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Investigating the relationships among positive behavior intervention and support, teacher burnout and student behavioral problems

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ABSTRACT

The positive behavior intervention and support (PBIS) framework was created to help schools and teachers deal with student behavior challenges. Many studies examine the effect of PBIS on factors related to students' education with little attention given to teacher outcomes such as teacher burnout. The study's purpose is to examine the direct and indirect relationship between PBIS-classroom systems (CS) and teacher burnout (TB) through the mediating variable student behavior problems (SB). This study also examines the relationship between SB and TB. The researchers collected data from 363 teachers within 95 K-12 schools across New York (79.3%) and New Jersey (20.7%) in the U.S.A. Structural equation modeling (SEM) was used for data analysis where the authors constructed several models with and without control variables. The main findings indicate that teachers who implemented PBIS CS with high fidelity had significantly less TB and fewer SB. Teachers who had more SB had significantly higher TB. Furthermore, student characteristics can limit the effect of PBIS CS on SB. Implications such as gradual implementation plans, considering best practices and employing a change management approach are discussed.

Contribution/Originality: This paper's main contribution is analyzing a large sample from three states to explore the relationship between Positive Behavioral Interventions and Supports (PBIS) classroom systems and student behavior problems. This research addresses a significant gap in the literature as few studies have examined this critical connection in diverse educational settings.

1. INTRODUCTION

Student behavior problems have been significant issues throughout the years. As an indicator of these problems, a famous reaction that schools take to address behavior problems is out-of-school suspension (Cameron, 2006). From 1974 to 2006 in the U.S. and according to schools reports, the number of students suspended (K-12 students received one or more out-of-school suspensions) grew from 1.7 to 3.3 million (Mergler, Vargas, & Caldwell, 2014). Similarly, according to the data from 2013 to 2014 released by the U.S. Department of Education Office of Civil Rights, the student suspension number is still approximately 3 million students. In more recent data, 2015-2016, 2.7 million students were suspended which represented approximately 6% of all K-12 students. The suspension number is an indicator that student behavior problems remain a significant challenge for schools and teachers who are experiencing difficulties in trying to address them.

One way to address and deal with this challenge is through PBIS (Positive Behavioral Interventions and Support). PBIS is a research-backed approach designed to enhance students' academic, social, and emotional well-being as well as their mental health through a structured and tiered support system. When applied thoroughly and consistently, PBIS leads to improved social-emotional skills, academic performance, and the overall school environment (Center on PBIS, 2024). In 2018, in the United States, more than 25,900 schools were implementing positive behavior intervention and support (PBIS Center, 2018). Positive behavior intervention and support (PBIS) has stimulated much interest among researchers resulting in many studies especially ones that focus on its impact on student outcomes such as reducing behavioral problems and academic achievement (Bradshaw, Mitchell, & Leaf, 2010; Donohue, 2014; Kim, Mcintosh, Mercer, & Nese, 2018; Noltemeyer, Palmer, James, & Wiechman, 2019; Simonsen et al., 2012; Sugai & Horner, 2006; Taylor-Greene et al., 1997). However, there has been little attention paid to teacher burnout (Hence, 2016; Ross, Romer, & Horner, 2012).

Studies have shown the negative effect of teacher burnout on several variables including the teachers themselves and student outcomes (Aloe, Shisler, Norris, Nickerson, & Rinker, 2014; Belcastro & Gold, 1983; Goddard & Goddard, 2006; Ingersoll & Smith, 2003). These studies have indicated that teacher burnout and attrition rates affect teacher physical illnesses (Belcastro & Gold, 1983), teacher turnover (Ingersoll & Smith, 2003) and job resignations (Goddard & Goddard, 2006). Furthermore, the World Health Organization for Health Problems and Illnesses in 2019 considered burnout a health-related occupational problem that must be addressed. Helping teachers to decrease burnout will affect teacher performance and job stability which reflect student outcomes. Thus, classroom management is very important for the teacher to face these situations effectively. Students' and teachers' outcomes will be affected with poor classroom management (Reinke, Herman, & Stormont, 2013). Jennings and Greenberg (2009) confirmed that classroom management has a strong positive effect on teacher burnout. Many teachers have problems with classroom management (Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Pavri, 2004) and providing classroom systems such as PBIS classroom systems will help teachers in their classrooms.

The goal of the present study is to determine whether PBIS classroom systems contribute to a reduction in teacher burnout as they positively contribute to student outcomes (Bradshaw et al., 2010; Donohue, 2014; Kim et al., 2018; Simonsen et al., 2012; Taylor-Greene et al., 1997). The main research question investigated is as follows: what is the direct and indirect relationship between PBIS classroom systems and teacher burnout through the mediating variable student behavior problems controlling for other important variables? The PBIS framework has several systems and this present study focuses on PBIS classroom systems (Sugai & Horner, 2002). This research also investigates whether PBIS classroom systems without the existence of school- wide (SW) PBIS has the ability to affect teacher burnout and student behavior problems. Moreover, the study explores if school, teacher or student characteristics could limit the relationship among PBIS classroom systems, teacher burnout and student behavior problems.

2. LITERATURE REVIEW

A multitude of studies looked at teacher attitudes, classroom management, and classroom design and how they influence student outcomes whether in terms of social behavior or stress levels. Explored the relationship between teachers' management styles, attitudes and relational aggression in high school students in China, discovering that while management styles did not directly influence aggression, teacher sympathy for victims and a supportive classroom climate correlated with reduced aggression and victimization. Work stress was examined among social studies teachers in Qatar, and it was discovered that stress levels differed by gender and nationality but not by other demographic variables, encouraging workload changes to boost teacher efficiency.

Highlighted the significant role of classroom design and learning areas in promoting positive social behavior among young children, noting that engagement in diverse learning environments enhances essential social and cognitive skills suggesting that a well-structured classroom fosters beneficial child development.

2.1. Teacher Burnout

Numerous researchers have studied burnout across human services fields such as those involving teachers and psychologists (Jacobs & Dodd, 2003; Kokkinos, 2007; Maslach, 2003; Milfont, Denny, Ameratunga, Robinson, & Merry, 2007). The term burnout was coined by Freudenberger (1974) who defined it as a condition that causes people "to fail, wear out or become exhausted by making excessive demands on energy, strength and resources" (Freudenberger, 1974). Maslach, Jackson, and Leiter (1986) stated that emotional exhaustion, depersonalization, and reduced personal accomplishment are three components of the burnout construct. As mentioned before, increasing teacher burnout causes a significant negative impact on teachers. It increases teacher physical illnesses, turnover and job resignations (Belcastro & Gold, 1983; Goddard & Goddard, 2006; Ingersoll & Smith, 2003).

Studies provided many reasons that cause job burnout such as an overwhelming job, weakness of incentives, injustice, absence of control and conflicts (Maslach & Leiter, 1997). High work demands usually cause job stress (Jacobs & Dodd, 2003) emotional exhaustion, depression and anxiety (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Burnout occurs when feelings of engagement, activity, and efficacy are replaced by fatigue, cynicism, and inefficacy(Chang, 2009). Empirical evidence was found to support the notion that stressors in relation to jobs and stress reactions have an important effect on burnout (Demerouti et al., 2001). Occupations with high work demands and few resources can cause worker burnout (Bakker & Demerouti, 2014). Work social conflict and work overload cause cynicism and exhaustion (Maslach, 2003). When resources such as important information, materials and adequate time are not sufficient for work requirements, feelings of inefficacy tend to appear (Maslach, 2003).

Burnout has become a dramatic phenomenon in education (Brouwers & Tomic, 2000). Farber (1991) found that 5% to 20% of teachers reported burnout and more than 30% were unsatisfied with their occupation. Several reasons can lead to teacher burnout but one of the most significant reasons is student behavioral problems. Student discipline is a challenging issue for many schools (Osher, Bear, Sprague, & Doyle, 2010). The U.S. Department of Education Office of Civil Rights stated that approximately 2.7 million K-12 students received one or more out-of-school suspensions in 2015-2016. A high student suspension rate (O'Brennan, Pas, & Bradshaw, 2017) and student behavior problems cause teacher burnout (Aloe et al., 2014; Kyriacou & SUTCLIFFE, 1978; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010).

2.2. PBIS

PBIS is based on the following four basic components: school expectations and rules that are defined and taught, a reward and recognition system, school discipline procedures, and data-based decision-making (Burke et al., 2012; Sugai & Horner, 2006). A PBIS expectations and rules component takes into account all cultural differences and conflicts by teaching all students from different cultures behavioral expectations. PBIS does not wait until students' exhibit a behavioral case or issue to intervene. It builds a new positive social culture that gathers all stakeholders around it (Freeman et al., 2006). A PBIS reward and recognition component is a system for rewarding behaviors in various ways that are linked to the expectations and rules that have been established across the school campus (Kincaid, Childs, & George, 2010). School staff should regularly reward appropriate behavior and minimize existing motivational reasons that encourage inappropriate behaviors (Horner et al., 2014). PBIS posits that using punishment without proactive intervention (teaching and reinforcing) is ineffective (Gottfredson, 1989; Mayer, 1995; Tolan & Guerra, 1994). Furthermore, PBIS focuses on using data to inform decisions about how to select, implement and monitor behavioral expectations and organize school resources and systems to promote social behavior and student academic outcomes (Sugai & Simonsen, 2012).

2.3. PBIS Classroom Systems and Teacher Burnout

PBIS has the following four main systems: school-wide systems, non-classroom setting systems, classroom systems, and individual student systems (Sugai, Horner, & Todd, 2000). PBIS classroom systems got attention from some researchers in the education field and they emphasize their effect in classrooms. Childs, Kincaid, George, and Gage (2015) examined the relationship between PBIS and student suspensions. The authors used the Benchmarks of Quality (BoQ) survey to measure PBIS fidelity of implementation. The study found that from the 10 subscales, the classroom systems subscale had a significant and negative relationship with student suspensions. The study's results showed the importance of classroom systems among PBIS components.

Research has demonstrated the positive effect of PBIS on teachers' self-efficacy (Kelm & McIntosh, 2012; Ross & Horner, 2007; Ross et al., 2012). After implementing PBIS, results showed that teachers became more effective in dealing with students' behavioral challenges (Kelm & McIntosh, 2012). Bradshaw, Koth, Bevans, Ialongo, and Leaf (2008) studied the effectiveness of PBIS on school organizational health and found that after teachers applied PBIS, they said they witnessed an enhancement in their school's organizational health. PBIS was found to have a significant and positive effect on teacher interactions and feelings of commitment to students (Bradshaw et al., 2008).

According to previous study findings, teachers' burnout has received minimal attention (Hence, 2016; Ross et al., 2012) thus indicating a gap in the literature in relation to this aspect. Therefore, it is intriguing to explore and understand the effect PBIS may have on teacher outcomes specifically teacher burnout. The study hypothesizes that PBIS CS has a direct and negative relationship with teacher burnout and an indirect and negative relationship with teacher burnout through the mediating variable of student behavior problems. Thus, the study hypothesizes that PBIS CS has a direct and negative relationship with student behavior problems and the student behavior problems variable has a direct and positive relationship with teacher burnout.

3. METHODOLOGY

3.1. Research Design

A survey link was sent to K-12 educational leaders through email to share with their teachers (N = 363) across NY (79.3%) and NJ (20.7%). The study obtained data from teachers in schools that implemented and did not implement PBIS.

3.2. Research Population

Participants were from around 95 schools (based on those who reported the name of their school). The study's participants work in elementary schools (58.4%), middle schools (22.6%), and high schools (19%). The geographic distribution of the participants' schools was diverse including urban schools (46.3%), suburban schools (37.5%), and rural schools (16.3%). Most of the participants were from public schools (89.3%) while the remaining participants were from private and parochial schools (10.7%). Regarding participants' characteristics, general education teachers (51.5%) were the majority of the sample followed by special education teachers and others (48.5%). Most of the participants were female (77.1%) while the remaining was male (22.9%). Regarding their years of teaching experience, the sample was diverse with experience ranging from five years and less (14.6%) to more than thirty years (7.4%).

3.3. Instrument

First, the researchers asked about the level of external support that participants receive to address individual or groups of misbehaving students (M = 2.02). The researchers derived the mean by using a five-point Likert-type scale ranging from very low = 0 to very strong = 4. The mean indicates that most participants received moderate external support that helped them to address individual or groups of misbehaving students.

Second, the researchers asked about the quality of implementing SWPBIS in their schools (M = 2.89). The variable was measured using a five-point Likert-type scale ranging from "school did not implement SWPBIS" = 0 to "very strong implementation" = 5. The mean indicates that many participants teach in schools where the quality of SWPBIS implementation is moderate. The last question asked about the effect of any behavior programs (other than SWPBIS) that their schools implemented to decrease behavior problems (M = 1.55). The question was measured using a five-point Likert-type scale ranging from "school does not implement other behavior programs" = 0 to "very strong implementation of other behavior programs" = 5. The mean indicates that on average, participants teach in schools where the effect of any behavior programs (other than SWPBIS) is relatively small.

Regarding the students' characteristics as reported by their teacher, a plurality (31.1%) of the respondents indicated that 10% or fewer of the students they taught had emotional or behavior disorders. The rest of the respondents indicated different percentages (from 11% to more than 50%) of students with emotional or behavioral disorders in the sample. Thirty-six percent of the respondents indicated that 51% or more of the students they taught had low academic levels.

The survey measured one dependent latent factor (teacher burnout), one mediating latent factor (student behavioral problems), one independent latent factor (the fidelity of PBIS CS) and demographic control variables.

The researchers adapted a part of the survey items from the Effective Behavior Support (EBS) Self-Assessment Survey to measure PBIS CS (Sugai et al., 2000). The EBS has the following four subscales: school-wide systems, non-classroom setting systems, classroom systems and individual student systems. The study used PBIS classroom systems (CS) that have 11 items. The scales' answer choices are 1 = not in place, 2 = partial in place and 3 = in place. The authors found good internal consistency within each factor (subscale) in general, and in PBIS CS there was an acceptable alpha of .86.

The researchers used the Copenhagen Burnout Inventory (CBI) client subscale (Kristensen, Borritz, Villadsen, & Christensen, 2005) to measure teacher burnout. The researchers have received permission to use the survey and substitute the word "students" for "clients". The authors tested CBI on 1,914 participants and found strong internal reliability in the three scales with alphas of .85–.87.

4. RESULTS

4.1. PBIS CS Factor

The study conducted Confirmatory Factor Analysis (CFA) for the PBIS CS factor to validate the scale. The researchers switched their focus from providing one factor that measured PBIS CS to multiple factors after they found that modification indices indicated that there were small to moderate covariances between the first set of questions (from question one to seven) and between the last set of questions (from question eight to eleven). After changes to the model based on modification indices, the fit indices improved markedly ($\chi 2$ = 94.199/df = 40, $p < 0.001$, chi-square minimum CMIN/Degree of freedom (DF) = 2.355, Comparative Fit Index (CFI) = 0.941, Tucker-Lewis Index (TLI) = 0.919, Root mean square error of approximation (RMSEA) = 0.061(90% confidence interval [0.045, 0.77], and standardized root mean square residual (SRMR = 0.0499). It is clear that the wording of the three questions are close in meaning and share a similar substantive sense so that they could be covaried (Byrne, 2010).

Internal Consistency: The researchers assessed the internal consistency of the two new scales (behavior classroom systems BCS and Academic classroom systems ACS). Cronbach's alpha of BCS' items together is .77. Similarly, Cronbach's alpha of ACS' items together is .713 indicating an acceptable degree of internal consistency (George & Mallery, 2003).

The baseline configural model ($\Delta\chi 2$ ($p > 0.05$), ΔCFI = 0.000, ΔRMSEA = 0.000) yielded an equal-fitting model when all factor loadings (measurement weights) were constraint to be equal across the two groups indicating poor factorial (or metric) invariance. The researchers continued the test by holding the factor intercepts invariant across

two groups to assess strong factorial invariance. This resulted in an insignificant difference from the factor loadings constrained model ($\Delta\chi2$ ($p > 0.05$), ΔCFI = 0.002, ΔRMSEA = 0.002). The results indicate study has strong factorial invariance for the PBIS CS measurement model across female and male groups.

Second order factor of PBIS CS from BCS and ACS: After the researchers provided the first-order test of BCS and ACS, they derived the second-order factor PBIS CS that is represented by the BCS and ACS factors in this section. The fit indices of PBIS CS are: $\chi2 = 94.199/df = 40$, $p < 0.001$, CMIN/DF = 2.355, CFI = 0.941, TLI = 0.919, RMSEA = 0.061 (90% confidence interval [0.045, 0.77] and SRMR = 0.0499. The BCS loading to PBIS CS = 0.96 is more than ACS = 0.75 which indicates the PBIS CS is better explained by the BCS (which is seven items) than by ACS (which is four items). At this point, the new second-order factor is ready to be used to examine the hypotheses in the SEM structural model.

4.2. Teacher Burnout Factor

The researchers conducted a CFA for the TB factor to validate the factor scale. First, the researchers looked at the normality assessment of the TB factor and found all the univariate kurtosis values were within the normal range varying from 0.60 to 0.19 (Curran, West, & Finch, 1996; Kline, 2016). Similarly, according to Mardia's (1970) multivariate normality criterion, there is no multivariate normality problem with the factor's data (kurtosis = 4.73; C.R. = 4.6).

4.3. Student Behavior Problems Factor

The researchers conducted a CFA for the SB factor to validate the scale. First, the researchers looked at the normality assessment of the SB factor and found all the univariate kurtosis values were within the normal distribution ranging from 0.811 to 0.603 (Curran et al., 1996; Kline, 2016). Similarly, according to Mardia (1970) there is no multivariate normality problem with the factor's data (kurtosis = 5.21 and C.R. = 7.16). The CFA of the SB model fit was very good ($\chi2 = 8.91/df = 3$, $p = 0.031$), CMIN/DF = 2.97, CFI = 0.994, TLI = 0.988, RMSEA = 0.074 (90% confidence interval [0.20, 0.132], and SRMR = 0.013).

4.4. Structural Equational Model of PBIS CS, TB, and SB

The researchers constructed and assessed a structural equation model to test the study hypotheses. Control variables have been added to the SEM gradually, SEM without control variables, school characteristic variables, teacher characteristic variables and student characteristic variables with all control variables.

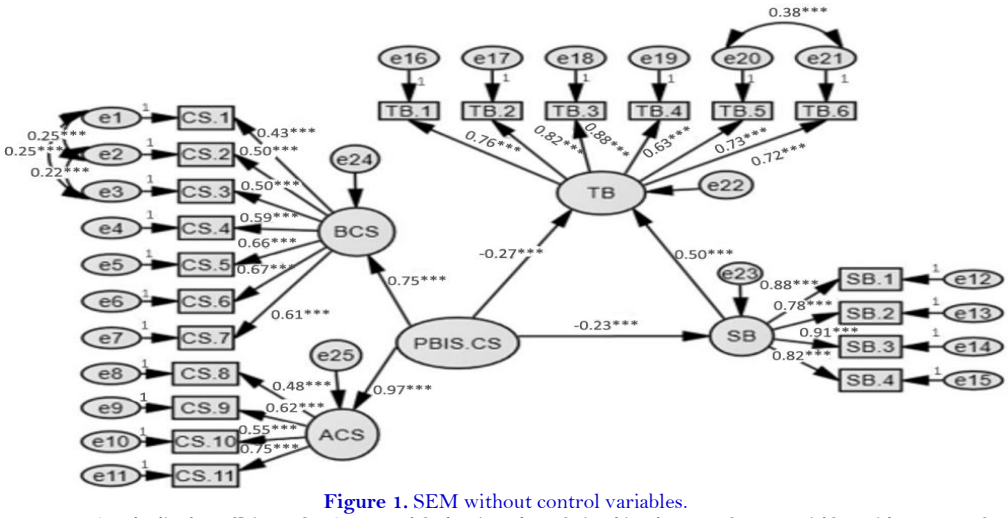

Figure 1. SEM without control variables.

Note: Standardized coefficients for SEM model showing the relationships between latent variables without control variables. The relationships of PBIS CS, TB, and SB. Goodness-of-fit indexes: ($\chi2 = 304.927$ /df = 183, $p < 0.001$, CMIN/ DF = 1.666, CFI = 0.963, TLI = 0.958, RMSEA = 0.043 (90% confidence interval [0.34, 0.051], and SRMR= 0.0289). *** Significant at $p < 0.001$.

4.4.1. SEM without Control Variables

The first structural model was without control variables (see Figure 1) and resulted in strong fit indexes ($\chi 2$ = 304.927 /df = 183, p < .001), CMIN/ DF = 1.666, CFI = .963, TLI = .958, RMSEA = .043 (90% confidence interval [0.34, 0.051], and SRMR= .0289). Regarding the study hypotheses, all were substantiated and in the direction hypothesized. First, PBIS CS has a direct, statistically significant, negative and small to moderate relationship with teacher burnout (β = -.27, p < .001). Secondly, PBIS CS has an indirect, statistically significant and negative relationship with teacher burnout through the mediating variable student behavior problems (β = -.12, p < .001). Thus, the total relationship is moderate (β = -.38, p = .002). Third, PBIS CS has a direct, statistically significant, negative and small to moderate relationship with student behavior problems (β = -.23, p < .001). Fourth, student behavior problems have a direct, statistically significant and positive moderate relationship with teacher burnout (β = .50, p < .001).

Table 1. β changing in PBIS CS structural models with adding all statistically significant characteristic control variables.

Relationships (β)	Model 1 No control variables	Model 2 Adding students' with low academic levels, teacher type, and school level	Model 3 Adding students with emotional or behavioral disorders	Model 4 Adding the effect of any behavior programs
Direct β between PBIS CS and TB	-0.27***	-0.26***	-0.27***	-0.24***
Indirect β between PBIS CS and TB through SB	-0.11**	-0.104**	-0.79*	-0.064*
Total β between PBIS CS and TB	-0.38***	-0.37***	-0.35***	-0.30**
Direct β between PBIS CS and SB	-0.23***	-0.22**	-0.17**	-0.14*
Direct β between SB and TB	0.50***	0.47***	0.47**	0.46***

Note: All regression weights are standardized estimates. * Significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$.

4.4.2. School Characteristic Control Variables

The school characteristic control variables are the participant's school state (NJ or NY), school type, school level, school geographic location, level of external behavioral support level, SWPBIS quality and effect of any behavior programs (other than SWPBIS). There were only two control variables that had statistically significant relationships which were the effect of any behavior programs (other than SWPBIS) variable on TB (β = -.11*), and on SB (β = -.11*) also between the school level variable and SB (β = -.16*). So, the study only kept these control variables in the final structural model. The goodness-of-fit indexes of the SEM model with the school characteristics control variables remained generally strong ($\chi 2$ = 398.636 /df = 222, p < .001, CMIN/ DF = 1.796, CFI = .948, TLI = .949, RMSEA = .047 (90% confidence interval [0.39, 0.054], and SRMR= .0635). The relationships were still significant when the school characteristics controls were entered. Moreover, there were only small reductions in the β values (see Table 1 for a summary of differences between the SEM models before and after controls are entered).

4.4.3. Teacher Characteristics Control Variables

The teacher characteristics control variables are teacher type, teacher experience, and gender. There were only two control variables that had statistically significant relationships. The first was between the teacher type variable (general = 0, special education/other = 1) and TB (β = -.10*) which means general teachers tend to have more burnout than special education/other. The second was between the teacher experience variable and SB (β = -.12*).

Therefore, the study kept only these relationships. The goodness-of-fit indexes of SEM model with the teacher characteristics control variables were generally strong ($\chi 2$ = 382.269 /df = 223, p < .001), CMIN/ DF = 1.714, CFI = .953, TLI = .946, RMSEA = .044 (90% confidence interval [0.37, 0.052], and SRMR= .0631). All of the relationships were still significant even when controlling for teacher characteristics with very small changes in β values of their relationships.

4.4.4. Student Characteristics Control Variables

The student characteristics control variables are the reported percentage of students with emotional or behavioral disorders, the percent of students with low academic levels, percent of students receiving free or reduced-price lunch, class size, percent Hispanic or Latino or Black or African American students, and percent of English as Second Language students. There were five control variables that had statistically significant relationships with either of the latent variables. They were among students with emotional or behavioral disorders and SB (β =.15**), Hispanic or Latino or Black or African American students and SB (β =.12*), ESL students and SB (β = -.11*), students with low academic levels and TB (β =.13*), and class size and TB (β =.12*). The study only kept these paths. The goodness-of-fit indexes of the SEM model with the student characteristic control variables were generally strong ($\chi 2$ = 462.940/df = 283, p < .001), CMIN/ DF = 1.636, CFI = .951, TLI = .944, RMSEA = .042 (90% confidence interval [0.35, 0.049], and SRMR= .0623). The relationships were still significant even when controlling for the different student characteristics, though there was some reduction of β values in some of their relationships (see Table 2 for a summary of differences between the SEM models before and after controls are entered). There is a notable reduction of β value between PBIS CS and SB in the student characteristic control variables model (from β = -.23 to β = -.15). The reduction in β value indicates that student characteristics affect the relationship between PBIS CS and SB.

4.4.5. The Model with All Control Variables

The model included the nine statistically significant control variables in the three models (school, teacher, and student characteristics). The model included the effect of any behavior programs (other than SWPBIS), school level, teacher type, teacher experience, percent of students with emotional or behavioral disorders, percent of Hispanic or Latino or Black or African American students, percent of ESL students, percent of students with low academic levels, and class size.

Table 2. Model: β values of all statistically significant control variables within the PBIS CS structural model.

Control variables	SB	TB
Students with emotional or behavioral disorders	0.20***	0.09
Students with low academic levels	0.05	0.14**
Teacher type	0.00	-0.13**
School level	-0.17**	0.02
Effect of any behavior programs	-0.13*	-0.10*

Note: All regression weights are standardized estimates. * Significant at p < 0.05; ** significant at p < 0.01 and *** significant at p < 0.001.

According to Table 2, five control variables continued to have a statistically significant relationship with the latent variables. These are the percent of students with emotional or behavioral disorders, the percent of students with low academic levels, teacher type, school level and the effect of any behavior programs (other than SWPBIS). The researchers kept these paths and deleted all control variables that did not have statistically significant relationships.

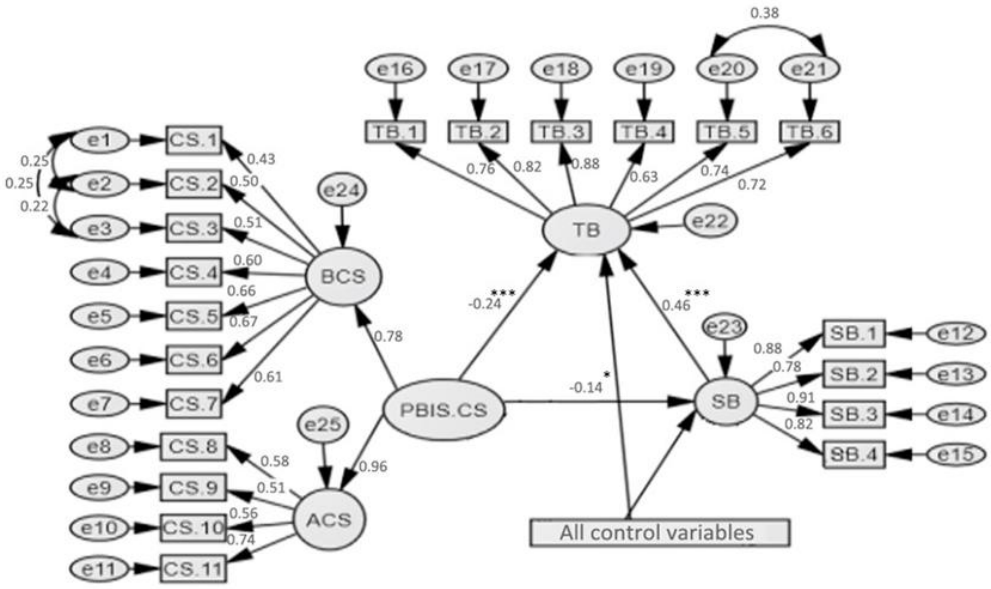

Figure 2. SEM with all control variables.

Note: Standardized coefficients for SEM model show the relationships between latent variables controlling for all significant control variables. The relationships of PBIS CS, TB, and SB. Goodness-of-fit indexes: ($\chi 2$ = 507.510/df = 284, $p < 0.001$), CMIN/DF = 1.787, CFI = 0.939, TLI = 0.930, RMSEA = 0.047 (90% confidence interval [0.40, 0.053], and SRMR = 0.065). * Significant at $p < 0.05$; *** significant at $p < 0.001$.

According to Figure 2, the goodness-of-fit indexes of the model were good ($\chi 2$ = 507.510/df = 284, $p < 0.001$), CMIN/DF = 1.787, CFI = 0.939, TLI = 0.930, RMSEA = 0.047 (90% confidence interval [0.40, 0.053], and SRMR = 0.065). Comparing the two models before and after the control variables were entered resulted in a statistically significant value in a chi-square test ($\Delta\chi 2$ ($p > 0.001$) and a statistically significant CFI difference test (ΔCFI = 0.024). However, it was not statistically significant in a RMSEA difference test (ΔRMSEA = 0.004) (Chen, 2007; Cheung & Rensvold, 2002). Even though there was a statistically significant reduction in the fit-indices between the two models, the model still had good fit indices.

The relationships were still significant even when controlling for all characteristics, though there was a reduction of β values for some relationships before and after the control variables were entered. The strength of the direct relationship between PBIS CS and TB was β = 0.27*** and became β = 0.24*** and the indirect relationship was β = 0.11*** and became β = 0.064* and the total relationship was β = 0.38** and became β = 0.30**. The strength of the relationship between PBIS CS and SB was β = 0.23*** and became β = 0.14* and between SB and TB was β = 0.50*** and became β = 0.46***.

Finally, the model provided results that support the study hypotheses. First, the study found in the model that even after the researchers controlled for all control variables, PBIS CS still has a small to moderate statistically significant direct, negative relationship with TB. Second, the researchers found that PBIS CS has a moderate statistically significant indirect negative relationship with TB through the mediating variable SB. Third, PBIS CS has a small statistically significant direct negative relationship with SB. Fourth, SB has a moderate statistically significant and direct positive relationship with TB (see Table 2).

5. DISCUSSION

The study's main finding is a negative relationship between PBIS CS and teacher burnout. In other words, teachers who implemented PBIS CS with high fidelity tended to have less burnout. This study's result is consistent with previous studies such as Ross et al.'s (2012) research. Ross et al.'s (2012) found that there is a negative relationship between implementing SWPBIS with fidelity and teacher burnout. This finding is also consistent with Bartosik's (2014) research. Bartosik's study was implemented in three middle schools and found that PBIS significantly diminished teacher burnout. Keating's (2016) study conducted in one middle and one elementary

school that implemented PBIS found that teachers were highly satisfied with implementing PBIS. In contrast, Newby (2014) found that teachers who implemented PBIS had more teacher burnout than those who did not.

Comparing this study to the previous studies, one can see significant limitations in prior studies along with some critical issues where this study attempted to avoid these limitations. For example, the study has a relatively large sample size (N = 363 teachers) from more than 95 schools within all school levels (K-12 teachers) and within different types of neighborhoods (urban, sub-urban, and rural). In addition, the study controlled for 15 variables divided into three categories: school characteristics, teacher characteristics, and student characteristics. Furthermore, the study used a sophisticated statistical method (CFA, EFA, and SEM) that gave more accurate and advanced results.

The job demands-resources (JD-R) theory helps us understand why there is a negative relationship between PBIS and TB. The theory suggests that jobs with high demands (such as teaching) need more resources to decrease employee burnout. PBIS provides these resources and redirects them in ways that support teachers. For example, it is essential in the PBIS framework that teachers get ongoing training to increase their efficacy in teaching and dealing with students' behavior needs within the PBIS framework.

The researchers hypothesized that student behavior problems have a positive relationship with teacher burnout. Teachers who have more student behavior problems have a significantly higher teacher burnout rate. This result is consistent with most previous studies (Aloe et al., 2014; Bibou-Nakou, Stogiannidou, & Kiosseoglou, 1999; Evers, Tomic, & Brouwers, 2004).

Aloe et al. (2014) did a multivariate meta-analysis study to examine the relationship between student misbehavior and teacher burnout, analyzed 21 independent samples that provided 63 effect sizes. The study found a significant relationship between student misbehavior and teacher burnout. Brouwers and Tomic (2000) studied more than 5,000 teachers in the U.S. and Canada and found that more than 60% of the teachers indicated that the primary cause of their stress was student behavior problems (Brouwers & Tomic, 2000). Different reasons could explain the relationship. Jennings and Greenberg (2009) stated that the teaching profession is not like other professions. If teachers are exposed to situations that provoke their emotions, they cannot simply excuse themselves until they calm down.

The study hypothesized that PBIS has a negative relationship with student behavior problems and found that teachers who implement PBIS CS have significantly fewer student behavior problems and vice versa. This result is consistent with many previous studies that use several student behavioral indicators (not the behaviors themselves), such as discipline referrals, suspensions, and expulsion rates (Bradshaw et al., 2010; Donohue, 2014; Kim et al., 2018; Simonsen et al., 2012; Taylor-Greene et al., 1997). Bartosik (2014) examined the effect of PBIS on different indicators including disciplinary issues in three middle schools and found that PBIS significantly decreased disciplinary issues and improved school climate.

Kim et al. (2018) examined the relationship between SWPBIS implementation with fidelity and office discipline referrals (ODRs) and out-of-school suspensions (OSSs) over time from K–12 schools within ten states and found that ODRs and OSSs declined over three years.

6. LIMITATIONS

Using self-reported data is one of the limitations of this study. Some participants may believe were implementing PBIS CS with fidelity and rated themselves artificially higher. Researchers can use other methods to measure the fidelity of PBIS CS and examine its effects. Another limitation is that the participants were only from two states (NY and NJ). Future researchers in this field may want to replicate the current study and apply it to a larger teacher population. Gathering the data from more states or even from other countries could help triangulate the current study's findings. Researchers may want to use longitudinal quantitative data to determine the level of teacher burnout before and after implementing PBIS CS.

7. CONCLUSION

This study attempted to answer the following research question: What is the direct and indirect relationship between PBIS CS and teacher burnout through the mediating variable student behavior problems, controlling for other important variables? The findings indicated a significant negative direct and indirect relationship between PBIS CS and teacher burnout by mediating variable student behavior problems. This finding means that teachers who implement PBIS CS had less burnout especially if student behavior problems caused the teachers' burnout.

The findings also showed that there was a significant and negative relationship between PBIS CS and student behavior problems. The study also found a positive relationship between student behavior problems and teacher burnout, which means that teachers who have more student behavior problems have more teacher burnout. Furthermore, the study found that student characteristics mitigate the relationship between PBIS CS and student behavior problems. This outcome indicates that if a teacher implements PBIS CS in two classrooms with the same level of fidelity, the teacher could get different results depending on student characteristics.

8. IMPLICATIONS

Teacher burnout and student behavior problems are significant challenges in the educational leadership field. Finding solutions that help decrease these problems is a primary focus of many teachers, researchers, education leaders, and policymakers. PBIS CS can help teachers, schools, and school districts who are facing high rates of teacher burnout and student behavior problems to mitigate these issues.

Although the researchers found benefits for implementing PBIS CS, every school is different. The researchers propose a gradual implementation for schools that starts by educating teachers about the benefits of the classroom systems. Then, allow a small number of teachers to volunteer and implement these systems with fidelity. The school could gauge the progress and benefits of the systems. The school could hold short, regular meetings with updates on the efficacy of the system; the problems faced, and proposed suggestions relevant to the school. If the school leadership and teachers witness positive results, the school could implement the system on the rest of the teachers.

Furthermore, school leaders should consider other school leaders' recommendations who successfully implemented PBIS in their schools. Scaletta and Tejero Hughes's (2020) recent study delineates the successful implementation process of many school leaders who explained their experience and provided a roadmap for other leaders. They interviewed 24 school leaders who got high recognition for their implementation of SWPBIS. The leaders empowered teachers to lead the implementation and benefited from the teachers' ability to shape their PBIS systems and processes in their buildings. The leaders have provided ongoing professional development and training for school' employees. Moreover, they have engaged stakeholders in building the PBIS systems.

Change is a big challenge for education leaders, including school district leaders, school building leaders and even policymakers. When suggesting a change to education leaders, these leaders need to understand the pros and cons of such a change. Providing leaders with complete information about the PBIS systems will work as an incentive and reduce the uncertainty that is part of every new change. When approaching leaders with PBIS implementation ideas, one should start with the benefits to the education leaders, and then explain the benefits expected for the teachers and students. A high rate of student behavior problems and teacher burnout drains education leaders' energy. Facing these challenges without solutions based on research and successful experience puts education leaders at a disadvantage.

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