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Secondary Teachers' Self-Efficacy During Initial Implementation of Comprehensive, Integrated, Three-Tiered Models

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Abstract

We examined educators' sense of efficacy and burnout within comprehensive, integrated, three-tiered (Ci3T) models of prevention implemented in four middle and two high schools. At the time of this study, schools had completed 2 years of implementing Ci3T models as part of a larger district initiative. We examined how educators were faring with a specific interest in their well-being. We explored four sets of educator-reported variables: Ci3T treatment integrity, Ci3T social validity, sense of efficacy, and feelings related to burnout. Results indicated educators experienced emotional exhaustion nearly identical to a national sample; however, depersonalization and personal accomplishment scores revealed positive and moderate-to-large-magnitude differences compared with a national sample. Moreover, educators reported higher levels of efficacy related to instructional strategies and classroom management than a national sample. Higher self-reported levels of Ci3T treatment integrity were associated with increased levels of efficacy related to the efficacy subscales of Student Engagement, Instructional Strategies, and Classroom Management. We conclude with a discussion of limitations and directions for future inquiry.

Keywords

Ci3T, tiered systems, self-efficacy, burnout

Middle and high school teachers experience a range of challenging job demands including difficult working conditions, role ambiguity, and frequent leadership turnover (Burkhauser et al., 2012). Navigating their professional environment can also affect their ability to meet their most important charge—meeting the educational needs of a diverse range of students, including individualizing academic content, managing behavior, and supporting social-emotional development (Skaalvik & Skaalvik, 2007). Tiered systems can assist educators by offering clearly defined roles, school-wide policies and procedures, and a collaborative structure for general and special educators to collectively support students' learning and well-being as well as educators' well-being (Kyriacou, 2001; Lane, Menzies, et al., 2013). To address these challenges, schools have adopted tiered systems such as Positive Behavior Interventions and Supports (PBIS; Sugai & Horner, 2002), Response to Intervention (RTI; Fuchs et al., 2010), Multi-Tiered System of Supports (MTSS; Johnson & Mellard, 2014), Interconnected Systems Framework (ISF; Barrett et al., 2013), and comprehensive, integrated, three-tiered models (Ci3T; Lane et al., 2019). These models offer a school-wide structure to provide educators with clarity of roles, prioritize evidence-based practices to promote all students' learning, use data to proactively identify students who exhibit additional needs, and inform targeted interventions to address identified needs (Sugai & Horner, 2002).

Evidence suggests implementation of tiered systems at the elementary level is associated with improvements in

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educators' commitment to students and positive feelings toward colleagues, and it may facilitate improved teacher efficacy and decrease risk for burnout (Bradshaw et al., 2009; Kelm & McIntosh, 2012; Oakes et al., 2020; Ross et al., 2012; Ross & Horner, 2007). These findings are consistent with characteristics of healthy schools (Kyriacou, 2001). As school leaders adopt tiered systems, the research community is charged with examining the relation between implementation and educator outcomes. Research is critical for identifying how such school policies affect the school environment and student outcomes. In this study, we extend this line of inquiry by examining how secondary school educators fared after implementing a Ci3T model for 2 years. We examined indicators of educator well-being—efficacy and burnout—within the context of Ci3T implementation efforts, replicating a study of teacher well-being in Ci3T models of prevention implemented at the elementary level (Oakes et al., 2020).

Ci3T Models of Prevention

The Institute of Education Sciences (IES, 2017) and the research community have recognized the need for integrated approaches to promote educational outcomes (e.g., Lewis et al., 2017). The Ci3T model provides a framework for integrating tiered prevention models to address academic, behavioral, and social-emotional learning domains. As with most tiered prevention systems, Tier 1 (primary) prevention efforts are expected to meet most students' needs. Tier 2 (secondary) supports are additive and provide for the needs of 10% to 15% of students, and Tier 3 (tertiary) preventions are intended for students with the most intensive educational needs (3%–5%). The Ci3T model relies on the use of evidence-based programs, practices, and interventions to meet students' diverse academic, behavioral, and social skill needs at each level (Lane et al., 2016).

Foundational to the Ci3T model is the use of data to inform instructional decisions and target professional learning opportunities. Educators examine multiple sources of data collectively for decision-making. To examine instruction, educators analyze behavior screening data collected three times per year (fall, winter, and spring), academic data such as formative assessments and current academic progress (grade point average and credit accrual), attendance, and office discipline referrals to detect students who may require Tier 2 or 3 supports in addition to Tier 1. Using an integrated approach, educators gain a comprehensive understanding of students' educational needs. For example, a ninth-grade student who is performing below expectations in history and exhibits moderate risk for internalizing behaviors may participate in a study skills intervention and utilize a self-monitoring checklist to monitor their performance (with the teacher taking into account his or her level of treatment integrity of Tier 1 practices; Lane et al., 2016). Using multiple sources of data allows for a better understanding of student need as well as for planning integrated interventions.

Ci3T Leadership Teams and educators also use data to monitor implementation efforts. In particular, they examine treatment integrity data (i.e., the extent to which the plan is being implemented as designed) and social validity data (i.e., opinions about the goals, procedures, and outcomes; Wolf, 1978). Implementation data are collected twice per year (fall and spring) to support decision-making for instruction and professional learning. Monitoring for high-fidelity implementation allows school leadership teams to ensure all educators have the professional development they need to promote educational outcomes for students. This way data are used to support both students and educators. Ci3T Leadership Teams at the school site and district level are attentive to Ci3T implementation efforts and the well-being of teachers who work in Ci3T models as teachers' sense of efficacy is related to their effectiveness and persistence in promoting positive school outcomes for all students (Jennings & Greenberg, 2009).

Teachers' Self-Efficacy and Burnout in Tiered Systems

Difficulty in meeting students' educational needs can impede teachers' sense of efficacy, or the degree to which teachers feel confident in their ability to navigate effectively their environment to teach, engage, and manage student behavior (Bandura, 1997; Klassen & Chiu, 2010). Stress arising from classroom interactions and challenges (e.g., students' varying academic needs, behavior challenges) is linked with lower teacher self-efficacy for student engagement, classroom management, and instruction (Klassen & Chiu, 2010). Teacher self-efficacy is associated with a range of important outcomes, including teacher burnout and student achievement (Skaalvik & Skaalvik, 2017).

Similarly, high job demands are associated with high stress and when unmitigated can lead to burnout for teachers (Hakanen et al., 2006; Stoeber & Rennert, 2008). Burnout occurs when individuals' abilities to cope with work-related stressors are overwhelmed, leading them to experience one or more of the three core constructs of burnout: emotional exhaustion, depersonalization (i.e., cynical and emotionally withdrawn), and a lack of personal accomplishment (Maslach, 2003). Not only is teacher burnout negatively associated with teacher health and turnover, but students of teachers with burnout have worse academic and behavioral outcomes (Brunsting et al., 2014; Wong et al., 2017).

As mentioned, inquiry at the elementary level suggested implementation of tiered systems (e.g., PBIS, Ci3T) yielded promising outcomes not only for students but also for educators' well-being (e.g., Oakes et al.,

2013; Ross et al., 2012). Recently, Oakes et al. (2020) examined 120 educators' efficacy and burnout within Ci3T models, as implemented in 14 elementary schools in a Midwestern state. They examined year-end self-ratings to describe how teachers in schools with Ci3T prevention models were faring at the end of their second year of Ci3T implementation as part of a district-wide initiative. Findings suggested elementary educators experienced emotional exhaustion at levels comparable to national norms. Yet, depersonalization and personal accomplishment scores revealed favorable and large-magnitude differences compared with a national sample. In short, elementary educators in their second year of Ci3T implementation were less likely to report feeling withdrawn or detached from their students relative to national norms. Educators in this sample reported higher levels of efficacy related to instructional strategies and classroom management compared with the national sample. Furthermore, educators with higher self-reported levels of Ci3T treatment integrity reported a higher level of efficacy related to student engagement than those reporting lower levels of treatment integrity. Based on lessons learned at the elementary level, we sought to understand middle and high school teachers' efficacy at the same stage of Ci3T implementation.

Purpose

We conducted this descriptive study to extend this line of inquiry by replicating the Oakes et al. (2020) study for educators teaching students in Grades 6 to 12. Specifically, we examined the relation between implementation of Ci3T models of prevention in middle and high schools and educator well-being, as measured by burnout and efficacy. Research questions included the following:

Research Question 1 (RQ1): To what degree were a sample of educators implementing Ci3T as planned (i.e., with high treatment integrity) during the second year of Ci3T implementation as part of a district initiative?
Research Question 2 (RQ2): To what extent did these educators view their school-site Ci3T plans as socially valid in the spring semester of the second year of Ci3T implementation?
Research Question 3 (RQ3): When considering educators' well-being, to what degree did selected educators report feelings of burnout and efficacy?
Research Question 4 (RQ4): What was the relation between educators' reported levels of burnout, efficacy, social validity, and treatment integrity during the spring semester of their second year of Ci3T implementation? Moreover, to what extent did educators' levels of treatment integrity and social validity as well as demographics (e.g., gender, highest degree earned) predict efficacy and burnout?

Table 1. Participant Characteristics.

Variable and level	Total (N = 82)
Gender, *n* (%)	
Male	21 (25.61)
Female	61 (74.39)
Grade level taught, *n* (%)	
Sixth–eighth	53 (64.63)
Ninth–twelfth	29 (35.37)
Ethnicity, *n* (%)	
White	72 (87.80)
Hispanic	2 (2.44)
Black	0 (0.00)
American Indian/Alaska Native	1 (1.22)
Asian/Pacific Islander	3 (3.66)
Other	0 (0.00)
Assignment, *n* (%)	
General education teacher	57 (69.51)
Special education teacher	11 (13.41)
Related service provider	9 (10.98)
Staff	5 (6.10)
Highest degree obtained, *n* (%)	
High school diploma	2 (2.44)
Bachelor's degree	13 (15.85)
Master's degree	42 (51.22)
Master's degree + 30 credits	21 (25.61)
Doctoral degree	4 (4.88)
Age, *M* (*SD*)	43.68 (10.99)
Years of teaching experience, *M* (*SD*)	16.51 (9.75)
Years of teaching experience at current school level, *M* (*SD*)	10.32 (8.02)

Note. Percentages based on the number of participants who provided data. Age range: 24–65 years. Years of teaching experience ranged from 2 to 41 years. Years of teaching experience at current school level ranged from 1 to 40.

Method

Participants and Setting

Participants included 82 educators from four middle (sixth through eighth grades) and two high (ninth through 12th grades) schools in one Midwestern school district (see Tables 1 and 2 for participant and school characteristics). Most participants were female (n = 61; 74.39%), White (n = 72; 87.80%), and general educators (n = 57; 69.51%). Participants ranged from 24 to 65 years of age (M = 43.68, SD = 10.99). Participants were experienced (M = 16.51 years of teaching; SD = 9.75) in education, and more than 75% had earned a master's degree. Many participants had completed a course or professional development in classroom management (n = 70; 86.42%), academic screening (n = 68; 82.93%), or behavior screening (n = 71; 86.59%).

Table 2. School Characteristics.

Variable	School					
	MS 1	MS 2	MS 3	MS 4	HS 1	HS 2
Enrollment,[a] *n*	611	478	645	631	1,758	1,615
Attendance rate,[a] %	94.20	93.50	95.10	94.60	92.60	92.30
State assessment,[a] % (ELA/M)	30.22	30.53	55.63	45.14	49.06	30.98
Title I school[b]	Yes	Yes	No	No	No	Yes
Economic disadvantaged,[a] %	52.3	57.9	19.3	35.4	28.36	42.30
Students with disabilities[a] %	17.54	16.28	8.87	12.99	10.44	13.98

Note. ELA = English language arts; M = mathematics; MS = middle school; HS = high school; Locale = City Small for all schools.
[a]State school report card data 2016–2017. [b]National Center for Education Statistics, Common Core Data 2016–2017.

Procedures

Similar to Oakes et al. (2020), all six schools were concluding their second year of Ci3T implementation and in the final phases of an IES researcher–practitioner partnership grant. Each school had a Ci3T Leadership Team, with membership typically including the principal, general education teachers (e.g., two), special education teacher, parent, student(s), two to three staff of choice (e.g., counselor, school psychologist), and a district coach. Ci3T Leadership Teams engaged in a Ci3T professional learning series over the 2014–2015 academic year to design their Ci3T model (see Lane et al., 2016, for the building process). Each Ci3T Leadership Team launched their Ci3T efforts the following academic year with support from their district Ci3T leadership team and university partners. As part of implementation efforts, treatment integrity and social validity data were collected in fall and spring of each implementation year to determine the extent to which each school implemented Ci3T as designed and to assess stakeholders' views through the year (description of measures to follow). Practitioner-friendly Ci3T implementation report summarizing treatment integrity and social validity data were prepared and shared with district and school-site Ci3T Leadership Teams in fall and spring. These data were used to inform professional learning offerings and shape implementation efforts (Lane et al., 2016).

Following IES funding notification, we secured approval from university and district partners. Then after 2 years of Ci3T implementation we invited up to 25 educators from each of the four middle schools and up to 50 educators from each of the two high schools ($M = 24.83$, $SD = 7.60$, range = 17–39) to participate in the current descriptive study. Educators from each secondary school received an email invitation to attend an informational meeting if they met three criteria: (a) were a participant in the main study examining implementation of Ci3T and (b) completed two measures during the second year of implementation: the Ci3T Treatment Integrity: Teacher Self-Report (Ci3T TI: TSR; Lane, 2009) to measure treatment integrity and the Primary Intervention Rating Scale (PIRS; Lane et al., 2002) to assess stakeholders' social validity for the spring and/or fall time point. At two middle schools where more than 25 educators met criteria, we used a random number generator formula to randomly select 25 individuals to invite. Also, three educators at the district's college and career center (CCC) who were not already invited as faculty or staff at one of the middle or high schools were invited.

We held seven informational meetings (one at each school and the CCC) to explain the study, answer questions, and obtain informed consent (see Table 2). Of the 152 invited educators who provided instruction to students, 82 participated (53.95%) by completing two measures at the end of the meeting (or left in their school mailboxes with an envelope for secure return): the Maslach Burnout Inventory (MBI; Maslach et al., 1996) Educators Survey and Teachers' Sense of Efficacy Scale (TSES long form; Tschannen-Moran & Woolfolk Hoy, 2001).

Measures

Ci3T TI: TSR. The Ci3T TI: TSR (Lane, 2009) is an educator-completed assessment of treatment integrity of primary (Tier 1) prevention efforts. The measure includes 38 items constituting three subscales assessing implementation of the core components of primary prevention: Procedures for Teaching (16 items; e.g., *Did I differentiate instruction [academic tasks] as needed?*), Reinforcing (10 items; e.g., *Did I give tickets to students demonstrating schoolwide expectations?*), and Monitoring (12 items; e.g., *Did I complete behavior screeners at each time requested by my principal or Ci3T team?*). Educators independently complete each item using a 4-point Likert-type scale from 0 = *not at all*, 1 = *some of the time*, 2 = *most of the time*, to 3 = *all of the time*. A percentage score is computed for each subscale by adding individual items, dividing by the number of points possible (adjusting for any missing items), then multiplying by 100. Items not rated are removed from the denominator of total possible points. A total percentage score is computed by adding all completed items, dividing

by the total possible score, and multiplying by 100. Thus, each educator has four scores (three subscales and one overall). Treatment integrity at the school level is calculated by computing the mean of educator scores (for the three subscales and total score). Ci3T Leadership Teams review these summary statistics and share progress with faculty and staff as part of regular school practices. Educators complete the Ci3T TI: TSR twice a year (fall and spring), with initial psychometric findings suggesting each subscale demonstrates adequate-to-good internal consistency (α = .83, .76, .85 for Procedures for Teaching, Reinforcing, and Monitoring, respectively; Bruhn, 2011; alpha coefficients for spring scores for the current sample are as follows: .88, .74, and .90, respectively). For this study, we focused solely on overall treatment integrity at the individual level in relation to teacher well-being.

PIRS. Adapted from Witt and Elliott's (1985) Intervention Rating Profile-15, the PIRS (Lane et al., 2002) measures educators' views of the primary (Tier 1) plan: social significance of goals, social acceptability of procedures, and the probability the intervention will produce socially important outcomes. Educators complete 17 items using a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating higher acceptability. A total score is calculated by adding individual items (range = 17–102). Initial inquiry of PIRS psychometric properties yielded internal consistency estimates that range from .88 to .98, suggesting adequate psychometric properties (Lane et al., 2009). Similarly, internal consistency estimates for spring scores for the current sample is .90, also suggesting adequate psychometric properties. Like the Ci3T TI: TSR, educators complete the PIRS in fall and spring annually during implementation years

MBI–Educators Survey. The MBI–Educators Survey (Maslach et al., 1996) is an educator-completed measure of teacher burnout, with 22 items yielding three subscales: Emotional Exhaustion (nine items), Depersonalization (five items), and Personal Accomplishment (eight items). The Emotional Exhaustion subscale features feelings of being exhausted or emotionally overwhelmed by work. The Depersonalization subscale features the absence of feelings as well as impersonal responses toward others. The Personal Accomplishment subscale features feelings of success and competence with respect to work. Educators use a 7-point Likert-type scale ranging from 0 (*never*) to 6 (*every day*) to indicate the frequency of their feelings. The technical manual includes procedures for computing mean scores as well as categorical (low, moderate, high) scores based on a national sample (see technical manual for descriptive characteristics) of 4,163 primary and secondary school teachers, with internal consistency estimates between .76 and .90 in the original sample. MBI alpha coefficients for the current sample were comparable: Emotional Exhaustion = .93, Depersonalization = .78, and Personal Accomplishment = .83.

TSES. The TSES long form (Tschannen-Moran & Woolfolk Hoy, 2001) is a teacher-completed measure of efficacy. Educators rate 24 items using a 9-point Likert-type scale with anchors 1 (*nothing*), 3 (*very little*), 5 (*some influence*), 7 (*quite a bit*), and 9 (*a great deal*). The TSES includes three subscales with eight items each: Efficacy for Student Engagement, Efficacy for Instructional Strategies, and Efficacy for Classroom Management. The total score ranges from 24 to 216 and subscale scores range from 8 to 72, with higher scores suggesting higher levels of efficacy. Internal consistency estimates reported by developers in the technical manual suggest adequate reliability, reporting a coefficient alpha of .94 (total score; subscale alphas .87–.90). Alpha coefficients for the current sample were comparable (.85–.89): Student Engagement = .85, Instructional Strategies =.86, and Classroom Management = .89.

Design and Analysis

This descriptive study followed the same data analytic plan of Oakes, Lane et al. (2019) at the elementary level and extended the inquiry by Oakes and colleagues (2013) to explore teachers' sense of efficacy at the middle school level. Consistent with Oakes and colleagues' (2019) procedures, we computed descriptive statistics to examine relations between treatment integrity, social validity, burnout, and efficacy. More specifically, we detailed the specific data analytic plan for each research question as follows.

To answer RQ1 and RQ2, we computed mean scores for Ci3T TI: TSR and PIRS scores in fall and spring to measure treatment integrity (RQ1) and social validity (RQ2) for the overall sample. We conducted paired *t* tests for RQ1 and RQ2 to examine stability of treatment integrity and social validity scores between fall and spring for secondary schools. Given the unequal groups being compared, we computed effect sizes using Hedges's *g* formula to examine the magnitude of differences between fall and spring during the second year of implementation, using Cohen's (1988) recommendations for interpretation (.2, .5, and .8 indicating small, medium, and large effects, respectively).

To answer RQ3, we computed mean scores for burnout (Emotional Exhaustion, Depersonalization, and Personal Accomplishment) and efficacy (Efficacy for Student Engagement, Efficacy for Instructional Strategies, and Efficacy for Classroom Management) subscale scores for the overall sample. For the MBI, we compared sample mean scores with national samples similar to analyses reported by Oakes et al. (2013) and Ross et al. (2012),

reporting effect sizes to determine the magnitude of differences between samples. We placed educators into low, moderate, and high burnout categories using cut scores provided in the MBI Manual, third edition.

To answer RQ4 examining relations between variables, we began by computing correlation coefficients. Namely, we computed Pearson's correlations to compare continuous variables and Spearman's correlation coefficients to explore relations between dichotomous and continuous variables. To confirm data met assumptions required of regression models, we conducted a series of analyses to examine normality (i.e., skewness, kurtosis, and quantile-quantile [QQ]-plots). Specifically, we explored the normality of our outcome variables by calculating skewness and kurtosis for all subscales. Skewness and kurtosis estimates range from −1.17 to 1.67 and −0.20 to 5.53, respectively. As such, the assumption of normality for these regressions is justified. Residual plots show the residuals are randomly scattered with no discernable patterns. QQ-plots show approximate normality for all subscales. Next, we calculated intraclass correlations (ICCs) to determine the extent to which variability in the efficacy and burnout scores was explained by the nesting of teachers within schools for those who completed the Ci3T TI: TSR and PIRS in the spring. ICCs were 0, .02936, and .0569 for the Student Engagement, Instructional Strategies, and Classroom Management subscales of the TSES, respectively. ICCs were .1211, .0255, and 0 for the Emotional Exhaustion, Depersonalization, and Personal Accomplishment subscales of the MBI, respectively. Based on these findings, we utilized the Kenward–Roger correction to incorporate cluster adjusted standard errors in our regression modeling (McNeish & Stapleton, 2016). Then, still including only the participants who responded to all measures in spring, we conducted a series of multiple regression analyses to examine the degree to which treatment integrity, social validity, and educator demographic variables predicted efficacy and burnout subscale scores. In each model, demographic variables (e.g., gender, highest degree obtained), individual scores on the Ci3T TI: TSR and PIRS, and educator school level (middle or high) served as predictor variables. For the gender variable we coded male as the reference group.

Results

RQ1: Treatment Integrity

Respondents reported implementing their Ci3T plans with acceptable integrity in fall and spring, with respective mean scores of 74.58% (SD = 12.66) and 75.79% (SD = 14.13). Paired t-test results suggested no statistically significant differences in mean treatment integrity scores between fall and spring (p = .27). Effect size suggested a negligible increase (g = .09; see Table 3).

Table 3. Treatment Integrity and Social Validity: Mean Scores Over Time.

	Time		
	Fall *M* (*SD*) *n*	Spring *M* (*SD*) *n*	
Measure			Hedges's *g*
Ci3T Treatment Integrity: Teacher Self-Report	74.58 (12.66) 65	75.79 (14.13) 69	.09
Primary Intervention Rating Scale	82.96 (10.76) 63	80.02 (14.14) 66	−.23

Note. Ci3T = Comprehensive, Integrated, Three-tiered Model.

RQ2: Social Validity

Respondents reported a high level of social validity in fall and spring, with respective mean scores of 82.96% (SD = 10.76) and 80.02% (SD = 14.14). Paired t-test suggested no statistically significant differences in mean social validity scores between fall and spring (p = .66). Effect size suggested a small decline (g = −.23).

RQ3: Educators' Emotional Well-Being

Burnout. Inspection of mean and frequency scores indicated moderate-to-high levels of emotional exhaustion, with 32.93% of participants reporting moderate levels and 29.27% of participants reporting high levels (see Table 4). Fewer educators indicated moderate (17.07%) or high (3.66%) levels of depersonalization. Most teachers reported low levels of depersonalization (79.27%) and high levels of personal accomplishment (73.17%).

When comparing participants ratings to a national sample, there were very small-magnitude differences in Emotional Exhaustion scores (g = −.01). Yet, there were large-magnitude differences in Depersonalization (g = −.93) and Personal Accomplishment (g = .88) total scores, with participants in the current sample having more favorable outcomes (i.e., less depersonalization and higher sense of personal accomplishment; see Table 4).

Efficacy. Inspection of mean teacher efficacy scores indicated participants reported slightly higher levels of efficacy for Instructional Strategies (M = 7.59, SD = 0.91) and Classroom Management (M = 7.31, SD = 0.92) relative to efficacy of Student Engagement (M = 6.79, SD = 0.95).

When comparing participants to a national sample, there were small-to-medium magnitude differences in Student Engagement (g = −.47) and Instructional Strategies (g = .27) subscales. However, there were medium magnitude differences in Classroom Management (g = .57), with participants in the current sample having a higher sense of

Table 4. Burnout and Efficacy Descriptive Statistics Relative to National Samples.

Measure	Total sample	National sample	Hedges's *g*	95% CI
Emotional exhaustion				
Total, *M* (*SD*)	21.12 (11.35)	21.25 (11.01)	−.01	[–0.821, 0.561]
Low, *n* (%)	31 (37.80)			
Moderate, *n* (%)	27 (32.93)			
High, *n* (%)	24 (29.27)			
Depersonalization				
Total, *M* (*SD*)	5.29 (4.68)	11.00 (6.19)	−.93	[–6.097, –5.323]
Low, *n* (%)	65 (79.27)			
Moderate, *n* (%)	14 (17.07)			
High, *n* (%)	3 (3.66)			
Personal accomplishment				
Total, *M* (*SD*)	39.59 (5.92)	33.54 (6.89)	.88	[5.619, 6.481]
Low, *n* (%)	6 (7.32)			
Moderate, *n* (%)	16 (19.51)			
High, *n* (%)	60 (73.17)			
Efficacy, *M* (*SD*)				
Student Engagement	6.79 (0.95)	7.3 (1.1)	−.47	[–0.578, –0.442]
Instructional Strategies	7.59 (0.91)	7.3 (1.1)	.27	[0.223, 0.357]
Classroom Management	7.31 (0.92)	6.7 (1.1)	.57	[0.543, 0.677]

Note. Emotional Exhaustion, Depersonalization, and Personal Accomplishment refer to subscales of the *Maslach Burnout Inventory*–Educators' Survey (Maslach et al., 1996). The Emotional Exhaustion subscale ranges from 0 to 54; Depersonalization ranges from 0 to 30; Personal Accomplishment ranges from 0 to 48. National norms presented for sample of teachers from 1996 ($N = 4{,}163$). *The Teachers' Sense of Efficacy Scale* (TSES; Tschannen-Moran & Woolfolk Hoy, 1998) long form was used to measure efficacy. Efficacy range = 1 to 9, with higher scores indicating higher efficacy. Comparisons for the TSES were based on a sample of 410 educators (Tschannen-Moran & Woolfolk Hoy, 2001).

efficacy related to classroom management compared with the national sample.

RQ4: Relation Between Constructs

Models consisting of demographic variables alongside treatment integrity and social validity scores were not predictive of any burnout subscale scores (see Table 6). However, models consisting of the same predictor variables included one statistically significant predictor across the three teacher efficacy subscales: Student Engagement (Ci3T TI: TSR $B = 0.03315$, $p = .0008$), Instructional Strategies (Ci3T TI: TSR $B = 0.03834$, $p = < .0001$), and Classroom Management (Ci3T TI: TSR $B = 0.03609$, $p = .0002$). In each instance, higher treatment integrity in spring was positively associated with teacher efficacy scores for Student Engagement, Instructional Strategies, and Classroom Management (see Tables 5 and 6).

Discussion

In addition to creating positive, productive learning environments for K–12 students, tiered prevention systems such as the Ci3T model hold promise for teacher well-being as evidenced by enhanced self-efficacy and reduced levels of burnout relative to MBI national norms (e.g., Oakes et al., 2013, 2020). As suggested by Oakes et al. (2020), tiered systems with processes for data-informed decision-making enable educators to use student-level data (e.g., academic indicators, behavior screening) and educator-level data (e.g., treatment integrity, social validity) to make wise decisions when connecting students to relevant Tier 2 and 3 supports. These data are also important in customizing professional learning opportunities for adults.

The iterative feedback loop in which social validity data are used to inform professional learning efforts to facilitate high-quality Ci3T implementation provides an important voice for all educators. The intent of collecting and interpreting these educator-level data is to ensure their views are influencing implementation of the tiered system to support student success as well as their own emotional well-being (e.g., improving their self-efficacy and mitigating stressors; Oakes et al., 2020; Ross et al., 2012). We conducted this study with middle and high school educators concluding their second year of implementing Ci3T as part of an IES funded partnership grant to determine whether the benefits to secondary-level educators were comparable with benefits experienced by elementary educators as reported by Oakes et al. (2020). As discussed below, lessons learned suggest very similar outcomes: middle and high school educators

Table 5. Intercorrelations.

Variable	1	2	3	4	5	6	7	8	9	10
1. Emotional Exhaustion	1.00									
2. Depersonalization	.68 <.0001 82	1.00								
3. Personal Accomplishment	−.32 .0038 82	−.47 <.0001 82	1.00							
4. Student Engagement	−.17 .1330 82	−.27 .0143 82	.52 <.0001 82	1.00						
5. Instructional Strategies	−.26 .0180 81	−.19 .0879 81	.39 .0004 81	.66 <.0001 81	1.00					
6. Classroom Management	−.23 .0356 82	−.20 .0773 82	.47 <.0001 82	.70 <.0001 82	.82 <.0001 81	1.00				
7. Ci3T TI: TSR (spring)	−.24 .0426 69	−.16 .1801 69	.29 .0173 69	.45 .0001 69	.56 <.0001 69	.52 <.0001 69	1.00			
8. PIRS (spring)	−.20 .1023 66	−.25 .0432 66	.11 .3611 66	.24 .0548 66	.21 .0891 66	.27 .0292 66	.44 .0002 66	1.00		
9. Educator gender	.16 .1392 82	.07 .5151 82	−.12 .2743 82	−.03 .7666 82	−.16 .1620 81	−.23 .0368 82	−.21 .0801 69	−.12 .3437 66	1.00	
10. Highest degree earned	.04 .7183 82	.04 .6963 82	.13 .2480 82	.12 .2826 82	.22 .0528 81	.14 .2091 82	.30 .0133 69	−.09 .4733 66	−.11 .3411 82	1.00

Note. Pearson's correlation coefficients, *p* value, and *n* are presented for each correlation between continuous variables. Spearman's correlation coefficients are presented for correlations between continuous and dichotomous variables (i.e., educator gender and highest degree earned). Ci3T = Comprehensive, Integrated, Three-tiered Model; Ci3T TI: TSR = Ci3T Treatment Integrity: Teacher Self-Report; PIRS = Primary Intervention Rating Scale.

are faring well in Ci3T models of prevention implemented with integrity.

Implementation: Treatment Integrity and Social Validity

Similar to findings at the elementary level (Oakes et al., 2020), fall and spring integrity scores were highly stable, with mean integrity scores in middle and high schools slightly lower than those reported at the elementary level. More specifically, mean treatment integrity scores were approximately 75% and 76% in fall and spring, respectively, at the middle and high school level compared with 81% and 80% at the elementary level.

Social validity ratings were nearly identical to fall and spring scores reported at the elementary level (82.96% and 80.02%, respectively, in middle and high schools). Secondary teachers reported a slight decline (effect size −.23) in social validity scores between fall and spring. Yet spring scores were still at 80%, suggesting respondents viewed the goals as socially significant, the procedures acceptable, and the outcomes important. These findings are encouraging, as sustained system-level change requires long-term commitment to high-quality implementation (Fixsen et al., 2005). And earlier lessons learned suggest social validity predicts teacher-reported treatment integrity (Lane et al., 2009). While not the focus of this study, it may be that systemic changes are associated with improvements in educators' sense of self-efficacy and reductions in burnout, which may affect educator retention as well as improve performance for students (Brunsting et al., 2014) and perhaps facilitate positive student–teacher interactions.

How Educators Fare: Well-Being

Middle and high school teachers reported very similar feelings regarding burnout to those reported by elementary teachers in the second year of implementing Ci3T. For example, although emotional exhaustion levels were comparable with the national norms, middle and high school teachers (like elementary teachers) reported substantially lower levels of depersonalization and higher levels of

Table 6. Variables Predicting Teacher Burnout and Self-Efficacy.

		Regression parameter			
Outcome variable	Predictor	*B*	*SE*	*t*	*p* value
Emotional Exhaustion	Intercept	30.7893	11.1582	2.76	.0077
	Ci3T TI: TSR	−0.2046	0.1130	−1.81	.0756
	PIRS	−0.05520	0.1144	−0.48	.6312
	Gender	4.3182	3.0357	1.42	.1602
	Highest degree obtained	2.3909	1.5591	1.53	.1305
Depersonalization	Intercept	9.3451	4.1405	2.26	.0281
	Ci3T TI: TSR	−0.04933	0.04265	−1.16	.2521
	PIRS	−0.04038	0.04253	−0.95	.3463
	Gender	−0.1557	1.1409	−0.14	.8919
	Highest degree obtained	0.9908	0.5851	1.69	.0956
Personal Accomplishment	Intercept	31.3615	5.2512	5.97	<.0001
	Ci3T TI: TSR	0.10252	0.05879	1.74	.0863
	PIRS	−0.00028	0.05552	−0.01	.9960
	Gender	−0.5966	1.5474	−0.39	.7012
	Highest degree obtained	0.3760	0.8015	0.47	.6407
Student Engagement	Intercept	4.41852	0.8341	5.30	<.0001
	Ci3T TI: TSR	0.03315	0.0093	3.55	.0008
	PIRS	0.00120	0.0088	0.14	.8925
	Gender	0.10761	0.2458	0.44	.6631
	Highest degree obtained	−0.10820	0.1273	−0.85	.3987
Instructional Strategies	Intercept	4.6331	0.8330	5.56	<.0001
	Ci3T TI: TSR	0.03834	0.0085	4.54	<.0001
	PIRS	−0.00079	0.0085	−0.09	.9268
	Gender	−0.01432	0.2269	−0.06	.9499
	Highest degree obtained	−0.04514	0.1165	0.39	.6998
Classroom Management	Intercept	4.7368	0.8734	5.42	<.0001
	Ci3T TI: TSR	0.03609	0.0089	4.01	.0002
	PIRS	0.001874	0.0089	0.21	.8354
	Gender	−0.2497	0.2406	−1.04	.3035
	Highest degree obtained	−0.05543	0.1234	−0.45	.6550

Note. Emotional Exhaustion, Depersonalization, and Personal Accomplishment refer to Maslach Burnout Inventory–Educators' Survey (Maslach et al., 1996) subscales scores. Student Engagement, Instructional Strategies, and Classroom Management refer to Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 1998) subscales scores. *SE* = standardized estimate; Ci3T = Comprehensive, Integrated, Three-tiered Model; Ci3T TI: TSR = Ci3T Treatment Integrity: Teacher Self-Report (Lane, 2009); PIRS = Primary Intervention Rating Scale (Lane et al., 2002).

personal accomplishment. In short, K-12 teachers in schools implementing Ci3T for 2 years fared better in terms of depersonalization and personal accomplishment relative to the national sample of educators. More than a third of participants rated their level of emotional exhaustion low (n = 31; 37.80%). However, more than half of participants rated their level of emotional exhaustion as moderate (n = 27; 32.93%) or high (n = 24; 29.27%). These findings are similar to those reported by middle school teachers implementing Ci3T models (Oakes et al., 2013), indicating small-magnitude differences between a national sample of educators as evidenced by an effect sizes of −.01 (Maslach et al., 1996).

On the two remaining MBI subscales, most educators reported low levels of depersonalization (n = 65; 79.27%) and high levels of personal accomplishment (n = 60; 73.17%). Similar to outcomes with elementary educators in their second year of Ci3T implementation with integrity, mean scores on the Depersonalization and Personal Accomplishment subscales indicated large-magnitude differences between the present sample and a national sample (g = −.93 and .88, respectively). Results replicated promising educator outcomes reported for those in schools implementing Ci3T prevention models. A higher sense of personal accomplishment and lower depersonalization may serve as protective factors against emotional exhaustion with sustained implementation in subsequent years (Jennings & Greenberg, 2009; Koeske & Koeske, 1989). Also, these circumstances may ultimately positively impact student–teacher interactions. We encourage future inquiry examining

the relation between these factors over time, eventually exploring the impact on student experiences.

In terms of middle and high school participants' sense of efficacy during the second year of Ci3T implementation, again results were very similar to self-efficacy ratings reported at the elementary level. Moreover, self-efficacy related to student engagement was below the national sample, but self-efficacy related to classroom management was above the national average with low-to-moderate effects evidenced by effect sizes of .27 for efficacy of instructional strategies and .57 for efficacy of classroom management. It is interesting to note members of the Ci3T district leadership team responded by prioritizing professional learning related to low-intensity supports to maximize student engagement and minimize disruption. For example, they featured a range of professional learning opportunities for educators to learn new or enhance existing strategies such as behavior-specific praise, precorrection, instructional choice, and increased opportunities to respond (Lane et al., 2015). Examples of avenues for professional learning included "ignite" sessions (10–15 min overview of strategies), hour-long sessions on specific strategies, and book studies conducted in small groups.

As was the case at the elementary level (Oakes et al., 2020), treatment integrity scores were predictive of educators' sense of efficacy regarding Student Engagement, Instructional Strategies, and Classroom Management. It is interesting to note, social validity scores were not predictive of any burnout or efficacy outcome measures although basic correlations suggested positive relations between spring social validity scores and depersonalization and efficacy of classroom management scores.

Correlational findings indicated a significant, positive relationship between implementing Ci3T with fidelity and Emotional Exhaustion ($p = .0426$), Personal Accomplishment ($p = .0173$), as well as efficacy of Student Engagement ($p = .0001$), Instructional Strategies ($p < .0001$), and Classroom Management ($p < .0001$). While treatment integrity scores did not predict burnout, it may be treatment integrity predicts teachers' self-efficacy which in turn predicts burnout over time. Or perhaps, self-efficacy moderates the impact of treatment integrity on burnout. We are hopeful inquiry with larger samples with longitudinal data will answer these questions, with sample sizes also enabling the use of multi-level models to examine relations between school- and educator-level variables—and perhaps even student-level variables.

For now, it may be that for middle and high school educators, implementing Ci3T procedures at Tier 1 (treatment integrity) serves as a protective factor, facilitating their own emotional well-being. These promising outcomes provide evidence for the potential of Ci3T to enhance educators' confidence to promote student performance by implementing effective instructional and classroom management strategies. This contrasts with findings of early inquiry which suggested no relation between treatment integrity of PBIS (Ross et al., 2012) and Ci3T models (Oakes et al., 2013) and teachers' sense of efficacy. We encourage cautious interpretation of these findings until additional replications studies are conducted.

Limitations and Future Inquiry

When interpreting results it is important to consider the following limitations. First, this study featured middle and high school educators from one geographic locale. While an acceptable sample size, we recommend caution when interpreting results and lessons learned until results are replicated with educators from other locales. Similarly, we encourage other investigators to explore the relation between burnout, efficacy, treatment integrity, and social validity with educators in additional phases of Ci3T implementation (e.g., during the first year of implementation; after full installation; Fixsen et al., 2005). In addition to attending to issues of generalizability of findings, we recommend this work be extended to examine the relations between these constructs and student performance as the ultimate goal is to support healthy outcomes for students and educators alike.

Second, as discussed by Oakes and colleagues (2019), it is important not to draw causal conclusions from descriptive studies. Although not a limitation, descriptive studies are often misinterpreted. In this study, we replicated the study conducted by Oakes et al. (2020) with elementary educators in their second year of implementing Ci3T. Namely, we drew comparison between outcomes in schools implementing Ci3T and a national sample to provide insights to potential impacts of Ci3T implementation and educator outcomes. Future inquiry examining mediating and moderating variables (as discussed above) will be important in understanding relations between these constructs. It may also be wise to consider the role of school-level variables such as classroom climate in better understanding these relations (Grayson & Alvarez, 2008; Ross et al., 2012). In addition, randomized controlled trials may provide an opportunity to examine the extent to which working within a tiered prevention model in secondary schools leads to decreased risk for burnout and increased self-efficacy.

Third, the MBI is a widely used, psychometrically sound burnout measure. Questions have been raised regarding the degree to which national norms may have shifted in the past decade. We encourage authors of the MBI to partner with research teams currently using the MBI to replicate earlier psychometric studies to provide the field with updated norms. With commitment to open science, we are hopeful data sets will be made available in a safe manner (e.g., adhering to guidelines provided in

protocols approved by institutional review boards) to enable this important work to move forward in a timely manner (Cook et al., 2019).

Fourth, another limitation is the use of self-reported treatment fidelity data. Self-reported data—although an important source of information—may be influenced by social desirability bias and inaccurate estimations. In some instances, self-report data may overestimate actual implementation and in other instances it may underestimate actual implementation (Debnam et al., 2015). Following procedures reported by Oakes et al. (2020), we mitigated possible social desirability influences by collecting and sharing treatment integrity data back to Ci3T Leadership Teams in a confidential manner. For example, we aggregated numerical data (e.g., reported means, minimum and maximum values) and reviewed open-ended responses to make certain participants did not identify themselves. If a respondent wrote "As the only school-counselor . . . ," we redacted the word "counselor." Self-reported treatment integrity may have varied from actual implementation because (a) data were included for only those who elected to complete the surveys (namely, the surveys were not required) and (b) all participants were in their second year of Ci3T implementation and still developing various strategies and practices. Nonetheless, treatment integrity scores did predict teacher efficacy. We encourage future inquiry to explore the relation between teachers' sense of efficacy and burnout relative to observational and self-reported treatment integrity data (Debnam et al., 2015).

In addition to these limitations and future considerations, we are also hopeful future inquiry will be conducted to examine the degree to which student–teacher interactions are related to various aspects of teachers' sense of self-efficacy and burnout. For example, it may be teachers who are less likely to depersonalize from their students are likely to have more positive student–teacher interactions. Understanding these and other relations may be useful in informing future treatment-outcome studies of teacher *and* students well-being in tiered systems.

Summary

We examined educators' sense of efficacy and burnout within Ci3T models of prevention implemented in four middle and two high schools at the end of their second year of implementation. Results of this replication study yielded highly similar findings as those reported in a sample of educators from 14 elementary schools concluding their second year of Ci3T implementation (Oakes et al., 2020). Specifically, in the current sample educators experienced emotional exhaustion at levels comparable with the national sample. Yet depersonalization and personal accomplishment scores revealed positive and moderate-to-large-magnitude differences compared with a national sample. Educators also reported higher levels of efficacy related to instructional strategies and classroom management than a national sample. Higher self-reported levels of Ci3T treatment integrity were associated with increased levels of efficacy related to Student Engagement, Instructional Strategies, and Classroom Management, explaining 27% of the variance on the latter two constructs.

Authors' Note

Opinions expressed herein are those of the authors and do not necessarily reflect the position of the U.S. Department of Education, and such endorsements should not be inferred.

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References

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.

Barrett, S., Eber, L., & Weist, M. (Eds.). (2013). *Advancing education effectiveness Interconnecting school mental health and school-wide positive behavior support*. Center for School Mental Health.

Bradshaw, C. P., Koth, C. W., Thornton, L. A., & Leaf, P. J. (2009). Altering school climate through school-wide positive behavioral interventions and supports: Findings from a group-randomized effectiveness trial. *Prevention Science*, *10*(2), 100–115. https://doi.org/10.1007/s11121-008-0114-9

Bruhn, A. L. (2011). *Measuring primary plan treatment integrity of comprehensive, integrated three-tiered prevention models*. [Doctoral dissertation, Vanderbilt University].

Brunsting, N. C., Sreckovic, M. A., & Lane, K. L. (2014). Special education teacher burnout: A synthesis of research from 1979 to 2013. *Education and Treatment of Children*, *37*(4), 681–711.

Burkhauser, S., Gates, S. M., Hamilton, L. S., & Ikemoto, G. S. (2012). *First-year principals in urban school districts: How actions and working conditions relate to outcomes*. RAND

Corporation. https://www.rand.org/pubs/technical_reports/TR1191.html

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Cook, B. G., Lloyd, J. W., & Therrien, W. J. (2019). Open science in the field of emotional and behavioral disorders. *Education and Treatment of Children, 42*(4), 579-600. https://doi.org/10.1353/etc.2019.0027

Debnam, K. J., Pas, E. T., Bottiani, J., Cash, A. H., & Bradshaw, C. P. (2015). An examination of the association between observed and self-reported culturally proficient teaching practices. *Psychology in the Schools*, *52*(6), 533-548. https://doi.org/10.1002/pits.21845

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (FMHI Publication No. 231). University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network. http://ctndisseminationlibrary.org/PDF/nirnmonograph.pdf

Fuchs, L. S., Fuchs, D., & Compton, D. L. (2010). Rethinking response to intervention at middle and high school. *School Psychology Review*, *39*(1), 22–28.

Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education*, *24*(5), 1349–1363. https://doi.org/10.1016/j.tate.2007.06.005

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*(6), 495–513.

Institute of Education Sciences. (2017). *Request for applications: Network grants*. U.S. Department of Education.

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*(1), 491–525.

Johnson, E. S., & Mellard, D. F. (2014). Multi-tiered system of supports for effective inclusion in secondary schools. In J. McLeskey, N. L. Waldron, F. Spooner, & B. Algozzine (Eds.), *Handbook of effective inclusive schools: Research and practice* (pp. 220–238). Routledge.

Kelm, J. L., & McIntosh, K. (2012). Effects of school-wide positive behavior support on teacher self-efficacy. *Psychology in the Schools*, *49*(2), 137–147. https://doi.org/10.1002/pits.20624

Klassen, R., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741–756. https://doi.org/10.1037/a0019237

Koeske, G. F., & Koeske, R. D. (1989). Work load and burnout: Can social support and perceived accomplishment help? *Social Work*, *34*(3), 243–248.

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, *53*, 27–35.

Lane, K. L. (2009). *Comprehensive, integrated three-tiered model of prevention: Treatment integrity teacher self-report and direct observation tool*. http://www.ci3t.org/measures

Lane, K. L., Kalberg, J. R., Bruhn, A. L., Driscoll, S. A., Wehby, J. H., & Elliott, S. N. (2009). Assessing social validity of school-wide positive behavior support plans: Evidence for the reliability and structure of the Primary Intervention Rating Scale. *School Psychology Review*, *38*(1), 135–144.

Lane, K. L., Menzies, H. M., Ennis, R. P., & Bezdek, J. (2013). School-wide systems to promote positive behaviors and facilitate instruction. *Journal of Curriculum and Instruction*, *7*, 6–31. https://doi.org/10.3776/joci.2013.v7n1p6-31

Lane, K. L., Menzies, H. M., Ennis, R. P., & Oakes, W. P. (2015). *Supporting behavior for school success: A step-by-step guide to key strategies*. Guilford Press.

Lane, K. L., Menzies, H. M., Oakes, W. P., & Kalberg, J. R. (2019). *Developing a schoolwide framework to prevent and manage learning and behavior problems* (2nd ed.). Guilford Press.

Lane, K. L., Oakes, W. P., Cantwell, E. D., & Royer, D. J. (2016). *Building and installing comprehensive, integrated, three-tiered (Ci3T) models of prevention: A practical guide to supporting school success*. KOI Education.

Lane, K. L., Robertson, E. J., & Wehby, J. H. (2002). *Primary Intervention Rating Scale* www.ci3t.org/measures

Lewis, T. J., McIntosh, K., Simonsen, B., Mitchell, B. S., & Hatton, H. L. (2017). *Schoolwide systems of positive behavior support: Implications for students at risk and with emotional/behavioral disorders*. AERA Open. https://doi.org/10.1177/2332858417711428

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, *12*(5), 189–192.

Maslach, C., Jackson, S. E., & Schwab, R. L. (1996). *MBI—Educators Survey—MBI-ES*. Mind Garden. www.mindgarden.com

McNeish, D., & Stapleton, L. M. (2016). Modeling clustered data with very few clusters. *Multivariate Behavioral Research*, *51*(4), 495–518. https://doi.org/10.1080/00273171.2016.1167008

Oakes, W. P., Lane, K. L., Jenkins, A., & Booker, B. B. (2013). Three-tiered models of prevention: Teacher efficacy and burnout. *Education and Treatment of Children*, *36*(4), 95–126. https://doi.org/10.1353/etc.2013.0037

Oakes, W. P., Lane, K. L., Royer, D. J., Menzies, H. M., Buckman, M. M., Brunsting, N. C., Cantwell, E. D., Schatschneider, C., & Lane, N. A. (2020). Elementary teachers' self-efficacy during initial implementation of comprehensive, integrated, three-tiered models of prevention. *Journal of Positive Behavior Interventions*. https://doi.org/10.1177/1098300720916718

Ross, S. W., & Horner, R. H. (2007). Teacher outcomes of schoolwide positive behavior support. *Teaching Exceptional Children Plus*, 3(6), Article 6. https://files.eric.ed.gov/fulltext/EJ967462.pdf

Ross, S. W., Romer, N., & Horner, R. H. (2012). Teacher well-being and the implementation of school-wide positive behavior interventions and supports. *Journal of Positive Behavior Interventions*, *14*(2), 118–128. https://doi.org/10.1177/1098300711413820

Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with perceived collective teacher efficacy and teacher burnout. *Journal of Educational*

Psychology, *99*(3), 611–625. https://doi.org/10.1037/0022-0663.99.3.611

Skaalvik, E. M., & Skaalvik, S. (2017). Motivated for teaching? Associations with school goal structure, teacher self-efficacy, job satisfaction, and emotional exhaustion. *Teaching and Teacher Education*, *67*(2), 152–160. https://doi.org/10.1016/j.tate.2017.06.006

Stoeber, J., & Rennert, D. (2008). Perfectionism in school teachers: Relations with stress appraisals, coping styles, and burnout. *Anxiety, Stress, and Coping*, *21*(1), 37–53. https://doi.org/10.1080/10615800701742461

Sugai, G., & Horner, R. (2002). The evolution of discipline practices: School-wide positive behavior supports. *Child & Family Behavior Therapy*, *24*(1–2), 23–50. https://doi.org/10.1300/J019v24n01_03

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783–805. https://doi.org/10.1016/s0742-051x(01)00036-1

Witt, J. C., & Elliott, S. N. (1985). Acceptability of classroom intervention strategies. In T. R. Kratochwill (Ed.), *Advances in school psychology* (Vol. 4, pp. 251–288). Lawrence Erlbaum.

Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 203-214. https://doi.org/10.1901/jaba.1978.11-203

Wong, V. W., Ruble, L. A., Yu, Y., & McGrew, J. H. (2017). Too stressed to teach? Teaching quality, student engagement, and IEP outcomes. *Exceptional Children*, *83*(4), 412–417.