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ORIGINAL PAPER

# A Supportive Beliefs Intervention to Facilitate the Implementation of Evidence-Based Practices Within a Multi-Tiered System of Supports

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**Abstract** The current study represents a preliminary examination of school-level beliefs and attitudes as they relate to the implementation of universal evidence-based practices (EBPs) within a multi-tiered system of support (MTSS) targeting student's social, emotional, and behavioral problems. This study was organized around three primary objectives: (a) assess coaches' perceptions of the utility and importance of targeting educator beliefs to improve adoption and use of EBPs, (b) demonstrate the association between educator beliefs and degree of MTSS implementation, and (c) conduct a preliminary pre–posttest of a supportive belief intervention (SBI) to enhance educators' beliefs and examine whether changes in beliefs were associated with improved implementation. To accomplish these objectives, data were collected from 62 elementary schools across five school districts involved in a collaborative consultative partnership to design and implement a school-wide MTSS framework. Collectively, the results provided preliminary support for the importance of beliefs: (a) coaches reported beliefs were critical to implementation and facilitative of their roles working with teachers, (b) educator beliefs predicted initial implementation fidelity on a global measure of MTSS practices and specific measure of school-wide positive behavior interventions and supports, and (c) the SBI was associated with significant changes in educator beliefs and these changes were associated with improved implementation. The implications, limitations, and future directions of this research are discussed.

**Keywords** Implementation · Social, emotional, and behavioral (SEB) · Evidence-based practices (EBPs) · Multi-tiered systems of support (MTSS)

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## Introduction

Studies indicate that approximately one out of every five students has a diagnosable mental health disorder (Costello, Mustillo, Erkanli, Keler, & Angold, 2003). Many more exhibit milder forms of social, emotional, and behavioral (SEB) problems that do not reach clinical levels, but nevertheless negatively impact academic achievement (Goodman, Joyce, & Smith, 2011), are associated with an increased likelihood of short- and long-term negative outcomes (Beesdo & Knappe, 2012), and, in some circumstances, may also impede their classmates' learning (Trout, Nordness, Pierce, & Epstein, 2003). As a result, there is burgeoning interest in school mental health to prevent social, emotional, and educational problems (Durlak, Weissberg, Dymnicki, Taylor & Schellinger, 2011).

### Multi-Tiered Systems of Support (MTSS)

A multi-tiered system of support (MTSS) has been advocated as a way to organize and deliver a continuum of evidence-based practices (EBPs) to address students' SEB needs (EBPs; Cook, Burns, Browning-Wright, & Gresham, 2010). MTSS is a proactive, prevention-oriented service delivery framework that aims to meet all students' needs through the implementation of a continuum of EBPs via

data-driven decision making (Strein, Hoagwood, & Cohn, 2003). The continuum of EBPs consists of delivering universal (i.e., Tier 1) supports for all students, selected (i.e., Tier 2) interventions for some students, and indicated (i.e., Tier 3) treatments for a few students. Although research has demonstrated that numerous EBPs can be implemented within a MTSS framework, multiple barriers interfere with their uptake and sustained use under natural educational conditions (Forman et al., 2012). Barriers include insufficient post-training consultation (i.e., "train and hope") (Joyce & Showers, 2002), unsupportive leadership (Aarons, 2006), and policies that are counterproductive to the implementation of new innovations (Slavin, 2002).

## Bridging the Implementation Gap

Increasingly, research is focusing on understanding implementation processes and identifying strategies that help transfer research findings into community-based social service settings (Powell et al., 2012). Given the limited use of EBPs in schools, researchers and educational leaders have also called for the identification of multi-level strategies that facilitate the use of effective practices in the education sector (Forman et al., 2013; Owens et al., 2014). In particular, multiple components of the inner organizational context (i.e., the settings and individuals involved in implementation efforts) have been identified that influence implementation success and represent specific pinpoints for implementation enhancement interventions. These include organizational climate—defined as personnel's perceptions of, and emotional reactions to, the characteristics of their work setting (Aarons & Sawitzky, 2006), principal leadership (Elias et al., 1997), and organizational citizenship—defined as behaviors that go beyond the standard "call of duty" or core job aspects (Organ et al., 2006).

The characteristics of the school organizational context described above can be distinguished from the steps or approaches needed to actually install an EBP. For instance, effective professional development has been shown to be a key ingredient for quality installation of innovative educational programs (Penuel, Fishman, Yamaguchi, & Gallagher, 2007). Studies have demonstrated that, to be successful, professional development should also incorporate coaching to facilitate EBP implementation in schools (Joyce & Showers, 2002). Coaching represents a form of facilitative process that helps implementers comprehend the purpose of the intervention, internalize intervention delivery, and adapt the intervention to the context (Dusenbury et al., 2005). Coaching has emerged as a promising strategy that enhances relevant implementation (i.e., appropriateness and fidelity) and student (e.g., behavioral and academic) outcomes in the context of EBP implementation over and above those observed via standard professional development activities (Bradshaw et al., 2012; Haskins & Loeb, 2007). Unfortunately, findings demonstrate that many implementers are ambivalent or resistant to coaching interactions and that implementation may suffer as a result (Dart, Cook, Gresham, Collins, & Chenier, 2012). For these reasons, coaching alone may be insufficient to produce high levels of implementation (Fixsen, Blase, Naoom, & Wallace, 2009).

## Educator Beliefs and Attitudes

Research supports the view that the beliefs and attitudes of purveyors or implementers are likely to influence the uptake and use of EBPs (Nelson & Steele, 2007). Researchers in numerous fields, including education, have also narrowed in on the importance of implementer beliefs and attitudes to the utilization of EBPs (Aarons & Palinkas, 2007; Haney, Czerniak, & Lumpe, 1996). In recognition of the role of beliefs and attitudes, Lyon, Stirman, Kerns, and Bruns (2011) advocated for the development of effective methods of increasing professionals' motivation to implement new innovations in their practice. Specifically, they identified existing motivational enhancement strategies that take direction from contemporary theories of motivation (e.g., Fishbein et al., 2001) to identify specific areas for improvement in order to build provider commitment (e.g., Feifer et al., 2006). However, limited to no attention has focused on intervening with educators on their beliefs prior to and throughout implementation.

Beliefs and attitudes among educators have been argued to be a prerequisite to significant change in practices and improvement in outcomes within schools (Guskey, 1986). Both qualitative and quantitative researches support the view that educators' beliefs toward certain practices and their own professional roles are likely to influence the uptake and use of EBPs (Bowden, Lanning, Pippin, & Tanner, 2003; Parcel, O'Hara-Tompkins, Harrist, & Basen-Engquist, 1995). For example, teacher beliefs have been shown to correlate with SWPBIS implementation fidelity (Kincaid et al., 2007) and their willingness to adopt and implement social–emotional learning curricula (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2012). Moreover, educators who possess a belief that components of some EBPs are detrimental to students (e.g., that extrinsic reinforcement—a key component of SWPBIS and some SEL programs—harms intrinsic motivation) may have limited intentions to implement those EBP (Maag, 2001). Unfortunately, the extant literature is correlational in nature, with few studies explicitly focusing on ways to promote supportive beliefs and attitudes as an implementation enhancement strategy. Pre-implementation interventions that focus on altering beliefs and attitudes prior to actual implementation are likely to pay significant dividends

during the subsequent phases of the implementation process (e.g., implementation and sustainment) when professionals' attitudes about EBP become particularly salient (Aarons et al., 2011).

Researchers have advocated for the use of theory in designing interventions to improve implementation, as theoretically informed interventions are likely to be more effective if they focus on causal determinants of human behavior. Social-cognitive theories, in particular the theory of planned behavior (TPB), have been argued to be useful in the formation of implementation enhancement interventions (Eccles et al., 2005). The TPB was developed to predict and explain human behavior in specific contexts (Ajzen & Manstead, 2007). The TPB states that an individual's intention to carry out a given behavior is the most potent predictor of behavior (Fishbein & Ajzen, 1975). According to the TPB, the recipe for successful adoption and implementation of EBP is an implementer who has supportive beliefs about the intervention, perceives there to be social expectations/pressure to implement the practices, and believes in one's capability to implement the practice and that doing so will make a relevant difference (Eccles et al., 2007). However, to date, limited to no research has examined the potential impact of integrating this theory into an intervention to promote better implementation.

### Purpose of the Present Study

Considering the role of implementer beliefs and the importance of developing theoretically informed interventions, the purpose of this study was to examine the importance of educator beliefs and attitudes as they relate to the adoption and use of EBPs targeting students' SEB functioning. This study was conducted in the context of a collaborative partnership with several school districts to develop and implement a behavioral multi-tiered system of support (B-MTSS) framework in an effort to promote better social, emotional, and academic outcomes. We organized this research according to three specific objectives. The first objective was to examine coaches' perceptions of the importance (i.e., represents an important aspect of the implementation process) and utility (i.e., makes coaching easier and more effective) of addressing educator beliefs and attitudes to facilitate implementation of practices associated with a B-MTSS framework. The second objective was to examine whether educators' beliefs collected pre- and post-PD and coaching were associated with the degree to which elements of the B-MTSS framework were being implemented with fidelity. The last objective was to conduct a pre–posttest to examine whether a supportive belief intervention (SBI) was able to produce significant, positive changes in educators' beliefs and attitudes over time, and whether changes in beliefs were correlated with global and specific measures assessing fidelity of implementation. It is important to note that this represents a preliminary study examining the role of educator beliefs as they relate to implementation of MTSS practices.

Based on the research objectives outlined above, we had several hypotheses. First, we postulated that coaches would report that beliefs are critical to implementation success. Second, we hypothesized that educator beliefs and attitudes would be predictive of school-level MTSS implementation fidelity broadly and of SW-PBIS fidelity specifically. Third, we predicted that we would observe a significant change in educators' beliefs across schools following the SBI and this change would be associated with improved implementation outcomes.

## Methods

### Participating Schools

A total of 62 elementary schools across five school districts were included in this study. These schools were drawn from districts that were participating in system-wide reform efforts to implement a B-MTSS. Districts were located in different geographic regions of the USA: Midwest, Southern California, and Northern California. In total, there were a total of 24,118 students enrolled in these schools. The demographic data on the students in the participating elementary schools were as follows: gender (51 % male and 49 % female), ethnicity (48 % White, 19 % Hispanic/Latino, 18 % Asian/Pacific Islander, 13 % African American, and 2 % Other), and socioeconomic status (38 % free and reduced lunch). Moreover, 13.7 % of the students in the schools were receiving special education services.

There were a total of 1,181 educators (94 administrators, 1,071 teachers, and 16 coaches) who participated in the study. As for educator demographics, the average years in the profession were 7.6 (SD = 4.1) for teachers, 8.3 (SD = 5.2) for administrators, and 9.8 (SD = 3.5) for coaches. The ethnic breakdown of educators was 78 % Caucasian, 8 % Asian/Pacific Islander, 6 % African American, 3 % Hispanic/Latino, and 6 % other. The school districts experienced an average staff attrition rate of 24 % per year (range 14–35 %). At the outset of the study, no school districts were implementing a system-wide approach to addressing student SEB needs.

Coaches were existing employees within the school district whose positions were repurposed to provide coaching supports to individual schools on the implementation of the B-MTSS, including providing performance-based feedback on the implementation of practices,

modeling certain practices when needed, and engaging in a problem-solving process with school teams to overcome barriers to implementation. These coaches were selected given their prior experience and training in consultation and coaching methods and received specialized training and support (e.g., two additional days of professional development, attendance at coaching conferences/workshops, and maintained ongoing communication with the outside consultants) to facilitate the development of their content expertise. The two days of coaching professional development consisted training them in data-based decision making (e.g., fidelity rubrics to track implementation practices and inform performance-based feedback), the problem-solving method (problem identification, problem analysis, generate plan, plan implementation, and plan evaluation), and effective coaching techniques (e.g., motivational interviewing techniques, rapport building, group facilitation). Coaches were primarily school psychologists ($n = 10$), but also included former site administrators ($n = 3$) and school social workers ($n = 3$).

## Procedures

The school districts contacted the first and last authors to engage in a multi-year, district-wide initiative to implement a B-MTSS targeting students' SEB needs. All the data were collected as part of the B-MTSS initiative to facilitate program evaluation and create a feedback system to improve future implementation. IRB approval was obtained and no identifying student information was gathered as part of the data collection process. The B-MTSS initiative was designed based on a horizontal (within tiers of support) and vertical (across tiers of support) integration of EBPs framework (Domitrovich et al., 2010) to facilitate implementing a continuum of supports and making ongoing decisions about students and practices based on data. This model is discussed in greater detail in other sources (Sprague, Cook, Browning Wright, & Sadler, 2008; Cook, Browning Wright, Gresham, & Burns, 2010).

Consistent with system change literature, this initiative was designed as a three-year project in which participating schools build capacity over time to ultimately build the model to scale (Aarons, Hurlburt, & Horwitz, 2011). There were a total of four PD sessions during the first year. Each PD session entailed 2 days, each lasting 6 h (total of 8 six-hour days). The number of PD days was systematically decreased to 6 days during the second year and 4 days during the third year. The initiative was grounded in a train-the-trainer model of implementation with embedded coaching provided to each of the participating schools between each of the professional development sessions. External consultants (a researcher first author and professional educational consultant last author) trained each of the site-based teams to be indigenous trainers and disseminators back at their site in order to build internal expertise within each school. Coaches attended all PD sessions and supported teams' efforts to disseminate information and implement practices back at their school site.

The teams included site administrators, professional support staff (school psychologist, counselor, and/or behavior specialist), two general education teachers, and two special education teachers. School administrators were instructed to select influential members of their building who were open and willing to support implementation efforts back at the school site (Atkins et al., 2008). Time was reserved at the end of each professional development session to create an action plan (what will be done, who will do it, what resources are needed to do it, and by when will it be done) based on each school's identified priorities to incrementally implement the content and practices associated with the B-MTSS. The main content for the first PD session were modeled activities to promote educator beliefs with regard to supporting student SEB functioning (see below description of SBI), while only a little time was devoted to new SBI activities during the remaining PD sessions. However, for all PD sessions, teams were instructed to review their school-level beliefs and develop action items to deliver aspects of the SBI.

The initiative emphasized a sequential yet recursive process of establishing readiness and scaling up implementation of key practices of the B-MTSS framework. The first step in this process was to establish *beliefs and attitudes* that are supportive of the adoption and use of effective practices. Knowledge and skills represented the next component of the system change process. The *knowledge* component of the system change process was to deliver specific content that focused on developing the conceptual and practical understanding of the practices that populate the B-MTSS framework. The *skills* component of the system change approach consisted of breaking down each of the practices into its constituent practices (e.g., progressive system of responding to problem behavior—proximity, redirection tactics, ongoing monitoring to reinforce desirable behavior, effective command, and teaching interaction with the student) and teaching educators how to implement practices with fidelity using a tell-show-do approach. The last component of the system change process was to develop specific *procedures* that would facilitate the sustainment of implementation. These procedures included periodic administrative walk-through observations to monitor implementation, structured professional learning community meetings about specific practices included within the B-MTSS framework, and developing specific policy that outlines expectations to implement particular practices.

A pre–post-design was used to address the three research objectives outlined above. Baseline data were collected in the Fall prior to the initial B-MTSS PD session. All post data were collected in the Spring at the end of the academic year.

## Interventions

### *Behavioral MTSS Framework*

The B-MTSS framework was based on the seven key concepts of MTSS: (1) multiple tiers of support, (2) evidence-based practices, (3) universal screening, (4) progress monitoring, (5) data-driven decision making, (6) fidelity of implementation, and (7) problem-solving teaming (see Cook et al., 2010). Moreover, as discussed above, the B-MTSS framework emphasizes the integration of theoretically different practices within certain tiers of support (e.g., SW-PBIS and SEL within Tier 1) that serve different purposes yet are complementary of one another, as well as the integration of supports across tiers of support to facilitate better needs-driven programming. For the purposes of this study, only the Tier 1 support system was emphasized, considering that the main objective of Year 1 of the initiative was to facilitate implementation of the Tier 1 supports for all students. The following practices comprised the Tier 1 level: SW-PBIS (positive, structured, and safe environment), adoption of an SEL curriculum (teaching critical skills), proactive classroom management (positive, structured, and safe environment), intentional practices to establish, maintain, and restore positive relationships with students (positive relationships), and universal screening practices (needs-driven programming). For a greater discussion of each of these components, see Sprague et al. (2008) and Cook et al. (2010).

### *Supportive Belief Intervention (SBI)*

The TPB provided the overarching theoretical framework to design and deliver the SBI to alter, shift, or solidify supportive beliefs and attitudes among educators to facilitate the adoption and use of EBPs, which has been shown to predict and explain human behavior in specific contexts (Ajzen & Manstead, 2007). Thus, the authors developed and integrated a range of supportive belief activities throughout the professional development sessions that would facilitate positive attitudes, increase social expectations and pressure around the implementation of EBPs, and improve self-efficacy. Moreover, social influence and persuasion tactics were embedded throughout (Cialdini, 2001; Pratkanis, 2007), such as the *saying is believing* (i.e., generating and advocating a persuasive message to a receptive audience; Aronson, 1999), *social proofing* (i.e., people act a certain way because they observe or hear about others acting this way; Cialdini, 2009), and *commitment and consistency* (i.e., people behave consistently with their commitments; Sundle, Cialdini, Griskevicius, & Kenrick, 2012). The content included relevant video clips, small group reflective exercises (e.g., what are anti-relationship strategies that can be used in schools? Develop a mindset device that enables the perfect belief system when working with challenging students—what beliefs and attitudes would you program into this machine?), engaging examples to highlight important research findings (e.g., using humor and interesting examples), testimonial stories from other educators (e.g., testimonial from teacher indicating the importance of proactive supporting students), and metaphors were integrated into a presentation.

## Measures

### *Beliefs About Behavior Survey (BABS)*

The BABS (Browning Wright & Cook, 2008) was used to measure school-level beliefs and attitudes relevant to practices targeting students' SEB functioning. Consistent with effective scale construction, the content of the BAB was originally developed based on expert consensus. Five experts in SEB and MTSS were asked to generate a list of common beliefs that were either facilitate of (positively stated belief) or interfered with (negatively stated belief) the adoption and implementation of EBPs that target improving students' SEB performance. A total of 92 beliefs were generated as the initial item pool. This list was then narrowed down using a sorting process that consisted of ranking items from most to least important and eliminating redundant beliefs. This resulted in 35 negatively and positively stated beliefs that were measured on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree."

A favorable or supportive belief is coded as either agreeing with a positively stated belief (e.g., "even without parental involvement and support, schools can effectively teach students' behavioral expectations and social–emotional skills") or disagreeing with a negatively stated belief (e.g., "teaching students how to behave appropriately at school is the parents' or students' responsibility—not mine"). To capture school-level beliefs, an index was calculated based on the number of beliefs that 80 % or more staff in a school provided ratings in the supportive or favorable direction (agree with a positively stated belief and disagree with a negatively stated one). The greater the value on this index, the greater the number of supportive beliefs educators' possessed collectively in a given school. The 80 % criterion was based on research that has identified this percentage as a tipping point for implementation

(Fixsen & Blase, 1993; Horner et al., 2004). Thus, a value of 15 indicated that 80 % or more of the staff had supportive beliefs on 15 of the 35 items. Prior research has evaluated the technical adequacy of the BABS, and findings indicate that it possesses adequate test–retest reliability ($r = .88$) and convergent and divergent validity (Cook & Browning Wright, 2012).

*Multi-Tiered System of Support for Behavior Evaluation Rubric (MTSS-BER)*

The MTSS-BER (Cook & Browning Wright, 2012) was developed to serve as a global measure of the adoption and implementation of key practices within the B-MTSS framework that was completed by site-based teams with the assistance of their assigned coach. The MTSS-BER has been shown to be predictive of school-level outcome data, including academic achievement, behavioral data, and school climate (Cook, 2013). Each item on the MTSS-BER is rated on a four-point scale to reflect the degree of implementation: exploring and planning, partially implementing, moderately implementing, and fully implementing. The MTSS-BER includes a total of 28 items that are broken down into six domains: (1) vision, beliefs, and objectives, (2) data-based decision making, (3) Tier 1 implementation, (4) Tier 2 implementation, (5) Tier 3 implementation, and (6) equity practices. Each domain was measured by multiple items to capture the degree to which a school disseminates and implements key components of the B-MTSS Framework. For the purposes of this study and given the scope of Year 1 of this project, only the first three domains from the MTSS-BER were utilized for analyses. Thus, a total score was computed across the three categories to represent an overall degree of follow through and fidelity of implementation for Year 1.

*School-Wide Evaluation Tool (SET)*

To include a gold standard measure of implementation fidelity, the SET (Sugai et al., 2000) was used to capture fidelity of SW-PBIS practices. The SET is a direct observation measure of seven core features of universal SWPBIS fidelity (behavioral expectations defined, behavioral expectations taught to students, rewards delivered for appropriate behavior, predictable consequences, formal systems to collect and use data, administrator support, and district support). Scores range from 0 and 100 %, (100 % = perfect fidelity). The SET has documented inter-observer agreement ($r = .99$), internal consistency ($\alpha = .96$), test–retest reliability ($r = .97$), and construct validity ($r = .75$ with staff-reported effective behavior support systems; Horner et al., 2004). Trained coaches within each school district conducted the SET observations and completed the ratings. No inter-observer agreement data were collected as part of this study.

*Coach Survey*

For the purposes of this study, a coach survey was developed to capture coaches' perceptions regarding the importance of addressing beliefs and attitudes to facilitate the implementation of EBPs according to a MTSS framework, as well as the extent to which they perceived that the SBI content facilitated their coaching efforts surrounding implementation of the Tier 1 level of supports. A total of three items were constructed to measure these perceptions: (1) To what extent was the focus on altering beliefs helpful to remove resistance/ambivalence among educators to implement particular EBPs associated with the B-MTSS?; (2) To what extent have the professional development activities targeting educators' beliefs made it easier and more effective for you to do your job of coaching or consulting with them?; and (3) How important is it for school systems to provide specific information or trainings to educators' to alter their mindsets or belief system before actually training them on implementing an evidence-based practice? The coach survey possessed acceptable internal consistency ($\alpha = 0.72$) (Nunnally & Bernstein, 1994).

## Results

Data analyses were conducted in step with the research objectives described above. Coaches' perceptions of the utility and importance of addressing educator beliefs were examined first. Following, descriptive statistics were calculated and correlational analyses performed to examine the association between the independent variable (i.e., educator beliefs) and the dependent variables (global and specific implementation fidelity). Last, a pre–posttest of the impact of the SBI was performed (*t* test on change scores) followed up by correlational and regression analyses to examine whether changes in beliefs over time were associated with implementation outcomes. All analyses were conducted using SPSS version 21.

Research Objective #1

The first research objective focused on gathering data on coaches' perceptions of the importance and utility of implementation enhancement efforts that intentionally focus on altering educators' beliefs and attitudes related to the implementation of SEB EBPs. Data were obtained from a total of 16 coaches spread across the five districts who were assigned specific schools to support the implementation of the B-MTSS framework (4–7 schools depending

on the district). Descriptive statistics indicated that the mean ratings across the three items were 4.87 (range 4–5), 4.77 (range 4–5), and 4.95 (range 4–5) for items 1, 2, and 3, respectively. As one can see, there was very little variability between the coaches' ratings, with the average ratings indicating that coaches endorsed the utility and importance of addressing educators' beliefs. Specifically, the findings indicated that coaches reported that addressing educators' beliefs was (a) helpful to alleviate staff resistance and ambivalence to implementing practices to promote student SEB well-being (item 1), (b) useful to make their job of coaching and consulting with educators easier and more effective (item 2), and (c) extremely important to facilitate the adoption and implementation of EBPs (item 3).

## Research Objective #2

To examine whether school-level educators' beliefs were predictive of relevant global and specific implementation outcomes, we first computed descriptive statistics to capture the means and standard deviations of the independent (BABS scores) and dependent variables (MTSS-BER and SET scores), see Table 1. Descriptive statistics for the BABS scores indicated that the average for pre and post was 14.32 (SD = 3.46; range 8–23) and 18.69 (SD = 4 .89; range 9–28), respectively. These data indicated that participating schools had an average of 14 out of the 35 beliefs upon which 80 % or more of the staff endorsed supportive beliefs at pre (i.e., agree with a positively stated belief or disagree with a negatively stated belief) and nearly 19 out of 35 beliefs at post. The MTSS-BER and SET were measured at post (i.e., end of Year 1), and the descriptive statistics are included in Table 1. As one can see, there was significantly variability across all the implementation indices, with ranges indicating that there were schools with low implementation, moderate implementation, and high implementation.

Correlational analyses were then performed to examine the relationship of school-level BABS scores and the implementation variables (see Table 2). We first examined the data to determine whether the assumptions of correlational analyses (e.g., normality, continuous data, linear relationship, no major outliers), and the basic assumptions were met. The results indicated that both pre- and post-BABS scores correlated significantly and positively with the implementation outcome variables. Comparison of the correlations across data collection time points indicated that post-BABS scores had consistently stronger correlations with implementation outcome variables than the pre-BABS scores. The pre-BABS correlations indicated that schools with higher initial beliefs were associated with higher scores at post across all the implementation variables. Specifically, the pre-BABS scores correlated significantly with the four MTSS-BER scores (vision/beliefs/objectives, data-based decision making, Tier 1 global

**Table 1** Descriptive statistics for the independent and dependent variables

| Variables | Mean | SD | Minimum | Maximum |
|---|---|---|---|---|
| Pre-beliefs about behavior survey[a] | 14.32 | 3.46 | 8 | 23 |
| Post-beliefs about behavior survey[b] | 18.69 | 4.89 | 9 | 28 |
| Vision/beliefs/objectives*[,c] | 5.15 | 1.94 | 2 | 9 |
| Data-based decision making*[,d] | 5.73 | 2.11 | 3 | 10 |
| Tier 1 implementation*[,e] | 7.88 | 2.47 | 4 | 12 |
| MTSS-BER total score[f] | 18.76 | 5.21 | 9 | 29 |
| School-wide evaluation tool[g] | 67.68 | 15.64 | 30 | 86 |

*MTSS-BER* Multi-tiered System of Support Behavior Evaluation Rubric; *subscales of the MTSS-BER. The ranges for all of the scales are: [a] 0–35, [b] 0–35, [c] 0–9, [d] 0–12, [e] 0–15, [f] 0–36, and [g] 0–100

**Table 2** Bivariate correlations between pre- and post-BABS scores and implementation outcome variables

| | MTSS-BER vision and objectives | MTSS-BER data-based decision making | MTSS-BER Tier 1 | MTSS-BER total score | SET score |
|---|---|---|---|---|---|
| Pre school-level BABS | .47*** | .24* | .36*** | .62*** | .41*** |
| Post school-level BABS | .54*** | .33** | .43*** | .74*** | .57*** |
| Δ School-level BABS | .41*** | .25* | .48*** | .67*** | .51*** |

* $p < .05$; ** $p < .01$; *** $p < .001$

implementation, and total score) and degree of implementation of SW-PBIS (SET score). The pre-BABS scores were correlated the strongest with the MTSS-BER total score ($r = .62$) followed by the vision/beliefs/objectives ($r = .47$) dimension. With regard to post-BABS scores, a similar pattern of relationships was uncovered, suggesting that schools with higher scores at post were associated with significantly better implementation. The post-BABS score had the largest correlation with the MTSS-BER total score ($r = .72$), followed by the SET scores ($r = .57$). Both the pre- and post-BABS score had the weakest correlation, albeit significant, with the data-based decision making variable from the MTSS-BER.

### Research Objective #3

The last research question examined the extent to which the SBI was associated with significant changes in school-level beliefs and attitudes from pre to post and whether the changes were predictive of implementation. The first step consisted of examining the impact of the SBI to change educators' beliefs over time. To answer this question, we conducted a paired sample *t* test on the pre–post data. The null hypothesis was that there would be no difference between pre- and post-BABS scores. Results indicated a significant effect across time, $t(61) = 7.28$ ($p < .001$), with the means revealing significant improvements in the average number of items with 80 % or more of staff endorsing beliefs/attitudes in the favorable or supportive direction of implementation from pre ($m = 14.32$) to post ($m = 18.69$). The standardized mean difference effect size for this was 1.03, indicating a large effect according to Cohen's (1988) guidelines.

The next step was to examine whether the pre–post changes in BABS scores were predictive of implementation outcomes. Unlike the analyses under Objective 2, these analyses focused specifically on determining whether the degree of change in beliefs was associated with implementation outcomes at post. The results from these correlational analyses revealed that BABS change scores were significantly related to all five implementation outcome variables (see Table 2). These findings suggested that schools that changed the most on beliefs were associated with higher-quality implementation across both global and specific fidelity measures. These associations were the strongest for the MTSS-BER total score and SET scores. The final analysis consisted of performing a hierarchical multiple regression with baseline beliefs being entered first and then post-beliefs regressed on the MTSS-BER total score. The results indicated that for the full model, baseline and post-beliefs accounted for 64 % ($R^2$) of the variance in the MTSS-BER score [$F(2, 60) = 42.00$, $p < .001$]. Moreover, after controlling for the effects of baseline beliefs, post-beliefs were able to significantly explain variance in the implementation outcome variable ($\beta = .66$; $t(1) = 6.58$, $p < .001$).

## Discussion

The purpose of this study was to investigate the relevance and importance of addressing educator beliefs and attitudes in order to support the implementation of EBPs included within a B-MTSS framework targeting students' SEB functioning. Several noteworthy findings emerged from this research that have important implications for research and practice. Perhaps most noteworthy were the findings from a preliminary pre–posttest of the SBI which indicated that educators' beliefs significantly improved, and the changes were associated with indicators of implementation fidelity. Additional evidence in support of the importance of educator beliefs to the implementation process was obtained from data on coaches' perceptions of the utility and importance of such an undertaking, as well as prospective and concurrent relationships demonstrating the link between educator beliefs and implementation outcomes.

Although the coaches did not directly implement the SBI, they did help work with school teams to prepare and delivery aspects of it to promote more supportive beliefs. As a result, they had direct experience with the school team's use of and staff response to the SBI content. Coaches' data indicated that they perceived efforts the SBI to be helpful to reduce educator resistance and ambivalence to change, extremely useful to facilitate their own efforts to improve fidelity of implementation, and important to promote a school context that is supportive of EBP implementation. This finding was important considering that coaches are often offered as one of the main solutions to overcome barriers with regard to implementation (Kretlow & Bartholomew, 2010). However, prior research has shown that resistance or ambivalence to coaching and consultation is commonplace (Gonzalez, Nelson, Gutkin, & Shwery, 2004), underscoring the importance of identifying implementation interventions that can facilitate effective coaching.

The correlational analyses revealed that school-level beliefs and attitudes were associated with a global, team-completed measure of implementation fidelity, as well as a specific gold standard, observational measure of SW-PBIS fidelity—the SET. This is notable considering the prior research linking SET scores to relevant student outcomes (Horner et al., 2004). Results indicated that, overall, schools with higher levels of beliefs at pre were likely to be associated with higher levels of implementation fidelity at post. Moreover, findings indicated that schools with higher beliefs at post were associated with higher implementation by the end of Year 1 of the B-MTSS initiative. Considered

together, these findings provided support for the link between beliefs and implementation behaviors, and the utility of such measures to better understand readiness for the installation of EBPs, as well as effectively plan system change efforts.

Findings also provided initial support for the SBI, as a significant and relatively large change in school-level beliefs from pre to post was observed. Specifically, invoking belief and attitude change through a non-confrontational manner using social persuasion tactics represents a potentially promising way to change educator behavior. Evidence also supported the importance of this shift, as changes in beliefs from pre to post were significantly and positively correlated with posttest fidelity, indicating that schools that experienced the most change were associated with the highest levels of implementation at the end Year 1 of the initiative.

Despite the significant effect demonstrating change in beliefs over time, there were still several schools with low beliefs and low implementation outcomes at post (15 %; 10 of the 62 schools). It is important to uncover the factors that serve as barriers to implementation efforts, particularly when substantial resources (professional development, coaching, and materials) were devoted to supporting installation and inner organizational factors (beliefs of administrators and teachers) were factored into the process. One simple explanation is that the content never made its way back to the school, because dissemination rested primarily on the shoulders of the identified building-level teams. This represents a known limitation of the train-the-trainer approach to dissemination and implementation (Pancucci, 2007), suggesting a need to better monitor and support building-level teams with the dissemination process. Another potential explanation is that the B-MTSS work was not prioritized in relation to other initiatives within the systems or that additional inner organizational context factors influenced the implementation process. For example, the roll out of Common Core and teacher evaluation systems were actively occurring in all school districts, potentially creating time conflicts or competing demands for participating teachers. Regardless of the explanation, these schools may benefit from additional implementation support enhancements, such as dedicated leadership interventions (e.g., Aarons et al., under review), closer monitoring and feedback for accountability, more intensive coaching resources, and/or use of incentives to increase motivation to implement practices.

## Implications

One of the main implications that can be drawn from this study is the importance of measuring and targeting educator beliefs and attitudes to reduce the implementation gap. There is a need for well-validated and feasible measures that not only assess beliefs and attitudes, but capture other factors associated with the school organizational context. A suite of such measures could be used to better examine readiness for implementation, as well as support ongoing implementation and sustainment of school-based EBPs. In alignment with the larger implementation science literature, careful assessment of the organizational implementation context of schools should consider multiple system levels and include perspectives of individual teachers and administrators, as well as organizational processes at the school and district levels (e.g., Aarons, Erhart, & Farahnak, 2014). Ultimately, there is likely no single implementation strategy that can produce successful Tier 1 implementation in schools, but rather a collection of strategies that need to be used to ensure high quality implementation.

Although assessing this was not a primary goal of the current project, beliefs and attitudes may also function across multiple levels within the inner organizational context of a school. For example, improved beliefs and attitudes among both teachers and administrators may result in a more supportive implementation climate, which enhances the overall context for implementation. It is also quite possible that improved attitudes and beliefs result in more supportive leadership, which in turn triggers a recursive process that leads to more consistent messaging about implementation, greater time allocation for dissemination, and enhanced accountability. The current study did not attempt to differentiate beliefs according to different groups of educators and measure other relevant inner organizational factors potentially related to implementation (e.g., strategic leadership, implementation climate).

## Limitations and Future Research

As with most studies, this research is not without its limitations. First, this was not a randomized control study and, as such, is unable to provide causal inferences regarding the effects of the SBI and the relationship between educator beliefs and implementation of EBPs. Given the scope and nature of the study, the intention was not to perform a rigorous experimental evaluation, but rather to demonstrate the importance of beliefs and attitudes to fidelity and the potential promise of the SBI. Future studies should use more tightly controlled procedures to replicate the findings reported here and to demonstrate the causal effects of implementation enhancement interventions that target educators' beliefs and attitudes.

Second, this study did not involve the collection and analysis of student outcome data. As a result, it is unclear whether educator beliefs and attitudes are predictive of student outcomes or whether higher fidelity was associated

with student improvement in this particular project. Future research should conduct meditational analyses that examine the direct and indirect effects of educator beliefs and attitudes on student outcomes. Third, the findings indicating that coaches found the SBI to be relevant and helpful in facilitating their dissemination and implementation efforts might be expected in light of cognitive dissonance and social desirability. Moreover, no data were collected on coaches' adherence to procedures. Future research should examine whether belief-enhancing interventions are causally linked to coaching effectiveness.

Fourth, although the MTSS-BER and SET have demonstrated acceptability reliability in prior studies, no reliability data were collected as part of this study, given that school-based coaches were assisting with data collection. The use of indigenous school staff as coaches, however, represented a significant strength of this study, Finally, data were only analyzed at the school level. Given the multilevel structure of schools, future research should gather individual (teacher and administrator) and school-level data to examine factors that moderate educator beliefs and ultimately differentially impact implementation outcomes.

Although the degree and ways in which educator beliefs and attitudes contribute to the adoption and implementation of school-based EBPs still remains somewhat unclear, this study provided preliminary support for their role and malleability during training and coaching efforts. This research, along with other existing studies (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2012), suggests that educator beliefs should be included as key variables in theoretical models attempting to predict successful installation of EBPs and as strategies in approaches designed to improve implementation success.

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## References

Aarons, G. A. (2006). Transformational and transactional leadership: Association with attitudes toward evidence-based practice. *Psychiatric Services, 57*(8), 1162–1169.

Aarons, G. A., Erhart, M. G., & Farahnak, L. R. (2014). The implementation leadership scale (ILS): Development of a brief measure of unit level implementation leadership. *Implementation Science, 9*(1), 45.

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research, 38*, 4–23.

Aarons, G. A., & Palinkas, L. A. (2007). Implementation of evidence-based practice in child welfare: Service provider perspectives. *Administration and Policy in Mental Health & Mental Health Services Research, 34*, 411–419.

Aarons, G. A., & Sawitzky, A. C. (2006). Organizational climate partially mediates the effect of culture on work attitudes and staff turnover in mental health services. *Administration and Policy in Mental Health and Mental Health Services Research, 33*(3), 289–301.

Ajzen, I., & Manstead, A. S. R. (2007). Changing health-related behaviors: An approach based on the theory of planned behavior. In K. van den Bos, M. Hewstone, J. de Wit, H. Schut, & M. Stroebe (Eds.), *The scope of social psychology: Theory and applications* (pp. 43–63). New York: Psychology Press.

Aronson, E. (1999). The power of self-persuasion. *American Psychologist, 54*, 875–884.

Atkins, M. S., Frazier, S. L., Leathers, S. J., Graczyk, P. A., Talbott, E., Jakobsons, L., … & Bell, C. C. (2008). Teacher key opinion leaders and mental health consultation in low-income urban schools. *Journal of Consulting and Clinical Psychology, 76*, 905–908.

Beesdo-Baum, K., & Knappe, S. (2012). Developmental epidemiology of anxiety disorders. *Child and Adolescent Psychiatric Clinics of North America, 21*(3), 457–478.

Bowden, R. G., Lanning, B. A., Pippin, G., & Tanner, Jr., J. (2003). Teachers' attitudes towards abstinence-only sex education curricula. *Education*, *123*(4), 780–788.

Brackett, M. A., Rivers, S. E., Reyes, M. R., & Salovey, P. (2012). Enhancing academic performance and social and emotional competence with the RULER feeling words curriculum. *Learning and Individual Differences, 22*(2), 218–224.

Bradshaw, C. P., Pas, E. T., Bloom, J., Barrett, S., Hershfeldt, P., Alexander, A., … & Leaf, P. J. (2012). A state-wide partnership to promote safe and supportive schools: The PBIS Maryland initiative. *Administration and Policy in Mental Health,* 39(4), 225–237.

Browning-Wright, D. & Cook, C. R. (2008). *Behavior and RTI: Integrating behavioral and academic support* [PowerPoint Slides]. Retrieved from http://www.pent.ca.gov/pos/rti/behavioranrti_wright-cook.pdf.

Cialdini, R. (2001). Harnessing the science of persuasion. *Harvard Business Review, 79*, 72–79.

Cialdini, R. (2009). *Influence: Science and practice* (5th ed.). Pearson: Boston.

Cook, C. R. (2013). Measuring implementation of a comprehensive, integrated MTSS framework targeting student behavior. Paper presented at the National Association of School Psychologists Annual Conference in Washington, DC.

Cook, C. R., Burns, M., Browning-Wright, D., & Gresham, F. M. (2010a). *Transforming school psychology in the RTI era: A guide for administrators and school psychologists*. Palm Beach: LRP Publications.

Cook, C. R., Mayer, G. R., Browning-White, D., Kraemer, B., Gale, B., & Wallace, M. D. (2012). Exploring the link between evidence-based quality of behavior intervention plans, treatment integrity and student outcomes under natural educational conditions. *The Journal of Special Education, 46*, 3–16.

Cook, C. R., Volpe, R. J., & Livanis, A. (2010b). Constructing a roadmap for future universal screening research beyond academics. *Assessment for Effective Intervention, 35*, 197–205.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*, 837–844.

Dart, E. H., Cook, C. R., Collins, T. A., Gresham, F. M., & Chenier, J. S. (2012). Test-driving interventions to increase treatment integrity and student outcomes. *School Psychology Review, 41*(4), 467–481.

Domitrovich, C. E., Bradshaw, C. P., Greenberg, M. T., Embry, D., Poduska, J. M., & Ialongo, N. S. (2010). Integrated models of school-based prevention: Logic and theory. *Psychology in the Schools, 47*, 71–88.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405–432.

Dusenbury, L., Brannigan, R., Hansen, W. B., Walsh, J., & Falco, M. (2005). Quality of implementation: Developing measures crucial to understanding the diffusion of preventive interventions. *Health Education Research, 20*(3), 308–313.

Eccles, M., Grimshaw, J., Walker, A., Johnston, M., & Pitts, N. (2005). Changing the behaviour of healthcare professionals: The use of theory in promoting the uptake of research findings. *Journal of Clinical Epidemiology, 58*, 107–112.

Eccles, R., Pedersen, A., Regberg, D., Tulento, H., Borum, P., & Stjarne, P. (2007). Efficacy and safety of topical combinations of ipratropium and xylometazoline for the treatment of symptoms of runny nose and nasal congestion associated with acute upper respiratory tract infection. *American Journal of Rhinolology, 21*(1), 40–45.

Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., … & Shriver, T. P. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.

Feifer, C., Ornstein, S. M., Jenkins, R. G., Wessell, A. M., Corley, S. T., Nemeth, L. S., … & Liszka, H. (2006). The logic behind a multi-method intervention to improve adherence to clinical practice guidelines in a nationwide network of primary care practices. *Evaluation and the Health Professions.* 29(1), 65–88.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fishbein, M., Triandis, H. C., Kanfer, F. H., Becker, M., Middlestadt, S. E., & Eichler, A. (2001). Factors influencing behavior and behavior change. In A. Baum, T. A. Revenson, & J. E. Singer (Eds.), *Handbook of health psychology*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Fixsen, D. L., & Blase, K. A. (1993). Creating new realities: Program development and dissemination. *Journal of Applied Behavior Analysis, 26*, 597–615.

Fixsen, D. L., Blase, K. A., Naoom, S. F., & Wallace, F. (2009). Core implementation components. *Research on Social Work Practice, 19*, 531–540.

Forman, S. G., Fagley, N. S., Chu, B. C., & Walkup, J. T. (2012). Factors influencing school psychologists' willingness to implement interventions. *School Mental Health, 4*, 207–218.

Forman, S. G., Shapiro, E. S., Codding, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A., … & Stoiber, K. C. (2013). *Implementation science and school psychology*, 28(2), 77–100. doi:10.1037/spq0000019.

Gonzalez, J. E., Nelson, J. R., Gutkin, T. B., & Shwery, C. S. (2004). Teacher resistance to school-based consultation with school psychologists: A survey of teacher perceptions. *Journal of Emotional and Behavioral Disorders, 12*, 30–37.

Goodman, A., Joyce, R., & Smith, J. P. (2011). The long shadow cast by childhood physical and mental problems on adult life. *Proceedings of the National Academy of Sciences, 108*, 6032–6037.

Guskey, T. R. (1986). Staff developmental and the process of teacher change. *Educational Researcher, 15*(5), 5–12.

Haney, J. J., Czerniak, C. M., & Lumpe, A. T. (1996). Teacher beliefs and intentions regarding the implementation of science education reform strands. *Journal of Research in Science Teaching, 33*, 971–993.

Haskins, R., & Loeb, S. (2007). A plan to improve the quality of teaching in American schools. *Future of Children, 17*(1), 1–8.

Horner, R. H., Todd, A. W., Lewis-Palmer, T., Irvin, L. K., Sugai, G., & Boland, J. B. (2004). The school-wide evaluation tool (SET): A research instrument for assessing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 6*(1), 3–12.

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Kincaid, D., Childs, K., Blase, K. A., & Wallace, F. (2007). Identifying barriers and facilitators in implementing school-wide positive behavior support. *Journal of Positive Behavior Interventions, 9*, 174–184.

Kretlow, A. G., & Bartholomew, C. C. (2010). Using coaching to improve the fidelity of evidence-based practices: A review of studies. *Teacher Education and Special Education, 33*, 279–299.

Lyon, A. R., Stirman, S. W., Kerns, S. E. U., & Bruns, E. J. (2011). Developing the mental health workforce: Review and application of training strategies from multiple disciplines. *Administration and Policy in Mental Health and Mental Health Services Research, 38*, 238–253.

Maag, J. W. (2001). Management of surface behavior: A new look at an old approach. *Counseling and Human Development, 33*(9), 1–10.

Nelson, T. D., & Steele, R. F. (2007). Predictors of practitioner self-reported use of evidence-based practices: Practitioner training, clinical setting, and attitudes toward research. *Administration and Policy in Mental Health and Mental Health Services Research, 34*, 319–330.

Nunnally, J. S., & Bernstein, I. H. (1994). *Psychological theory* (3rd ed.). New York: McGraw-Hillrobust.

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Foundations for organizational science: Organizational citizenship behavior: Its nature, antecedents, and consequences*. Thousand Oaks, CA: SAGE.

Owens, D. K., Lohr, K. N., Atkins, D., Treadwell, J. R., Reston, J. T., Bass, E. B., … & Helfand, M. (2014). Grading the strength of a body of evidence when comparing medical interventions: AHRQ and the effective health care program. In Agency for Healthcare Research and Quality. *Methods Guide for Comparative Effectiveness Reviews*: Rockville, MD.

Pancucci, S. (2007). Train the trainer: The bricks in the learning community scaffold of professional development. *International Journal of Humanities and Social Science, 2*(1), 14–21.

Parcel, G. S., O'Hara-Tompkins, N. M., Harrist, R. B., & Basen-Engquist, K. M. (1995). Diffusion of an effective tobacco prevention program. Part II: Evaluation of the adoption phase. *Center for Health Promotion Research and Development, 10*(3), 297–307.

Penuel, W., Fishman, B., Yamaguchi, R., & Gallagher, L. (2007). What makes professional development effective? Strategies that foster curriculum implementation. *American Educational Research Journal, 44*(4), 921–958.

Powell, B. J., McMillen, J. C., Proctor, E. K., Carpenter, C. R., Griffey, R. T, Bunger, A. C., … & York, J. L. (2012). A compilation of strategies for implementing clinical innovations in health and mental health. *Medical Care Research and Review*, 69(2), 123–157.

Pratkanis, A. R. (2007). *The science of social influence: Advances and future progress*. New York: Psychology Press.

Slavin, R. (2002). Evidence-based education policies: Transforming educational practice and research. *Educational Researcher, 31*(7), 15–21.

Sprague, J., Cook, C. R., Browning-Wright, D., & Sadler, C. (2008). *Response to intervention for behavior: Integrating academic and behavior supports*. Palm Beach: LRP Publications.

Strein, W., Hoagwood, K., & Cohn, A. (2003). School psychology: A public health perspective: Prevention, populations, and system change. *Journal of School Psychology, 41*, 23–38.

Sugai, G., Horner, R. H., Dunlap, G., Hieneman, M., Lewis, T. J., Nelson, C. M., … & Ruef, M. (2000). Applying positive behavior support and functional behavioral assessment in schools. *Journal of Positive Behavior Interventions, 2*(3), 131–143.

Sundle, J., Cialdini, R., Griskevicius, V., & Kenrick, D. (2012). The world's (truly) oldest profession: Social influence in evolutionary perspective. *Social Influence, 7*, 134–153.

Trout, A. K., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the academic status of children with emotional and behavioral disorders: A review of the literature from 1961 to 2000. *Journal of Emotional and Behavioral Disorders, 11*(4), 198.