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Feasibility and Acceptability of Classroom-Based Interventions for Students With Emotional/Behavioral Challenges at the High School Level

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Abstract

Little is known about the feasibility and acceptability of interventions designed to address the needs of high school students with emotional and behavioral challenges and adopted by their teachers. In this study, 336 general and special education teachers rated classwide interventions (e.g., expectations, routines, positive student–teacher interactions [PSTI]) and individual student interventions (e.g., study skills, organizational skills) in terms of priority, feasibility, and acceptability before implementation. Teachers who implemented the interventions rated their acceptability post-implementation. Results indicated that acceptability ratings varied across interventions, and it appeared that teachers rated interventions that required the least amount of time to implement (e.g., PSTI) most acceptable and those that required the most time for implementation (e.g., study skills) least acceptable. Lack of time, perceived lack of effectiveness, and poor environmental fit were often cited as reasons for lack of feasibility. Regression analyses revealed that teacher characteristics (e.g., years of experience) and type of intervention (e.g., classwide vs. individualized) contributed to teacher ratings of intervention acceptability. Implications for future research and practice are discussed.

Keywords

classroom-based interventions, high school, emotional and behavioral problems

Adolescents with emotional and behavioral challenges demonstrate poor performance during and after leaving school as evidenced by some of the poorest educational, behavioral, and social outcomes compared with other disability groups (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). Reading and math performance decline over the school years, while the number of suspensions and expulsions steadily increase (Nelson, Benner, Lane, & Smith, 2004; Wagner et al., 2005). As adults, they struggle with poor family relationships, experience difficulty finding and maintaining employment, and have high involvement in criminal activity and substance abuse (Greenbaum et al., 1996; Quinn, Rutherford, Leone, Osher, & Poirier, 2005).

To address the needs of students who present challenging behavior, federal law mandates educators use evidence-based interventions (Individuals With Disabilities Education Act [IDEA], 2004; No Child Left Behind Act [NCLB], 2002). Limited school-based research has been conducted with adolescents with emotional and behavioral challenges; however, interventions with emerging evidence are available. Strategies such as organizational skills training (Evans, Schultz, & DeMars, 2014) and study skills (see Vannest, Harrison, Temple-Harvey, Ramsey, & Parker, 2011) have demonstrated positive academic and social outcomes. Instructional strategies such as increasing student opportunities to respond (OTR), establishing expectations and routines, and providing specific positive feedback have also been found to show both academic and social behavior improvements (Sutherland, Wehby, & Copeland, 2000; Swinson & Knight, 2007; Trussell, Lewis, & Stichter, 2008).

In addition to identifying evidence-based approaches for students with emotional and behavioral challenges, it is also important to evaluate intervention acceptability (i.e., social validity). Kazdin (1980) suggested that consumers are more likely to adopt an intervention if they perceive it as fair,

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reasonable, and non-intrusive. Specific characteristics that influence adoption by school personnel have been proposed (Fixsen, Blase, Naoom, & Wallace, 2009). These include the time required to implement the intervention (Witt, Martens, & Elliott, 1984), cost of interventions (Von Brock & Elliott, 1987), teacher understanding of the intervention (Witt, Noell, LaFleur, & Mortenson, 1997), type of intervention (i.e., positive vs. reductive; Elliott, Witt, Galvin, & Paterson, 1984), severity of the student's problem behavior (Frentz & Kelley, 1986; Witt et al., 1984), perceived effectiveness of intervention (Reimers & Wacker, 1988), negative side effects (Kazdin, 1981), and environmental fit (Reimers, Wacker, & Koeppl, 1987).

Social acceptability has been defined as a uni-dimensional construct (i.e., Kazdin, 1980; Lane et al., 2009; Reimers, Wacker, & Cooper, 1991) as well as a multi-dimensional construct (Kelley, Heffer, Gresham, & Elliott, 1989; Witt & Martens, 1983). Most recently, Harrison, State, Evans, and Schamberg (2016) identified three domains of the construct of social acceptability per teacher perception: (a) suitability (favorable qualities of intervention), (b) perceived benefit (effectiveness of the intervention), and (c) convenience (lack of cost and resources, and discomfort experienced by the student).

To date, social acceptability has been examined in an indirect manner primarily with elementary school teachers. For example, Martens, Witt, Elliott, and Darveaux (1985) used written descriptions or a 3-min videotape of a child engaging in inappropriate behaviors paired with descriptions of recommended interventions and asked special and general education teachers to rate different aspects of intervention acceptability. Results indicated that problem severity significantly influenced teachers' evaluations of intervention acceptability. More recently, Briesch, Briesch, and Chafouleas (2015) surveyed 1,005 elementary school teachers on their perceived usability of five evidence-based classroom management strategies (i.e., positive praised, planned ignoring, self-management response-cost, response cost with home-school notes, and group contingencies). Teachers were presented with hypothetical vignettes and asked to rate the perceived usability of each classroom management strategy. Results indicated that positive praise and planned ignoring were rated as significantly more feasible compared with other strategies, suggesting teachers rated the least time-consuming interventions as most acceptable. These and most other studies have asked consumers (i.e., parents, psychology undergraduate students, and pre-service and student teachers) to rate the acceptability of the proposed interventions after reading or listening to hypothetical vignettes describing the student problem and proposed interventions (Briesch et al., 2015; Martens et al., 1985). This has improved our understanding of intervention acceptability; however, the major limitation of this approach is that the extent to which inferences about real-life situations can be made is unclear. Research in which teachers directly rate interventions for students they actually teach prior to and after implementation is greatly needed.

A second limitation of the research base is that it has been conducted primarily with elementary teachers. Limited information exists on secondary teachers' ratings of intervention acceptability. Differences between the needs of adolescents and elementary aged children as well as the structure of high schools compared with elementary schools are significant. Thus, research with elementary teachers clearly cannot be generalized to teachers of adolescents.

A third limitation is that all the previous research has queried teachers about intervention selection and asked them to rate social acceptability of interventions prior to implementation. No studies to date have evaluated teacher ratings of acceptability throughout the process of intervention decision-making, from pre- to post-implementation. The decision a teacher makes about adoption and maintenance of a recommended intervention can occur prior to, during, and after intervention implementation. If teachers find the intervention acceptable prior to implementation, but not after training or implementation, then the intervention is not likely to be sustained. Therefore, it is critical to understand (a) what interventions are recommended for adolescents with emotional and behavioral challenges and which of these interventions teachers judge as feasible and acceptable prior to implementation, (b) what barriers teachers perceive prior to implementation, (c) what interventions teachers are likely to implement after training, and (d) teachers' perceptions of feasibility and acceptability of interventions after implementation.

In the current study, we examined high school teachers' perceptions of a set of common interventions for adolescents with emotional and behavioral challenges prior to, during, and after implementation to determine their ratings of acceptability and feasibility. We also ascertained barriers to implementation that teachers identified when they rated interventions as not acceptable or not feasible. Finally, when interventions were rated as both feasible and acceptable, we evaluated whether teachers implemented the interventions and their acceptability ratings post-implementation. The following research questions were addressed in this study:

Research Question 1: Which interventions did teacher rate as most feasible and acceptable and why prior to, during, and following intervention?
Research Question 2: What barriers did teachers report relative to implementation?
Research Question 3: What were the relative contributions of teacher characteristics and intervention ratings of acceptability and feasibility after implementation?

Method

Participants and Setting

The participants in this study were teachers who were part of a larger study conducted by the Center for Adolescent Research in Schools (CARS; Kern, Evans, & Lewis, 2011). CARS was a national center funded by the Institute of Education Sciences to develop and evaluate a practical and comprehensive intervention package with high school students with emotional and behavioral problems (see Kern et al., 2015, for a comprehensive description of CARS). CARS researchers used a five-phase iterative process implemented across 3 pilot years to first develop the intervention package and then test it during an efficacy trial (see Kern et al., 2015, for a full description of the process). During Phase 1, *Initial Intervention Development*, a core research team conducted comprehensive literature reviews to identify interventions with the most evidence for high school students with emotional and behavioral challenges. Then, we implemented the interventions in six high schools and collected feedback on intervention feasibility and acceptability from high school professionals. In addition, "Community Development Teams" consisting of local stakeholders (e.g., teachers, mental health workers, school psychologists, parents, administrators) provided further intervention feedback in terms of relevance and barriers to implementation. During Phase 2, *Preparation for Implementation*, we further piloted the selected interventions with 35 students and school staff in five high schools and collected feedback on acceptability and perceived effectiveness. In Phase 3, *Implementation, Feedback, and Revision*, we further evaluated and refined the interventions. Phase 4, *Data-Based Decision/Prescribing Refinement*, focused on refining the assessment process to match interventions to specific student needs, as we acknowledged from previous implementations that not all students will need all the interventions comprising the package we developed. In Phase 5, *Further Refinement With Divergent Sample*, we tested the interventions in eight schools across five states (Missouri, Ohio, Pennsylvania, Kansas, and South Carolina). We made final revisions to our intervention package and problem-solved any identified barriers to implementation. The finalized intervention package consisted of classwide and individualized interventions that we evaluated via a 2-year randomized control trial (RCT). Data for the current study were collected throughout the RCT.

Fifty-four high schools across five states were randomly assigned to the intervention ($n = 28$ schools) or control condition ($n = 26$ schools). Among the intervention schools, six were classified as urban and 10 as suburban, with the remaining 12 rural. The total number of students attending each high school ranged from 482 to 3,141 ($M = 1{,}349$, $SD = 672$). A mean of 31.66% ($SD = 28.64\%$) of the total school population was minority (range = 1.56%–93.42% per school) and a mean of 38.54% ($SD = 19.51\%$) was low socioeconomic status (SES; range = 7%–75% per school). Three hundred thirty-six teachers who took part in a classroom assessment (see description in procedures below) were included in the present study (see Table 1).

Table 1. Teacher Demographics.

Variable	$N = 336$	%
Race		
Caucasian	295	87.80
African American	25	7.44
Asian	1	0.30
Hispanic/Latino	3	0.89
Not reported	12	3.57
Gender		
Female	200	59.52
Male	122	36.30
Not reported	14	4.17
Highest degree		
Bachelors	119	35.42
Masters	202	60.12
Doctorate	6	1.79
Not reported	9	2.68
Subject taught		
English	89	26.49
Math	71	21.13
History	55	16.37
Science	64	19.05
Multiple	31	9.23
Other	10	2.98
Not reported	9	2.68
Type of class		
General education	240	71.43
Special education	65	19.35
Not reported	31	9.23
Years in current position		
0–5 years	164	48.80
6–10 years	71	21.13
11–15 years	43	12.79
16–20 years	22	6.54
21+ years	23	6.85
Not reported	13	3.89

Measures

Classroom assessment. Students received classwide and individualized interventions designed to address classroom concerns and unique student needs based on a thorough classroom assessment process. The classroom assessment consisted of teacher and student interviews followed by a classwide observation and one to three observations of target students. The interviews queried about specific difficulties the target student encountered in the classroom and accommodations and adaptations provided by the teacher. For the classwide observation,

CARS "facilitators" who were doctoral students in special education or school psychology with training in school-based consultation observed for a full class period using a structured classroom observation form. They recorded interval and frequency data on student behaviors for all students in the classroom (i.e., engagement, off-task behavior) and teacher behavior (e.g., use of OTR strategies, positive and negative feedback, responses to problem behavior). Target student observations were conducted using the Multiple Option Observation System for Experimental Studies (MOOSES; Tapp, Wehby, & Ellis, 1995) via handheld devices. Prior to observing, facilitators received training on using MOOSES until they reached minimum 80% agreement on all codes observed. Facilitators collected interval and frequency data on teacher behavior directed to the target student (e.g., positive feedback) and target student behavior (e.g., on-task, active engagement, disruptions) for one to three observations lasting 15 min each. We collected three observations for most students. On occasion, however, this was not possible (e.g., student absent, suspended), feasible (e.g., staffing prohibited additional observations), or necessary (e.g., data were clear and recommended specific interventions). Based on the data collected during the interviews and observations, facilitators followed established data decision rules to identify one or more classwide interventions or one or more individual student interventions. For example, if the classwide observation revealed low engagement across many students due to low frequency of OTR strategies, then project facilitators recommended increased OTR to all students. If classwide data indicated high engagement across the class, but target student observations indicated low engagement of CARS target student, then the project facilitator would recommend increasing the OTRs for the target participant. Complete information on how interventions were recommended is described in the "Procedures" section.

Social acceptability. To evaluate feasibility and acceptability, teachers completed the *Intervention Evaluation Form*. This form listed each indicated intervention and requested a rating of feasibility and acceptability (with yes or no response options) for each intervention. The form then asked teachers to rank the interventions in terms of priority for implementation. When an intervention was rated as not feasible or not acceptable, the teacher was asked to select one of the following reasons: (a) too much time to implement, (b) too many resources required to implement, or (c) other. When teachers coded other, they were asked to write the specific reason. Similarly, when teachers specified that an intervention was not acceptable, they were asked to indicate whether it was not acceptable to the student or to the teacher.

To evaluate feasibility and acceptability post-implementation, teachers completed the *School Intervention Rating Form* (SIRF), a 21-item intervention rating scale. The SIRF was adapted (minor changes) from the *Treatment Acceptability Rating Form–Revised* (TARF-R; Reimers et al., 1991) by Kern and Gresham (2002–2007) so that the wording reflected school-based interventions, but item consistency remained unchanged. Respondents scored items on a 7-point Likert-type scale accompanied by descriptive anchors for the most favorable, middlemost, and least favorable ratings (e.g., liked a lot, liked some, did not like). The TARF-R is an adapted version of the *Treatment Evaluation Inventory* (TEI; Kazdin, 1980). Each has been used in prior research with acceptable reliability ranging from .35 to .92 (see Carter, 2007, for a review). A recent study examined the construct and predictive validity of the SIRF and identified three constructs with acceptable internal consistency: suitability ($\alpha = .83$), perceived benefit ($\alpha = .82$), and convenience ($\alpha = .68$; Harrison et al., 2016). We used 20 questions with seven possible indicators for our analyses that provided a total score ranging from 0 to 140. One question was removed from analyses due to 51 missing responses.

Procedures

Assessment process. Check & Connect (Anderson, Christenson, Sinclair, & Lehr, 2004) is a mentoring program that was implemented with all participants due to known effectiveness for reducing the risk of dropout (see Sinclair, Christenson, & Thurlow, 2005), school professionals indicating during pilot years that students lack connectedness with school, and ease and desire for implementation expressed during the pilot years of the study. Each week, mentors contacted the student's teachers, reviewed records, and collected data on indicators of behavioral and academic risk (i.e., absences, suspensions, grades, missing assignments, and office discipline referrals). Mentors then met with their assigned students to review the data and problem-solve with the student. When Check & Connect data indicated that a student experienced a pre-established risk level indicating need for additional supports in a core-academic class (e.g., student completed less than 90% of assignments in a specific class, student had 4 or more behavior referrals in a month, 5 or more tardies in a month), a project facilitator contacted the classroom teacher to assess his or her willingness to implement additional classroom supports for the student. After securing teacher permission, project facilitators conducted the classroom assessment (described above).

Interventions. After conducting the classroom assessment, decision rules (described below) were used to identify one to three classwide or one to four individual student interventions. All seven interventions were included in our intervention package as a result of the five-phase iterative process described above. Criteria (described below) were established a priori for determining that an intervention was needed using a scoring rubric based on interviews and observations.

Classwide interventions. Three classwide interventions included establishing expectations and routines, increasing OTR, and increasing positive student–teacher interactions (PSTI). Expectations and routines were recommended when data indicated low classroom structure and predictability, when students were observed demonstrating disrespectful or irresponsible behaviors (e.g., cursing) or not following directions, and when teachers did not use positive and corrective feedback to address rule violation. The intervention was also recommended if class routines and clear procedures for transitions and classroom-based activities were not observed. Providing OTR (e.g., response cards, guided notes, computer-assisted instruction, or classwide peer tutoring) was recommended when observations showed that classroom teacher was not routinely using an evidence-based OTR strategy. Increasing PSTI was recommended when more negative than positive interactions were observed. The intervention goal here was to increase the positive interactions with all students in class or the target student until a ratio of at least 4:1 positive to negative interactions was achieved.

Individual student interventions. Four possible individual student interventions accommodations, de-escalation, organizational skills, and study skills were implemented based on the assessment process. Accommodations were recommended when data demonstrated that contextual features were in place (e.g., expectations, routines, positive teacher–student interactions), but students were struggling academically (e.g., poor grades). An accommodation guide assisted teachers through a process of selecting accommodations matched to the student's need. First, teachers identified each student's specific area of difficulty from a list of potential types of problems (e.g., academic—reading, writing, math; or attention/behavioral—following directions, easily distracted, sustaining attention/effort, attention to detail, planning and time management, and test anxiety), consulted student work products and the Individualized Educational Plan (IEP), and selected accommodations based on the student's identified need (e.g., if the student experienced difficulty with reading comprehension, the teacher could select reading material aloud or using highlighted textbook). Second, they ascertained student input and preference for potential accommodations. Third, the guide directed teachers to identify accommodations based on the information gathered, implement the accommodation, and evaluate its effectiveness after implementation. Effectively responding to problem behaviors by de-escalating student behavior was recommended when observations showed evidence of a teacher responding to student behavior by arguing, not maintaining personal space, or using sarcastic language. Teachers were trained to identify triggers and intervene early in the behavior chain, set up the environment to reduce triggers, teach students skills to handle reactions elicited by triggers, and create new behavior chains and reinforce students for their use. When students completed less than 90% of assignments, instruction in organizational skills was recommended. To improve organizational skills, teachers taught students to use daily planners and missing assignment tracking sheets, as well as organizational checklists to manage their lockers and book bags. Finally, when students' class grade fell below a C over the previous 6 weeks and/or the student or teacher reported lack of study skills or test anxiety, instruction in study skills (e.g., flashcards, test taking strategies) was recommended.

Pre-implementation. After the classroom assessment was completed, a facilitator met with the teacher to present a list of recommended interventions. The facilitator described the purpose, rationale, and steps for implementation. The teacher was also given a handout that contained information in written format. After each recommended intervention was explained in detail, including evidence of effectiveness and implementation steps, the teacher was asked to complete the *Intervention Evaluation Form*. Facilitators only provided training for interventions rated as both feasible and acceptable by teachers, in the order of priority indicated by teachers.

Training. Facilitators provided training to teachers solely on interventions rated as both feasible and acceptable in order of teacher-selected priority. Teachers were initially trained to implement one or two interventions (depending on their preference, if they rated more than one intervention both feasible and acceptable) during a 15- to 20-min training session using the following steps: (a) the purpose of the intervention was explained, (b) examples and non-examples of the intervention were provided, (c) the intervention was modeled by the facilitator and role-played with the teacher, and (d) questions were answered. Additional interventions were sequentially added, as needed and requested using the same training procedure.

Implementation. Ongoing coaching was used to support teachers and increase intervention fidelity. Fidelity checklists were developed and field tested for each intervention reflecting core and critical components (see Kern et al., 2015, for detail). Each fidelity checklist consisted of two to seven operationalized components. Fidelity was assessed on or near the first day of implementation with two additional checks conducted within the first 10 days of implementation. Facilitators delivered brief performance feedback after each fidelity check, with detailed feedback and retraining delivered via a booster session when teachers failed to meet the pre-established fidelity criterion (80% fidelity or above, depending on intervention) on the last of the three fidelity checks. Booster sessions were problem-solving meetings centered on identifying and resolving

Table 2. Recommended Interventions and Teacher Ratings of Feasibility, Acceptability, and Rankings.

Intervention	Recommended	Feasible	Acceptable	Ranked first
Study Skills	64.70%	41.81%	45.23%	20.65%
Organizational Skills	58.01%	65.69%	65.17%	22.78%
PSTI	52.21%	84.75%	81.70%	56.16%
Expectations	50.83%	72.16%	71.25%	35.00%
OTR	48.01%	74.38%	76.92%	43.79%
Routines	26.35%	64.21%	61.63%	12.63%
Accommodations	25.10%	53.10%	51.79%	0.99%
De-Escalation	13.12%	53.97%	49.21%	6.78%

Note. PSTI = positive student–teacher interactions; OTR = opportunities to respond.

barriers to implementation (Clemens, Turner, & Kern, 2011). Other procedures to increase feasibility and/or acceptability were adding in-vivo reminders (e.g., notes with reminders to provide praise) or making minor modifications or adaptations to interventions (e.g., positive interaction provided via a personal student note rather than verbally) while maintaining core elements of the intervention. After the first booster session, fidelity was again assessed via three additional fidelity checks. If fidelity on the third fidelity check was still below the pre-determined level, an additional booster session was delivered followed by three additional fidelity checks. Training and coaching were discontinued if teachers failed to implement with pre-established fidelity after two booster sessions. Intervention fidelity continued to be assessed monthly for the duration of the implementation. For the purpose of this study, we determined an intervention was implemented if integrity data were collected at least once after training.

Post-implementation. Acceptability was evaluated post-implementation. All teachers who implemented one or more interventions completed a SIRF for each intervention at least 1 month after implementation.

Results

Pre-Implementation

Frequency of recommended interventions. To determine the interventions most frequently recommended, we coded classroom pre-intervention assessments completed by 336 teachers. Classroom assessments included 462 target student observations and 390 classwide observations. If a teacher had more than one target student in a single semester, multiple student observations may have been conducted. Also, if students met criteria for intervention across multiple semesters, more than one classroom assessment may have been conducted with a single teacher. The percentage each classwide intervention was recommended through assessment was calculated by dividing the number of times the intervention was recommended by the number of classwide assessments completed. The percentage each individual student intervention was recommended through assessment was calculated by dividing the number of times an individual intervention was recommended by the number of target student assessments completed. Results are presented in Table 2 (note that percentages sum to higher than 100 because multiple interventions may have been recommended). The most frequently recommended intervention was study skills (64.70%), and least frequently recommended was de-escalation (13.12%).

Feasibility, acceptability, and ranking prior to training. Intervention feasibility and acceptability was assessed by calculating the percentage teachers endorsed each intervention as feasible and acceptable (see Table 2). Priority for implementation was assessed by calculating the percentage of time each intervention was ranked first and last priority. PSTI was most frequently rated as feasible (84.75%) and acceptable (81.70%). Study skills were most often rated as least feasible (41.81%) and least acceptable (45.23%). The intervention most frequently ranked first was PSTI (56.16%), and accommodations were least frequently ranked first (0.99%).

Barriers to feasibility and acceptability. To identify teacher perceived barriers to feasibility and acceptability prior to implementation, we calculated the percentage each barrier was coded. The most frequent reason an intervention was coded as not feasible was "lack of time," endorsed for expectations (72.16%), routines (64.10%), organizational skills (57.30%), de-escalation (53.97%), and study skills (41.81%). "Other" was the most frequent reason that PSTI (84.47%), OTR (74.16%), and accommodations (53.10%) were coded as not feasible. Frequent explanations for the "other" category included teacher's belief that he or she was already providing the intervention (PSTI), that the intervention would not be helpful or was not needed (accommodations, PSTI), that the intervention did not match the class set up (OTR), and that the intervention could not be provided because the student did not have an IEP (accommodations). For most interventions teachers stated that they (rather than

their student) found the intervention not acceptable, except daily planner and organizational checklist, which teachers most often reported as not acceptable to the student.

Predictors of acceptability, feasibility, and priority. To determine the relative contribution of teacher characteristics and type of intervention (classwide vs. individual) to teacher ratings of acceptability, feasibility, and priority, we conducted linear and logistic regression analyses. Specifically, linear regressions were conducted to predict teacher intervention priority, and logistic regression analyses were conducted to predict acceptability and feasibility ratings prior to intervention implementation using predictors of teacher race, teacher years in current position, teacher age, teacher gender, teacher level of education, class type (i.e., general education, special education), and type of intervention (i.e., classwide, individual). The tests of the full models against constant only models were statistically significant for analyses of both feasibility and acceptability, indicating that the predictors in each set reliably distinguished between those who rated the interventions as feasible and those who did not, $\chi^2(8, N = 1{,}336) = 53.25$, $p < .001$, and those who rated the intervention as acceptable and those who did not, $\chi^2(8, N = 1{,}336) = 27.44$, $p < .05$.

For the analysis of predictors of feasibility, Nagelkerke's R^2 of .055 indicated a relationship between the predictors and teacher ratings of feasibility. Overall, prediction success was 68.2%. The Wald criterion demonstrated that intervention type ($p < .001$) and years in position ($p < .006$) made a significant contribution to prediction. Teacher gender, race, and level of education were not significant predictors. Type of classroom teachers taught was not a statistically significant predictor; however, prediction is questionable with $p = .05$. Exp(B) value indicates that when interventions were classwide compared with individual, the odds ratio was .50 times as large, and therefore, teachers were .50 times more likely to rate the intervention as feasible. Exp(B) value indicates that when teacher years in position is raised by 1 year, teachers were .973 more times likely to rate the intervention as not feasible and when teacher age is raised by 1 year, teachers were .995 times more likely to rate the intervention as unacceptable.

For the analysis of predictors of acceptability, Nagelkerke's R^2 of .074 indicated a relationship between the predictors and teacher ratings of acceptability. Prediction success was 69.2%. The Wald criterion demonstrated that intervention type ($p = .029$), years in position ($p < .001$), and gender ($p < .001$) made a significant contribution to prediction. Level of education and type of classroom were not significant predictors. Exp(B) value indicates that when interventions were classwide compared with individual, the odds ratio was .73 times as large, and therefore, teachers were .73 times more likely to rate the intervention as acceptable; male teachers were 2.13 times more likely to rate the intervention as acceptable. Exp(B) value indicates that when teacher years in position is raised by one unit, teachers were .957 more times likely to rate the intervention as unacceptable.

A linear regression was completed to predict intervention priority. The overall model was statistically significant, $R^2 = .04$, $F(7, 1414) = 9.28$, $p < .001$, and accounted for 4.4% of the variance. Teacher years in current position, gender, age, race, educational level, and type of class were not significant predictors of intervention priority. Type of intervention (classwide compared with individual) was associated with higher intervention priority $\beta = .203$, $t(7) = 7.79$, $p < .001$.

Implementation

To determine the portion of teachers who actually implemented an intervention after agreeing to implement and receiving training, we divided the frequency of interventions implemented by the frequency of trainings. Of the 341 trainings delivered, 82 were not followed by implementation. Specific training delivery and percentage of implementation per intervention are provided in Table 3. Teachers most often implemented OTR (86%) and never implemented de-escalation (0%).

To determine the relative contribution of teacher characteristics and type of intervention to teacher implementation (i.e., implemented, participated in one integrity observation, participated in three or more integrity observations), we conducted a linear regression analysis. The overall model was statistically significant, $R^2 = .07$, $F(6, 236) = 2.81$, $p = .012$, and accounted for 6.7% of the variance. Type of intervention (classwide vs. individual) and teacher age were associated with higher rates of implementation, $\beta = .148$, $t(6) = 2.31$, $p = .02$; $\beta = -.201$, $t(6) = -2.70$, $p = .007$, indicating that teachers were more likely to implement classwide interventions, and as teacher age increased, teachers were less likely to implement interventions.

Post-Implementation

To determine teacher perceptions of intervention acceptability post-implementation, we used the total score on the SIRF. Item 15 ("How willing were other staff members to carry out this intervention?") had 51 missing responses, most likely because teachers found this particular item difficult to answer in that it required knowledge of what strategies peers were using, so we removed it from the analyses. Total score means and standard deviations are presented in Table 4. A total score of 0 indicates teachers did not find the intervention acceptable, a score of 80 indicates teachers found the intervention somewhat acceptable, and a score of 140 indicates teachers found the intervention very acceptable. Acceptability ratings were fairly consistent with high

Table 3. Training and Implementation.

Intervention	Total times training delivered	Training delivered and implementation occurred (*n*)[a]	Percentage of implementation after training
Organizational Skills	109	82	75%
PSTI	92	77	84%
OTR	50	43	86%
Expectations	33	22	67%
Accommodations	24	20	83%
Study Skills	22	10	45%
Routines	8	5	63%
De-Escalation	3	0	0%
Total	341	259	76%

Note. PSTI = positive student–teacher interactions; OTR = opportunities to respond.
[a]At least one fidelity observation.

Table 4. Intervention Acceptability Total Scores Post-Implementation.

	SIRF total	
Intervention	*M*	*SD*
PSTI	116.22	19.07
OTR	110.26	12.36
Organizational Skills	109.50	8.56
Study Skills	109.25	10.78
Expectations	108.50	8.36
Accommodations	107.89	12.51
Routines	107.75	11.03

Note. SIRF = *School Intervention Rating Form*; PSTI = positive student–teacher interactions; OTR = opportunities to respond.

ratings across interventions. PSTI were rated the highest (M = 116.22, SD = 19.07), and routines were rated the lowest (M = 107.75, SD = 12.36).

To determine the relative contribution of teacher characteristics and the type of intervention to teacher ratings of factors of acceptability after implementation, a linear regression analysis was conducted with teacher ratings of suitability, perceived benefit, and convenience of the intervention. The initial predictors entered in the correlation analysis were teacher race, years in current position, age, gender, level of education, class type (i.e., general education, special education), and intervention type (i.e., classwide, individual). No statistically significant predictors were found for suitability or convenience.

For perceived benefit, the overall model was statistically significant, $R^2 = .24$, $F(7, 156) = 6.98$, $p < .001$. Intervention type and years in position were significant predictors, $\beta = .409$, $t(7) = 5.62$, $p < .001$; $\beta = .345$, $t(7) = 3.71$, $p < .001$, indicating that teachers were more likely to perceive more benefit with classwide interventions and teachers with more years in their current position were more likely to perceive benefit from the interventions.

Discussion

To our knowledge, this is the first study to evaluate the complex process of intervention selection and implementation by teachers of adolescents with emotional and behavioral challenges prior to and after intervention implementation. Furthermore, we examined the likelihood of implementation of the various interventions after training. In addition, unlike previous research using hypothetical examples, we collected in-vivo teacher ratings of feasibility and acceptability pertaining to their own classroom and students.

Results indicated that the most frequently recommended interventions for high school students with emotional and behavioral challenges, based on comprehensive classroom assessments, were individualized interventions (*Study Skills* and *Organizational Skills*). These results corroborate previous recommendations for individualized strategies designed to improve the academic success of high school students with emotional and behavioral challenges. For example, Wagner et al. (2006) found that students with emotional and behavioral challenges receive significantly fewer individualized strategies in high school compared with their elementary and middle school years. Unfortunately, our findings indicate that teachers reported a reluctance to deliver these strategies due to time constraints. These judgments are inconsistent with previous research indicating both effectiveness and high ratings of feasibility of individualized interventions by general education teachers for secondary age students (Evans, Schultz, DeMars, & Davis, 2011). It may be that the preference for classwide interventions in our study emerged primarily because this option was provided. That is, teachers may judge an individual intervention differently if it is the only option presented.

The preference for classwide interventions was supported by evidence from regression analyses in each stage of the project: pre-implementation, intervention, and post-intervention. Teachers significantly endorsed classwide

interventions as more acceptable before implementation; they implemented classwide interventions more frequently than individualized interventions and found them more suitable after implementation. This is a significant finding given the need for individualized interventions for high school students.

When asked to rate the priority of interventions in terms of choosing the intervention they would like to implement first, teachers most frequently chose PSTI (56.16%). This might be explained in part by the nature of the intervention, as PSTI was the least intensive intervention in terms of time and resources required. This explanation is consistent with teachers' explanations for feasibility and acceptability ratings, in which they most often cited "lack of time" as the reason why they would not be able to implement a strategy. These results support previous research findings indicating that teachers rate interventions that are less complex and time-consuming as more acceptable (Briesch et al., 2015; Witt & Martens, 1983).

Teachers' report of lack of time to implement interventions is consistent with other research indicating that teachers report having tremendous time demands (Soares, Vannest, & Harrison, 2009). Thus, in practice, consultants and/or coaches should be prepared to brainstorm creative ways to either adapt interventions to fit the teacher's routines or prioritize demands so time is available for implementation. Teachers never cited lack of resources as the most frequent reason why interventions were not feasible, which is encouraging and a testament to the cost-effectiveness of interventions. When teachers reported "other" reasons for not implementing interventions, they often noted a mismatch between their "personal philosophies" and the intervention (e.g., belief that it is unnecessary to praise adolescents for something they are required to do; students without IEPs should not be provided accommodations). In part, this reflects differing expectations for secondary age students and underscores the need for additional research. Furthermore, additional dialogue is needed to provide teachers with an understanding of the evidence behind recommended interventions as well as the support needs among students with emotional and behavioral challenges.

A critical component of our implementation process was gaining teacher buy-in before implementation. This is the primary reason we asked teachers to rate feasibility, acceptability, and priority before implementation and only provided training for interventions teachers rated as both feasible and acceptable and in the order of priority they selected. Thus, it was not surprising that most teachers actually implemented interventions after training as this process likely increased their commitment to implementing the intervention. Still, despite the teacher input during the pre-implementation process, there were interventions with low rates of implementation (i.e., *Study Skills* = 45%, *De-Escalation* = 0%). Low implementation might be partly explained by the complex nature of these interventions with respect to both time required for implementation (*De-Escalation*) and the need for one-to-one instruction (*Study Skills*). These findings are aligned with research indicating that teachers are likely to implement interventions perceived as less time-consuming and user-friendly and not likely to implement interventions perceived as very demanding (Stormont, Lewis, & Covington, 2005). Even though some teachers agreed to implement individual strategies, some reconsidered their commitment as they approached the implementation stage. Occasionally, teachers reported that circumstances changed (e.g., increased time demands, new job requirements), and they were not able to implement interventions as agreed. This suggests that it may be important to reevaluate acceptability and feasibility at multiple points throughout the implementation process.

Our last set of questions examined teacher perceptions of acceptability of interventions after implementation. Overall, teachers rated all interventions favorably after implementation, indicating high acceptability once they had experience with the interventions. This is encouraging, as it suggests that the research to practice gap can be diminished if teachers are provided sufficient training and support to implement the selected interventions.

Several limitations of the current study should be noted. First, we were only able to collect data from teachers who consented to be part of our study, thus data are inherently incomplete. That is, teachers who elected not to participate may have done so because they perceived any expectations associated with the study as not feasible or acceptable. Second, facilitators worked closely and strived to build productive relationships with the teachers from whom data were collected. As a result, social desirability might have influenced teachers' ratings. Future research should attempt to collect data from teachers who implement interventions apart from a research project. Third, we acknowledge that the relationship between acceptability and implementation is complex. Fourth, although statistical significance was found for several predictors of pre-implementation, implementation, and post-implementation factors, the amount of variance explained was small indicating the need for further research. Specifically, as it seems likely that teachers prioritize classwide interventions and be less willing to implement new interventions with more experience they have, the small amount of variance is an understatement of the variance (see Abelson, 1985). Thus, additional research studies of the differences in teacher selection of classwide versus individual interventions at the high school level and the association between teacher experience and implementation will provide further information to the field.

In terms of implications for practice, we suggest that teachers provide ongoing input throughout the implementation process. One way to help decrease the research to

practice gap is to engage in a continuous problem-solving dialogue with teachers. Reinke, Stormont, Herman, and Newcomer (2014) found that teachers who received more performance feedback had higher levels of implementation over time. We suggest that this performance feedback should include assistance for teachers in identifying what can be done to assure that support for implementation is provided.

In addition, as it appears that teachers are most comfortable with classwide interventions and adolescents tend to need more individualized interventions, we suggest means of reconciling the differences. It is possible that some of the individualized interventions such as organization skills and study skills could be implemented within a classwide setting if the teacher makes the intervention part of class routines and procedures. For example, teachers could teach a unit on organizational or study skills and then revisit the skills with the class as needed. Alternatively, additional personnel (e.g., school counselors, intervention specialists) could be identified to provide the interventions. In addition, consultants are encouraged to consider the finding that the longer teachers were in their position, the less likely they were to find interventions feasible or acceptable before implementation; however, they were more likely to perceive intervention benefit after implementation. More time and effort might be needed to determine and address the source of their initial reluctance.

Authors' Note

The opinions expressed are those of the authors and do not represent views of the institute or the U.S. Department of Education.

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