ (TOCA-C; Koth et al., 2009). CHAMPS = Conversation, Help, Activity, Movement, Participation, and Success.
*_p_ < .05. **_p_ < .01 or less.

Table 2. Academic Outcome Variables for the CHAMPS Study.

Variable	Reading comprehension[a]			Problem-solving[a]			Communication arts[b]			Mathematics[b]		
	_b_	_SE_	_p_	_b_	_SE_	_p_	_b_	_SE_	_p_	_b_	_SE_	_p_
Intercept	699.90**	28.67	<.01	642.04**	19.60	<.01	1.64*	0.73	.02	1.29	1.12	.24
Age	−4.16	2.73	.12	0.52	1.92	.78	−0.15*	0.07	.02	−0.10	0.09	.26
Female	2.28	1.96	.24	0.86	1.45	.55	0.08**	0.03	<.01	−0.01	0.03	.80
Lunch status	−4.35	2.44	.07	−4.14**	1.39	<.01	−0.08**	0.03	<.01	−0.08	0.04	.08
Support Time 1	−9.03*	3.91	.02	−7.27*	3.32	.02	−0.22**	0.04	.01	−0.23**	0.08	<.01
Black	−0.94	4.90	.84	−7.89	4.72	.09	0.04	0.09	.64	−0.16	0.10	.11
Other race	11.25*	4.64	.01	7.09*	3.37	.03	0.24**	0.09	<.01	0.07	0.04	.10
Year 2	−2.43*	0.99	.01	1.88	4.38	.66	0.06	0.05	.19	−0.01	0.08	.89
Year 3	−8.43**	1.24	.01	0.11	4.19	.97	−0.10	0.11	.35	−0.03	0.08	.68
Year 4	−6.91	3.92	.07	0.58	4.36	.89	−0.26**	0.07	<.01	−0.34**	0.09	<.01
Grade 7	15.21**	4.79	<.01	13.51**	4.56	<.01	0.25**	0.09	<.01	0.20	0.10	.05
Grade 8	42.96**	8.11	<.01	22.12**	7.42	<.01	0.44*	0.18	.01	0.53**	0.12	<.01
Pretest	25.35**	1.87	<.01	17.77**	2.05	<.01	0.71**	0.03	<.01	0.59**	0.04	<.01
Intervention	−3.06	7.16	.66	8.56	5.85	.14	−0.08	0.08	.30	0.14	0.17	.41
Intervention × Support	4.37	5.47	.42	−1.87	4.17	.65	0.13*	0.06	.03	0.02	0.09	.84

Note. CHAMPS = Conversation, Help, Activity, Movement, Participation, and Success.
[a]Subtest of the _Stanford Achievement Test–10th Edition_ (SAT-10; Harcourt, 2004). [b] Subtest of the Missouri Assessment Program (MAP).
*_p_ < .05. **_p_ < .01 or less.

dysregulation, or prosocial behavior. With regard to academic outcomes, students at risk in the intervention were found to have a significant increase in their scores on the Communication Arts subtest of the MAP assessment (b = .13, p < .05, g = 0.06) in comparison with peers at risk in the control group. Thus, students who were identified by their teachers as at risk of behavior problems and received

the intervention improved academically in comparison with similar peers in the control classrooms. No other significant moderating outcome findings in relation to academic outcomes were found. Figures 1 and 2 present the differential effect sizes and their 95% confidence intervals between students identified as at risk of behavior problems or not for concentration problems and communication arts academic
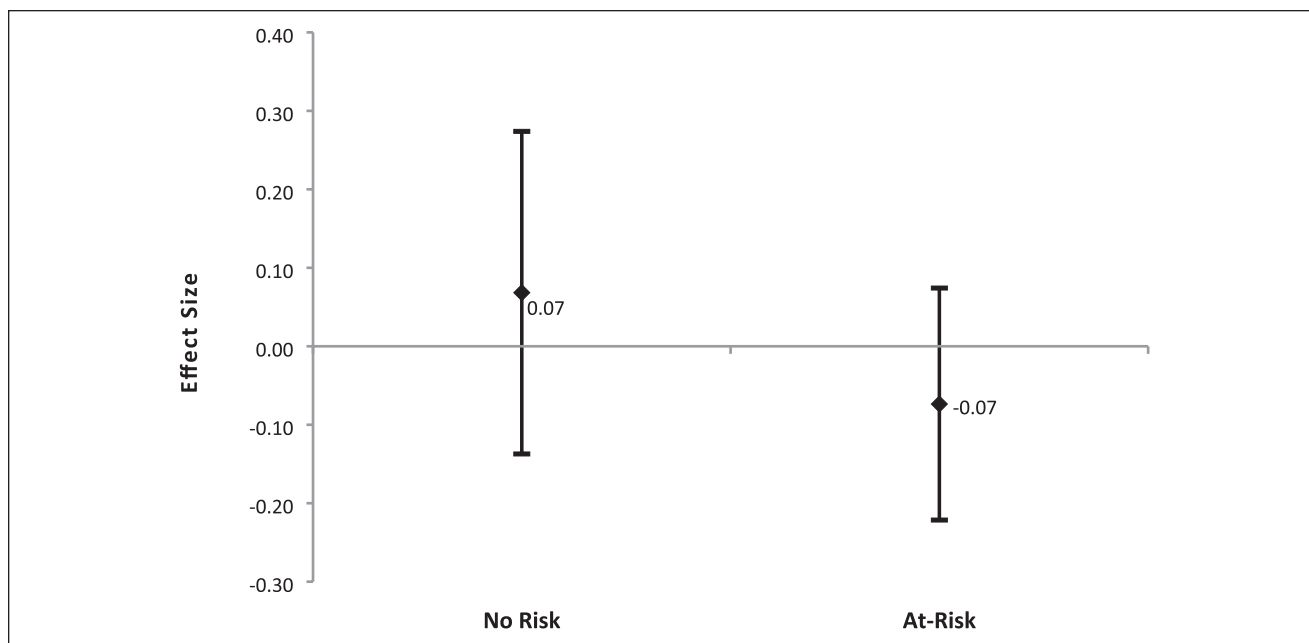
Figure 1. Differential effect sizes and 95% confidence intervals on concentration problems varying by the student risk of behavior problems.
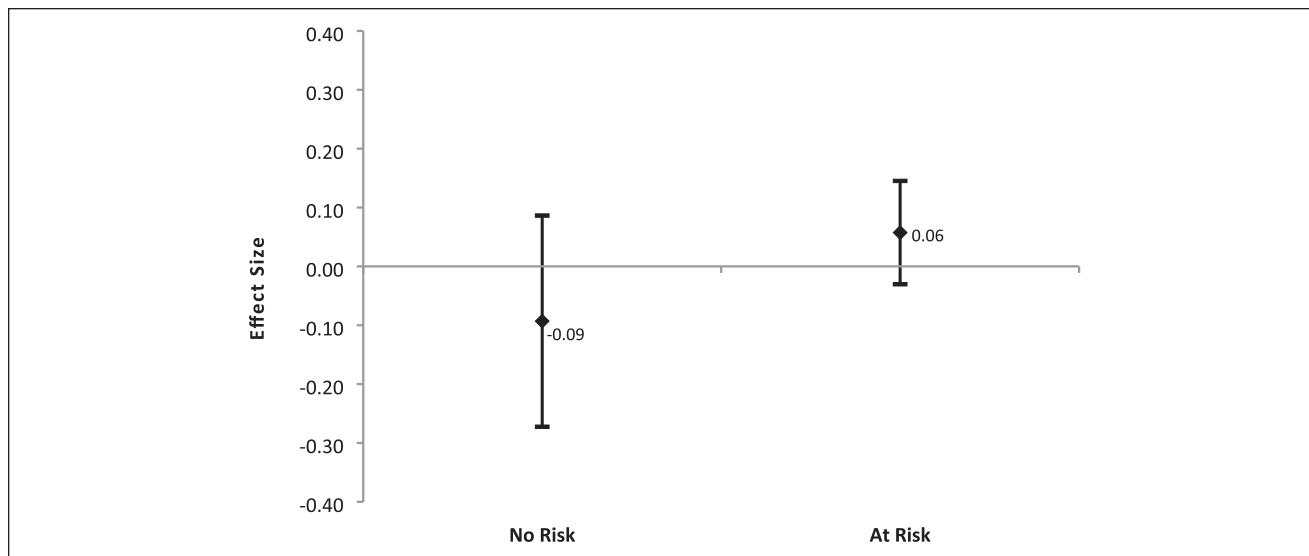

Figure 2. Differential effect sizes and 95% confidence intervals on communication arts academic performance varying by the student risk of behavior problems.

performance, respectively. The figures indicate that the intervention favored students identified as at risk by their teachers in reducing concentration problems and improving communication arts academic performance. Although the effect sizes for the moderator subgroups (at risk or not) were not significant, the differences on the effect sizes between the moderator subgroups were significant.

Discussion

Universal prevention-oriented interventions have the ability to not only affect students receiving the intervention in which the intervention supports classroom behavioral expectations and academic instruction, but also specifically those students who may be at risk of future problem behaviors or academic concerns (Lane et al., 2014; Wilson

& Lipsey, 2007). In this study, we hypothesized that students who were perceived and identified as at risk by their teachers for needing individualized behavioral supports would demonstrate improved behavioral and academic outcomes in response to the CHAMPS intervention. Results from the moderation analysis found a significant interaction between behavior risk and intervention status, indicating that students identified by their teachers as at risk of behavior problems had significant improvements on teacher-reported concentration problems and communication arts achievement scores compared with comparable peers in wait-listed classrooms. This is consistent with the concept that academic and behavioral problems are interconnected and not isolated concerns (McIntosh et al., 2008; Reinke et al., 2008). Thus, if a universal classroom management intervention can improve both academic and behavioral outcomes for youth with increased risk of behavior problems, it is worth exploring further implementation of CHAMPS and its preventive properties with regard to reducing the need for more resource-heavy interventions or programs.

The finding that the CHAMPS intervention had particular benefit on the concentration skills of students identified by teachers as being in need of behavioral supports is noteworthy. Main effect analyses reported a positive, although nonsignificant, trend on concentration problems for the whole sample (Herman et al., under review, Herman et al., 2018, 2019). The present findings suggest that changes in classrooms where the CHAMPS intervention was implemented affected student outcomes such that they largely contributed to the positive trends. Concentration problems assessed in the present study align with inattention and symptoms of attention-deficit/hyperactivity disorder (ADHD). Youth with inattention and ADHD symptoms are at high risk of negative social, emotional, and academic outcomes. Thus, the finding that a universal classroom management intervention helps reduce these problems for youth in need of individualized behavioral support suggests that classroom-wide interventions such as CHAMPS may be an efficient way to alter engagement in school. The small effect sizes indicate that it is likely that most of these youth would continue to need additional behavior support in the context of CHAMPS classrooms; however, improvements in concentration problems may help these students benefit more from subsequent behavior and academic support interventions and serve as a catalyst for further social and emotional development.

The significant moderation effects on communication arts is also consistent with the concentration benefits experienced by students identified as at risk of behavior problems by teachers in this study. Inattention may interfere with academic success. Thus, selective improvements in attention skills—due to changes in classroom management and instruction due to CHAMPS—for students at risk likely made it easier for students to access academic

content during the academic year and in turn have higher communication arts scores than students at risk in comparison classrooms.

It is also noteworthy that the items on the Concentration Problems subscale (*concentrates, pays attention, works hard, stays on task, is easily distracted, completes assignments, learns up to ability*) are similar to the educational construct of student engagement. In the main effect analyses, intervention effects were partially mediated by direct observations of students' time-on-task (Herman et al., under review); that is, one reason CHAMPS benefited the communication arts skills of all students was because students in CHAMPS classrooms spent more time on task. Engagement and concentration skills are often measured by time-on-task and have been identified as skills for student success (Chafouleas et al., 2013). Student engagement has been researched and continues to be an important indicator of student academic and long-term success (see Brophy, 2010). In particular, there have been three common subcategories of student engagement that include behavioral, emotional, and cognitive engagement (Fredricks et al., 2004). Specifically, the concentration problems subtest of the TOCA is aligned with the principles of both behavioral and cognitive engagement. *Behavioral engagement* has been conceptualized as students' conduct while they attend school, such as involvement in learning and academic tasks (e.g., asking questions, attending to class discussions; Fredricks et al., 2004). *Cognitive engagement* has been referred to as the idea of a student's investment in learning (e.g., persistence with difficult tasks, using self-regulation strategies to guide learning; Finn & Zimmer, 2012). These two constructs are useful in conceptualizing the implications of our findings. The measures administered post-intervention give insights to the short-term outcomes of students at risk of behavior problems who received the intervention; the engagement literature provides additional evidence for long-term outcomes because student engagement with school is associated with positive academic and behavioral outcomes.

The effect sizes for findings in this study were modest; however, small effect sizes are common in universal prevention studies (Durlak et al., 2011; Flay et al., 2005). Because the entire population receives the intervention, small effects are expected, given the varying degrees of risk (i.e., many individuals would not develop behavior or academic problems even without the intervention); yet, very small effects on a population level can result in dramatic improvements in public health outcomes (National Research Council and Institute of Medicine, 2009). The relatively small effects found among a subsample within this universal prevention trial points to the manner in which universal prevention interventions reach youth who otherwise might need additional supports.

It is important to note that not all hypotheses were supported. Teacher perceptions of students at risk of behavior

problems at baseline did not moderate intervention effects on disruptive behaviors, prosocial behaviors, self-regulation skills, and either measure of math skills used in the study. The main effects reported on disruptive behaviors and problem-solving skills suggest that these are universal effects; that is, on average, all students, regardless of behavior risk, were more likely to experience improvements in these domains relevant to the comparison conditions. On the contrary, the null main effects on prosocial behaviors and self-regulation suggest that CHAMPS did not affect these particular student outcomes either as a universal or selective effect. It is likely that prosocial and self-regulation skill development requires explicit instruction not currently offered by the CHAMPS intervention; whereas disruptive behaviors can be reduced by providing teachers the CHAMPS skills focused on classroom management.

Study Strengths and Limitations

The study had several notable strengths. The findings were from a rigorous group-randomized trial with longitudinal data. Analyses were conducted with multiple covariates and accounted for clustering of students within classrooms. The large student sample across groups included a high percentage of underrepresented groups (nearly 70% Black and FRL). The study also had relatively high rates of assent and participation from students and relatively low levels of missing data. Finally, prior to the start of training, teachers thought it would be helpful and expected positive results from implementation of the intervention; although small effect sizes were detected, the clinically meaningful result of positive behavior change is a strength.

At the same time, this study is not without some limitations. First, while the sample includes underrepresented groups, it is important to acknowledge that it is unknown how the findings will generalize to students in different educational settings or sociodemographic characteristics due to the fact that this study had a high proportion of students receiving FRL. We acknowledge that there is a complex relation between schooling and experience of poverty. Our findings must be considered with this in mind. While attempting to address the impact that incidence, depth, duration, and timing of poverty has on student outcomes (Ferguson et al., 2007; Hopson & Lee, 2011), which is outside of the scope of this article, we do recognize that the experience of poverty has been found to be a risk factor for poorer academic and behavioral outcomes (Hopson & Lee, 2011). Other aspects of poverty (e.g., limited resources, quality of resources) may also contribute to students' experiencing poorer outcomes (Lacour & Tissington, 2011), yet with structural changes such as classroom-wide interventions like CHAMPS, risk may be reduced.

Second, the study relied on teacher report of student need for individualized behavior support rather than other indicators of risk, such as special education status. It is notable that this method resulted in a high rate of students deemed to be in need of support (44%). Teacher report of student need is a commonly used method of referral to behavior support teams, thus our method was in line with common school practices. Teachers are the most common source of students' social behavior and special education referrals (Zima et al., 2005), and have been shown to predict social behavioral problems (Koth et al., 2009; Reinke et al., 2008). In addition, because they interact with large numbers of youth during their careers, teachers provide a valuable normative perspective on youth behaviors. Moreover, the method we used to identify student risk is generalizable, as any school could ask the single-item question of teachers in their building; it is this population of students identified by teachers as being in need of behavior support that the findings reported here generalize to. Furthermore, Pas et al. (2011) reported that teacher use of office discipline referrals was a moderately valid indicator of student behavior problems, suggesting that teacher referral can be a reliable source for the identification of students who may experience problem behavior. That being said, future research may address this limitation with the use of a standardized measure as an additional gate for understanding student behavioral support needs in addition to teacher report.

Finally, multiple hypotheses were not confirmed, including intervention effects on outcomes on disruptive behaviors, prosocial behaviors, self-regulation, and math skills. Additional research using the CHAMPS intervention is needed, as positive outcomes have been found through its main effects on students. Furthermore, because the CHAMPS protocol is focused on changing teacher classroom behaviors, we may need additional explicit instructions on how to improve student outcomes such as self-regulation. Students at risk who benefited with demonstrating improvement in concentration problems and communication arts may continue to demonstrate improvement longitudinally. Thus, additional research looking at the impact of universal interventions on students at risk into the future may also be warranted. While behavioral and academic outcomes are associated with one another, additional academic and instructional supports could potentially bolster the effects of non-statistically significant outcomes.

Implications for Research and Practice

For youth in middle school, exposure to preventive practices is important as they move into an academic and social behavior context that can shape their future. Risk and opportunity compound as students begin to move away from adult influence in favor of peers. By middle school, the prevention clock is running out of time to deter

life-altering consequences, including drug and alcohol use, pregnancy, and school dropout (Eccles et al., 1993; Henry et al., 2012). Teacher time and student/teacher ratios are more restrictive and not as conducive to individualized interventions as youth transition to middle school. To this end, the findings from this study help direct research and practice in understanding how universal prevention interventions can affect all students, including those who may benefit from additional behavioral supports.

As previously mentioned, the student engagement literature reports that students who are engaged emotionally, behaviorally, and cognitively with school ultimately have shown better in-school and post-school outcomes than students who are not similarly engaged (Rumberger & Rotermund, 2012). One of the main concerns of low student engagement during middle school is what happens when these students enter high school, including the risk of school dropout (Eccles et al., 1993; Henry et al., 2012). Dropout has been long been thought of a long-term process rather than a short-term decision (Christenson et al., 2001). This process has been thought to start in middle school (Balfanz et al., 2007) and certain populations, including students with disabilities or students at risk of academic or behavioral problems, have been shown to be at increased risk of dropout (McFarland et al., 2016).

Successful dropout prevention practices are aligned with the literature on student engagement. Because CHAMPS is a universal classroom management intervention, it has the ability to affect a larger number of students than some dropout prevention interventions, which tend to target individual students. This study provides evidence to suggest that CHAMPS can impact those who may be at risk of behavioral problems and potentially help them stay engaged with the academic curriculum. Future research can help determine the long-term impact of CHAMPS. Future research is also needed to investigate the additional impact of embedding behavior support planning or additional supports within the framework of CHAMPS for students and teachers. Past research that investigated the additive value of including elements of behavior support planning within the context of a universal classroom management intervention found it to be impactful (Reinke et al., 2014).

Furthermore, this research has implications for providing support for teachers in a key area of need: classroom management. If teachers use an intervention and it has a positive and recognizable effect on student outcomes, this may contribute to increased self-efficacy for teachers. Research has found that more than half of educators surveyed did not have confidence in their interventions for supporting youth with behavior problems (Stormont et al., 2011). The lack of such empowerment can lead to increases in teacher stress and burnout. Teachers need to have access to interventions that are sensitive to the contextual demands and also need to have time and support for sustained use of such practices. Teachers may also benefit from the use of standardized behavioral assessments that can be interpreted and used to help identify evidence-based interventions for classroom behavioral support. The use of standardized measures may help reduce bias in behavioral reporting when the identification for student behavioral support needs are conducted. The findings from this research indicate that the investment in the CHAMPS intervention had positive effects for students identified by teachers as at risk of behavioral problems.

Conclusion

Current research has typically taken a reactionary approach to fixing a problem. Whether teachers come to researchers or researchers go to teachers, a problem is identified and interventions are put into place to "fix" the problem. Yet, through preventive approaches and increasing the use of evidence-based behavioral management practices such as CHAMPs, teachers can help youth at risk of behavior problems who are in need of support with less intensive strategies. This can allow those youth who truly need those more intensive individualized supports to rise to the top, allowing for limited resources to be allocated accordingly. The moderation analysis conducted to answer our hypothesis indicated that youth identified by teachers to be at risk benefited from the intervention in comparison with their peers in control conditions. Further investigation into the impact of preventive supports on students demonstrating greater risk in school is needed. Long-term impacts to *prevent* future educational concerns, such as problem behaviors and academic decline, while supporting positive long-lasting outcomes, should be an essential component in future research endeavors.

Declaration of Conflicting Interests

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