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Empirically Derived Profiles of Teacher Stress, Burnout, Self-Efficacy, and Coping and Associated Student Outcomes

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Abstract

Understanding how teacher stress, burnout, coping, and self-efficacy are interrelated can inform preventive and intervention efforts to support teachers. In this study, we explored these constructs to determine their relation to student outcomes, including disruptive behaviors and academic achievement. Participants in this study were 121 teachers and 1,817 students in grades kindergarten to fourth from nine elementary schools in an urban Midwestern school district. Latent profile analysis was used to determine patterns of teacher adjustment in relation to stress, coping, efficacy, and burnout. These profiles were then linked to student behavioral and academic outcomes. Four profiles of teacher adjustment were identified. Three classes were characterized by high levels of stress and were distinguished by variations in coping and burnout ranging from (a) high coping/low burnout (60%) to (b) moderate coping and burnout (30%), to (c) low coping/high burnout (3%). The fourth class was distinguished by low stress, high coping, and low burnout. Only 7% of the sample fell into this Well-Adjusted class. Teachers in the high stress, high burnout, and low coping class were associated with the poorest student outcomes. Implications for supporting teachers to maximize student outcomes are discussed.

A basic premise of positive behavior interventions and supports (PBIS) is that adults are responsible for providing effective environments for youth and that systems of support are needed for adults to sustain implementation (Lewis & Sugai, 1999; McIntosh, Filter, Bennett, Ryan, & Sugai, 2010; Sugai & Horner, 2006). Much effort in disseminating PBIS practices focuses on equipping school personnel with the skills and resources to implement these practices with competence. Unfortunately, even when schools are able to deliver schoolwide PBIS with fidelity, classroom-level implementation may remain low (Reinke, Herman, & Stormont, 2013).

Aside from training and competence, one factor that can undermine PBIS implementation in the classroom is teacher stress and coping. For instance, one study found that emotional exhaustion was associated with low levels of positive behavior supports implemented in the classroom as evidenced by low positive-to-negative ratios and high rates of harsh reprimands (Reinke et al., 2013). In addition, teachers who experience high levels of burnout or feel emotionally exhausted demonstrate lower quality teaching and impaired relationships (Maslach & Jackson, 1981). Likewise, teachers with low self-efficacy, or negative beliefs about their

ability to teach students and manage their behavior, exhibit less effective teaching practices, which leads to lower student achievement (Skaalvik & Skaalvik, 2007).

In addition to interfering with PBIS implementation, teacher stress also contributes to teacher turnover (Johnson et al., 2005). About half of teachers leave the field within their first 5 years, often due to the stress of the profession (Ingersoll, 2002). Aside from its significant personal, financial, and societal burden (Alliance for Excellent Education, 2005; Ingersoll, 2001), high teacher turnover creates instability that undermines the likelihood a system will be able to sustain PBIS implementation over time. Thus, understanding patterns of teacher stress and coping may help guide efforts to provide systems of support needed to reduce teacher burnout and attrition.

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Teacher Stress, Burnout, and Coping

Teaching is a high-stress profession, and many teachers experience serious emotional problems related to the stress of their job (Eaton, Anthony, Mandel, & Garrison, 1990; Montgomery & Rupp, 2005). Stress interferes with personal well-being and can weaken performance (Folkman, Lazarus, Gruen, & DeLongis, 1986). When teachers are stressed and not coping well, the relationships they have with students are likely to suffer, leading to negative academic and behavioral outcomes for students (Wentzel, 2010).

Persistent stress can result in professional burnout. Burnout is the accumulation of responses to extended stressors caused by one's job; characteristics of burnout are emotional exhaustion, cynicism (depersonalization), and low levels of self-efficacy (Maslach, Schaufeli, & Leiter, 2001). Emotional exhaustion is a response to an overwhelming amount of demand from one's job (Maslach et al., 2001). Inefficacy comes from excessive demands and not enough resources to meet those demands; it is defined by self-perceived ineffectiveness (Maslach et al., 2001). The transactional model of stress proposes that stress and burnout occur when an individual has a negative appraisal between the demands placed upon them and their abilities to sufficiently cope with those demands (Sapolsky, 1998). Thus, teacher burnout, stress, coping, and self-efficacy are likely interrelated and multidirectional.

Teacher burnout has been linked to teacher turnover intentions and job absenteeism (Belcastro & Gold, 1983) as well as irritability and diminished performance (Huberman, Grounauer, & Marti, 1993). A common conceptualization of burnout includes three components that are related to implementation of classroom practices, including emotional exhaustion, depersonalization, and sense of personal accomplishments from the job (Maslach, Jackson, & Leiter, 1996). In particular, emotional exhaustion, defined as the "tired and fatigued feelings that develop as emotional energies are drained" (Maslach et al., 1996, p. 28), is likely to interfere with a teacher's efforts to implement effective instructional practices and may influence the development of negative attitudes about and interactions with students (Lamude, Scudder, & Furno-Lamude, 1992).

Not surprisingly, teacher burnout and stress have been shown to negatively influence teacher and student well-being (Beer & Beer, 1992; Geving, 2007). Specifically, Geving (2007) found that teacher behaviors elicited negative student behaviors, such as harming school property, criticizing other students, and talking back to the teacher. In addition, Kokkinos (2007) found that teacher burnout was significantly associated with higher levels of student antisocial and oppositional/defiant behaviors (e.g., cruelty/bullying, rudeness, deceiving or makes fun of schoolmates).

Coping is a less considered aspect of teacher functioning, perhaps because it may be perceived as synonymous with stress. In fact, stress and coping are distinct constructs and each contributes important understanding to individual adaptation. Stress results from an imbalance between demands and resources that are available. Coping refers to the person's cognitive and behavioral efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of this person–environment transaction (Lazarus & Folkman, 1984). Therefore, it is possible for individuals to experience high levels of stress and still report adequate coping skills (Brenner & Bartell, 1984). This distinction may be especially relevant in today's high pressure school settings where most, if not all adults, may experience stressful environments but may have great variability in individual coping responses.

Teacher Self-Efficacy

Teacher self-efficacy is also negatively associated with teacher stress and burnout with available evidence suggesting reciprocal effects over time (Brouwers & Tomic, 1999). Similar to teacher burnout and stress, self-efficacy is associated with classroom management (Reinke et al., 2013). Conceptually, teachers who feel more confident in their capacity to manage classroom behaviors are more likely to deliver effective practices and observe positive student outcomes. In turn, positive student responses to effective classroom management serves as a positive feedback loop for increasing self-efficacy and the likelihood the teacher will deliver effective practices in the future (Han & Weiss, 2005). On the contrary, lack of confidence or efficacy may interfere with a teacher's ability to be effective in meeting the needs of students. For instance, Pas, Bradshaw, Hershfeldt, and Leaf (2010) found that teachers with low efficacy were less likely to make referrals for their students to student support teams.

Teacher efficacy is also related to student academic achievement. In a study on the academic gains made in a school year of primary school students, Muijs and Reynolds (2002) found that academic achievement and yearly gains were best predicted by teacher behavior. In addition, they found that teacher self-efficacy and subject knowledge affected teacher behavior, thereby creating an indirect relationship to student academic achievement. Self-efficacy predicts future behavior. Self-efficacy theory suggests that if a teacher experiences success on a task, then he/she is likely to believe that he/she will be successful again in that task (Tschannen-Moran & Hoy, 2007). Conversely, if a teacher perceives that he/she is not proficient in managing student behaviors or promoting the academic achievement of their students, then the teacher will be less likely to attempt to further affect these areas. Notably, self-efficacy is a malleable teacher characteristic that can be altered through cognitive restructuring and mastery experiences (Bandura, 1997). Thus, building self-efficacy and improved

confidence in effective practices can serve as a point of entry for reducing teacher stress and burnout while improving outcomes for students.

A Person-Centered Approach

Individual coping responses suggest the need for a person-centered approach to understanding the relations among stress, burnout, coping, and self-efficacy. To date, prior studies have focused on variable-centered associations among these variables (e.g., mean scores on individual variables considered in isolation). Instead, a person-centered approach allows for the identification of patterns of teacher adjustment on a set of indicators like stress, coping, and efficacy, simultaneously. These patterns or profiles can then be linked to relevant student outcomes. Understanding how teacher stress, coping, burnout, and self-efficacy are interrelated and how they affect student outcomes such as disruptive behaviors and academic achievement can inform prevention and implementation efforts. Knowing teacher profiles of stress, burnout, and efficacy could also assist in tailoring interventions to support teachers accordingly.

The purpose of this study was to examine the co-occurrence of teacher stress, burnout, coping, and self-efficacy and how patterns, or profiles, of their co-occurrence were associated with student academic and behavioral outcomes. We hypothesized that several profiles of teacher adjustment would emerge with regard to their levels of stress, coping, burnout, and efficacy. Given the variation in how individuals experience stress and coping, we anticipated at least three profiles: well-adjusted (low stress and burnout, high coping and self-efficacy), poor adjustment (high stress and burnout, low coping and self-efficacy), and moderate adjustment (moderate scores on all indicators). In relation to student outcomes, we expected that well-adjusted teachers would report fewer behavior problems and have students with higher academic achievement. On the contrary, we expected teachers characterized by high stress and burnout and low coping and self-efficacy to report higher rates of behavior problems and have students with lower academic performance.

Method

Participants

The data used for this study were collected as part of a larger ongoing randomized efficacy trial evaluating a teacher classroom-management training program. Participants in this study were 121 general education teachers and 1,817 students in kindergarten to fourth grade. The participants were from nine elementary schools in an urban Midwestern school district. In addition, all the schools in the study were implementing school-wide PBIS with high fidelity (scores above 90% as gathered and reported by independent state evaluators). District-wide implementation of PBIS added strength to the design because it provided uniformity of behavior support programs across intervention and control schools. Of the 121 teacher participants, 95% were female and 5% were male (see Table 1). The racial demographics of the teachers were 22% African American, 1% Asian, 76% Caucasian, 1% Hispanic, and 1% Other. The percentage of teachers that taught each grade were 23% kindergarten, 25% first grade, 23% second grade, 18% third grade, and 11% fourth grade; 1% of the sample had missing data for this variable. Seventy-four percent of the teachers were between the ages of 20 and 41 years, while 26% were older. The student sample included slightly more males (52%) and African American students (76%; White = 22%, Other = 2%); 61% of the student sample qualified for free or reduced lunch, and 9% of the sample received special education services.

Procedures

The University Institutional Review Board and the participating school district approved the study protocol. All teacher participants provided informed consent and all student participants provided assent and parent consent. Teacher participants were recruited for the study across a period of 3 years. Some teachers were recruited to be part of the efficacy trial, whereas others were recruited to participate because student participants for whom 1-year follow-up data were being gathered as part of the larger efficacy trial were in their classroom. Fifty-one teachers (42%) in the present study were randomly assigned to an intervention condition that consisted of a professional development program called the Incredible Years (IY). IY Teacher Classroom Management (TCM) consists of six full-day workshops spread over the course of the year focused on promoting effective classroom management. Because the focus of the present study was on characterizing the nature of stress and coping profiles and not on intervention effects, we sought to maximize our sample size and use intervention, control, and follow-up teachers to allow us to conduct the latent profile analyses (LPA) described below. We controlled for intervention status in conditional analyses.

All teachers completed a packet of measures for each consented student in their class. Teachers in this study also completed self-report measures on their levels of burnout, stress, efficacy, and coping. All surveys were hard copies. This information was collected at the end of October for one cohort of teachers ($n = 38$) and at the beginning of May for the remaining teachers ($n = 83$). Academic achievement, specifically reading and math, was assessed using the *Woodcock–Johnson III Test of Achievement* (WJ III ACH; Mather & Woodcock, 2001), a standardized measure of reading and math achievement. Student assent was obtained by trained assessment examiners. Undergraduate

Table 1. Teacher and Student Demographics.

Demographic	% or M (SD)
Teacher	
Female	95
Race	76
White	76
African American	22
Other	3
Grade	
K	23
1	25
2	23
3	18
4	11
Age: Above 40	26
Experience (M years)	11.1 (8.1)
Students	
Female	48
Special education	10
Race	22
White	22
African American	76
Other	2
Free or reduced-price lunch	61

and graduate students were trained in administering the WJ III ACH and passed a competency exam before working with the student participants. Administration procedures were monitored and verified by on-site senior researchers. Scoring was checked and verified in the lab and double entry procedures were used when entering data into the WJ scoring system. The academic assessment was conducted at the same time point as the teacher self-report measures.

LPA Indicator Measures

Teacher burnout. The *Maslach Burnout Inventory* (MBI; Maslach et al., 1996) was completed by all teachers to measure their levels of burnout. The authors described *burnout* as emotional exhaustion, cynicism, and reduced feelings of accomplishment. The MBI uses three subscales to measure three aspects of burnout: "emotional exhaustion, depersonalization, and lack of person accomplishment" (Maslach et al., 1996, p. 4). Scores on each scale were considered separately. Respondents answer on a 7-point Likert-type scale from 0 (*never*) to 6 (*every day*). The nine-item Emotional Exhaustion subscale was utilized in this study. Cronbach's alphas for the subscale were .91, .90, and .92 across cohorts in this study.

Teacher stress. Teachers were asked, "How stressful is your job?" to measure the level of stress that they were currently experiencing. Teachers answered on an 11-point Likert-type scale from 0 (*not stressful*) to 10 (*very stressful*). A recent report found that responses on this single-item measure were significantly correlated with teacher reports of emotional exhaustion on the MBI ($r = .42$; $n = 152$); moreover, scores predicted emotional exhaustion 1-year later over-and-above baseline demographics (e.g., years teaching, gender; Eddy, Herman, & Reinke, 2017). In addition, stress ratings on this single-item in the fall and spring were stable ($r = .58$; $n = 85$).

Teacher coping. Teachers were asked, "How well are you coping with stress of your job right now?" Participants answered on an 11-point Likert-type scale from 0 (*not well*) to 10 (*very well*). Scores on this coping scale were significantly correlated with emotional exhaustion on the MBI ($r = -.46$; $n = 152$) and predicted emotional exhaustion 1-year later ($\beta = -.34$) after controlling for baseline demographics (Eddy et al., 2017). In addition, this coping item has a high level of stability across fall and spring administration ($r = .70$; $n = 85$). This single-item report is also sensitive to intervention effects; teachers randomly assigned to a classroom-management intervention had significantly higher coping scores (adjusting for baseline scores) compared with those assigned to business as usual professional development (Eddy et al., 2017).

Teachers' Sense of Efficacy Scale. The *Ohio State Teacher Efficacy Scale* (OSTES; Tschannen-Moran & Hoy, 2001) was completed by all teachers as a measure of teacher self-efficacy. The OSTES has a long and short form to measure teacher efficacy in student engagement, instructional strategies, and classroom management. Given the focus in the overarching efficacy trial on evaluating a classroom-management intervention, only the eight items on the subscales of teacher self-efficacy of classroom management were given to teachers to answer. Teachers responded to each items by indicating the amount they can do on a Likert-type scale from 0 (*nothing*) to 9 (*a great deal*). Cronbach's alphas for the subscale were .95, .96, and .95 across cohorts in this study.

Student Outcome Measures

Teacher report of student behavior. The *Teacher Observation of Classroom Adaptation Checklist* (TOCA-C; Koth, Bradshaw, & Leaf, 2009) was completed by all teachers for each student. The 54-item TOCA-C includes seven subscales: Concentration Problems, Disruptive Behavior, Prosocial Behavior, Emotional Regulation, Internalizing Problems, Family Problems, and Family Involvement. For the Prosocial Behavioral and Family Involvement subscales, higher scores indicate more positive outcomes; whereas higher scores for the other subscales indicate more problems. Each item is rated on a 6-point scale from 1 (*never*) to 6

(*almost always*). For the purposes of this study, the Disruptive Behavior, Prosocial Behavior, and Concentration Problems subscales were utilized given the hypothesized links between these student behaviors and teacher stress levels. Cronbach's alphas for disruptive behavior ranged from .91 to .92, prosocial behavior ranged from .90 to .92, concentration problems was .96, across the cohorts. Student scores on each measure were aggregated at the classroom level for each teacher.

Student academic achievement. The WJ III ACH was used to evaluate student achievement. Six subtests of the WJ III ACH were administered to all the students in the fall and spring. The Broad Reading and Broad Math subscales were utilized for this study. The WJ III ACH has strong technical adequacy and validity evidence as well as test–retest reliability of .80 or higher. The WJ III is a widely disseminated, well-researched, and validated measure of academic achievement. One advantage of the WJ III in the present study is that it was administered with high fidelity by well-trained and supervised research staff who were blind to study hypotheses. Thus, our measure of achievement used in this study was not contaminated by poor or biased administration as can occur with teacher and school staff administered measures. Student scores were aggregated at the classroom level for each teacher.

Analytic Plan

LPA was used to examine patterns of four indicators of teacher adjustment: emotional exhaustion index of burnout, stress, coping, and self-efficacy (Nylund et al., 2005). The basis of LPA is that within each class, the behaviors are locally independent. For this study, this means that teacher adjustment can be explained by an underlying classification of teachers into subclasses with similar patterns of burnout, stress, efficacy, and coping. Overall, the goal of LPA is to identify the smallest number of profiles that accurately describes the association between the teacher adjustment indicators. The results for the characteristics for identified latent profiles were expressed in mean levels of stress, burnout, coping, and self-efficacy and the prevalence or proportion of teachers in each class.

All analyses were conducted using MPlus 7.4 (Muthén & Muthén, 2010). In LPA, a combination of statistical considerations and substantive theory were used to decide on the best fitting model. To determine the relative fit of the models, we compared models with differing numbers of profiles using the Akaike information criterion (AIC; Akaike, 1987), the Bayesian information criterion (BIC; Schwartz, 1978), and the sample-size adjusted Bayesian information criterion (aBIC; Sclove, 1987). In these analyses, more weight was given to the Bayesian Information Criterion (BIC; Schwartz, 1978) because simulation studies suggest that the BIC

provides the most reliable indicators of true model fit (Nylund et al., 2005). Typically, the smaller the information criteria, the better the model fit to the data. Furthermore, we used a likelihood difference test, the *Vuong-Lo–Mendall–Rubin* (VLMR; Lo, Mendall, & Rubin, 2001), which assesses the fit between two nested models that differ by one class and provides a *p* value that indicates which model fits best. In addition, we evaluated the classification precision as indicated by estimated posterior class probabilities, summarized by the entropy measure (Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). Entropy values close to 1.0 indicate higher classification precision. Last, a bootstrapped parametric likelihood ratio test (BLRT) procedure was used to confirm the best fitting model once other model fit indicators, class prevalence, and interpretability were examined (see McLachlan, 1987).

Once the best solution was identified, profiles were examined to determine if they could be differentiated from one another using student behavior and academic achievement. This step is important, as it provides evidence that the profiles represent meaningful subsamples of the population as opposed to data patterns. To accomplish this, the Mplus Auxiliary function (Muthén & Muthén, 2010) was used for all continuous external variables while controlling for intervention status. This method derives profile membership based on the observed risk factor scores and uses the posterior probabilities to compute means for each external variable (disruptive behavior, prosocial behavior, reading, and math achievement). Some teachers (*n* = 51) had received the TCM training and others had not (*n* = 70). Intervention was not a significant predictor of the teacher profiles. In all analyses, standard errors were corrected to reflect the fact that children were clustered within classrooms (Reboussin, Song, Shrestha, Lohman, & Wolfson, 2006). To accommodate for missing data, Mplus software uses full information maximum likelihood with the assumption that the data are missing at random (Little, 1995), a common approach employed within this analysis method (Schafer & Graham, 2002).

Results

Teacher reports of stress, coping, burnout, and self-efficacy were entered as indicators in the LPA to determine the optimal number of profiles for teacher adjustment. The four-class model emerged as the best solution. We made this decision because the BIC, VLMR, and BLRT indicated the four-class solution was significantly better than the three-class solution. We decided against the five-class solution because the VLMR was not significant, the BIC was only a single point lower than the four class solution, and the fifth class that emerged was not conceptually relevant (e.g., it parsed the moderate adaptive class into further moderate subclasses). LPA fit indices for class solutions are summarized in Table 2.

Table 2. Model Fit Indices for Two- Through Five-Class Solutions of Teacher Adjustment Profiles.

Latent class	AIC	BIC	aBIC	VLMR LRT	Entropy
Two-class solution	1,727.72	1,764.06	1,722.96	0.00	0.83
Three-class solution	1,673.59	1,723.91	1,667.00	0.00	0.88
Four-class solution	**1,653.85**	**1,718.15**	**1,645.43**	**0.03**	**0.90**
Five-class solution	1,638.82	1,717.11	1,628.58	0.06	0.85

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; aBIC = adjusted Bayesian information criterion; VLMR = Vuong–Lo–Mendall–Rubin; LRT = likelihood ratio test. **Bold** indicates best fit: The four-class solution had the lowest BIC and the VLMR LRT and the Bootstrap LRT indicated the four-class solution provided a better fit than the three-class solution. Entropy summarizes the posterior probabilities. Entropy values close to 1.0 indicate higher classification precision. All entropy ratings indicate acceptable fit.
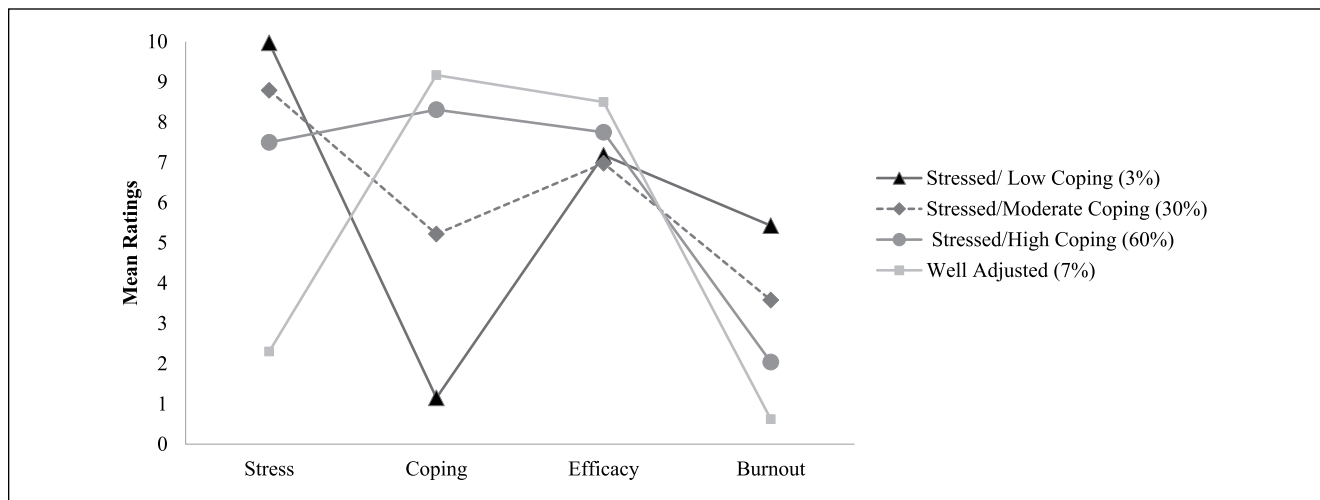
Figure 1. Profiles of teacher stress, coping, efficacy, and burnout.
Note. Stress and Coping scores were on a 0–10 scale; Efficacy scores were on a 0–9 scale; and Burnout scores were on a 0–6 scale.

Figure 1 provides the mean score and illustrates the characteristics of each of the four profiles of teacher adjustment. We labeled Class 1 Stressed/Low Coping because mean scores indicated very high levels of stress and burnout and low levels of coping and self-efficacy. Notably, mean stress scores for this group exceeded 9 (on a 10-point scale), and burnout scores were more than twice the sample average. Only 3% of teachers fell into this profile. Thirty percent of teachers fell into Class 2, Stressed/Moderate Coping, which was marked by high stress levels and moderate levels of coping and burnout. Class 3, Stressed/High Coping, was the most common pattern (60%) and was characterized by high stress, low burnout, and high coping. Finally, 7% of teachers fell into the Well-Adjusted class with low stress and burnout and high coping and self-efficacy scores.

Student Outcomes

Descriptive statistics for student outcome variables by teacher profiles are specified in Table 3. Findings indicate that across nearly all outcomes, the Stressed/Low Coping class demonstrated the highest rates of student behavior

problems and lowest academic achievement. Statistically significant differences were observed between the four profiles of teacher adjustment in terms of teacher-reported student prosocial behavior and behavioral problems.

The overall test of significance was considered significant for prosocial behavior ($p < .001$). The Stressed/Low Coping class had significantly lower mean scores on prosocial behavior ($M = 4.24$) than the Well Adjusted class ($M = 5.41$; $p < .001$), Stressed/High Coping ($M = 4.76$; $\chi^2 = 14.77$, $p < .001$), and the Stressed/Moderate Coping class ($M = 4.58$; $p < .01$). The Well Adjusted class also had higher mean scores for prosocial behavior than the Stressed/Moderate Coping class ($p < .01$), suggesting that even moderately lower levels of teacher coping (5 on a 10-point scale) may affect student prosocial development.

The overall tests of significance were significant for disruptive behavior ($p < .001$) and concentration problems ($p < .001$). The Stressed/Low Coping class ($M = 2.35$) had significantly higher disruptive behavior mean scores than the Well Adjusted class ($M = 1.48$; $p < .001$), Stressed/High Coping ($M = 1.93$; $p < .001$), and the Stressed/Moderate Coping class ($M = 2.30$; $p < .001$). The mean score for the

Table 3. Means, Standard Error, and Equality Tests Across Teacher Profiles of Stress, Coping, Efficacy, and Burnout.

Measure	Class 1: Stressed/Low Coping	Class 2: Stressed/ Moderate Coping	Class 3: Stressed/High Coping	Class 4: Well-Adjusted	Overall test of significance	Significant class comparisons
Teacher report						
Concentration	3.14 (.004)	2.68 (.09)	2.82 (.11)	2.13 (.46)	40.80***	Class 1 vs. 2**
						Class 1 vs. 3***
						Class 1 vs. 4*
Disruptive behavior	2.35 (.004)	2.03 (.09)	1.93 (.07)	1.48 (.23)	75.75***	Class 1 vs. 2***
						Class 1 vs. 3***
						Class 1 vs. 4***
						Class 2 vs. 4***
Prosocial behavior	4.24 (.004)	4.58 (.12)	4.76 (.10)	5.41 (.26)	58.51***	Class 1 vs. 2**
						Class 1 vs. 3***
						Class 1 vs. 4***
						Class 2 vs. 4**
						Class 3 vs. 4*
Student achievement						
WJ Reading	100.76 (0.03)	98.64 (1.66)	99.22 (0.90)	101.73 (2.56)	5.08	—
WJ Math	93.14 (0.03)	95.60 (1.47)	98.00 (1.22)	97.97 (2.79)	23.19***	Class 1 vs. 3*

Note. WJ = Woodcock–Johnson; WJ scores are standardized with $M = 100$ and $SD = 15$; parentheses indicate standard errors.
Chi-square p values: *$p < .05$. **$p < .01$. ***$p < .001$.

Well-Adjusted class was also lower than the mean score for the Stressed/Moderate Coping class ($p < .001$). For concentration problems, Stressed/Not Coping class had the highest mean scores for concentration problems ($M = 3.14$) and was significantly different from the Well Adjusted class ($M = 2.13$; $p < .05$), the Stressed/High Coping class ($M = 2.83$; $p < .001$), and the Stressed/Moderate Coping class ($M = 2.68$; $p < .01$).

The classes also differed in mean scores on math achievement. The students of teachers in the Stressed/Not Coping class had lower mean scores ($M = 93.14$) than the students in the Stressed/High Coping class ($M = 98.00$; $p < .05$); there was a nonsignificant trend for higher scores in the Well-Adjusted class as well ($M = 97.97$; $p < .06$). There were no significant differences between classes on reading achievement scores.

Discussion

The purpose of this study was to determine the patterns of teacher adjustment across indicators of burnout, stress, coping, and efficacy. In addition, the associations between the teacher adjustment patterns and student behavior and academic outcomes were investigated. Four distinct profiles of teacher adjustment emerged. This finding was largely consistent with our hypothesis that at least three would be found; the fourth profile represented a minor variation of moderate stress and coping. Furthermore, these profiles were significantly related to student behavior outcomes in expected ways, supporting the validity of these profiles in this sample of elementary teachers.

Nearly all teachers (93%) fell into classes characterized by high levels of stress. Only 7% of teachers were in a Well-Adjusted class suggesting that low stress and overall wellness were relatively rare in this sample of teachers. The main factors that distinguished the remaining high stress profiles were teacher-reported levels of coping and burnout ranging from high coping/low burnout (the most common pattern) to low coping/high burnout (the least common).

The high stress levels reported by nearly all teachers in this study confirm prior evidence suggesting that teaching is a stressful profession. Given high levels of stress seen in this and prior studies, it is not surprising that teachers also report above average levels of physical and mental health problems and below average levels of job satisfaction compared with individuals with other occupations (Eaton et al., 1990; Johnson et al., 2005). Furthermore, occupational stress among teachers can fuel teachers' physical or psychological absence from work (Jennings & Greenberg, 2009), leading to less effective instruction and behavior management practices. Consistent with these prior studies, the Stressed/Low Coping teacher profile was associated with the worst student outcomes including lower student adaptive behaviors and math achievement and higher disruptive behaviors compared with the other classes on nearly all comparisons. These findings support the contention that teacher stress and coping may have an impact not only on teacher well-being but also on the students in their classrooms. Although we did not conduct an experimental manipulation in this study to allow for a causal interpretation, such an inference would be consistent with theory and extant literature showing the impact of adult distress on

child development and performance (Jennings & Greenberg, 2009; McLoyd, 1990).

Notably, though, stress alone did not distinguish the classes. Despite their high levels of self-reported stress, most teachers fell into a profile characterized by corresponding high levels of coping and self-efficacy and low levels of burnout. Teachers in this class did not have any adverse student outcomes associated with their classrooms. These findings suggest the importance of taking a holistic approach to examining teacher adjustment and impact on student learning and social-emotional development. Stress levels alone may not capture the full dynamic of teacher functioning without also considering their self-reported coping and self-efficacy.

Gradients of stress, coping, burnout, and efficacy, and their combination, may also be important for understanding student outcomes, rather than just extreme variations of these conditions. For instance, the group of teachers characterized by high stress and more modest coping and self-efficacy (30% of the sample) reported significantly lower levels of prosocial student behaviors and higher levels of disruptive student behavior compared with teachers in the Well-Adjusted class. Thus, interventions to support teacher coping and wellness may reasonably target this group in addition to those with the more intense needs.

Study Implications

These findings have several potential implications for supporting teachers and in turn promoting successful adaptation and achievement of students. Given the links between high stress and burnout and low PBIS implementation (Reinke et al., 2013), finding ways to support teacher coping and efficacy may be critical to support successful implementation. Systems of support in the PBIS framework that can be brought to bear to remove an implementation barrier such as stress include school policies, teaming structures, decision-making protocols, funding, and organizational practices (Sugai & Horner, 2006).

Several strategies may be useful. First, screening teachers based on their levels of stress, coping, and burnout may identify those in need of support. The findings suggest that screening efforts should focus on both perceived stress and coping in identifying those most at risk for negative self and student outcomes. Teachers who report elevated levels of stress and also lower levels of coping are more likely to need the most assistance and in turn interventions are most likely to yield their biggest impact on students. Voluntary or self-screening could be tied to other building initiatives such as mental health awareness and health promotion. A self-screening could involve simply giving teachers a handout with the two item stress and coping scales, a simple scoring rubric, and a menu of resources they could pursue should their score warrant it including books, local stress workshops, and contacts for health care providers.

Second, teachers with high levels of stress and low levels of coping should be offered supportive services. Stress management is a well-established intervention in helping adults learn new coping skills and better manage their mood and daily hassles (see Herman & Reinke, 2015). These interventions typically focus on equipping adults with strategies for promoting adaptive thinking and adaptive behaviors, including relaxation training.

Third, given that few teachers were characterized by overall positive adjustment, the findings suggest that ecological interventions are needed to foster wellness in teachers. Teachers often bear the brunt of criticism in the modern era of accountability. They receive pressures from administrators, parents, and society at large to increase student outcomes while in many cases receiving fewer resources to do so. If efforts only focus on promoting individual coping, we will neglect the broader social context that influence teacher adaptation and coping. Ecological manipulations include fostering nurturing environments at school, not only for the students but also for the adults who work there. Applying the principles of PBIS to the adult context in schools may help foster this climate (Lewis & Sugai, 1999). This includes finding ways for administrators, peers, and parents to provide high rates of positive to negative interactions, providing teachers with adequate preparation and training to perform their jobs, and creating social networks to minimize the sense of isolation experienced by many teachers (Lewis & Sugai, 1999; McIntosh et al., 2010; Sugai & Horner, 2006).

Significantly, the findings suggest that investing resources in supporting teacher adaptation, both by equipping them with coping skills and by providing more environmental supports, may improve not only their well-being but also the well-being and functioning of students in their class. This is a relatively unexamined path toward promoting student achievement, which is after all behind much of the pressure and stress that teachers' experience. Future research in the area of providing teachers with professional development toward improving skills and coping with daily hassles is warranted.

Study Limitations

Given that we did not manipulate any variables in this study, causal inferences are not warranted. In addition, the findings are cross-sectional, so further research is needed to confirm whether stress and coping profiles lead to changes in student achievement. The findings do suggest that a logical next step would be to determine the effects of stress management training for at-risk teachers on subsequent teacher and student adaptation. A randomized design with such a manipulation would determine the role of teacher stress on student performance.

In addition, as noted, teachers were involved in the study at different time points in this cohort design. It is possible

that the time of year affected teacher adjustment and could account for differences in teacher reports and experiences of stress and coping. Further research is needed to explore the stability of teacher stress and coping profiles over the course of the year. It is important to note that cohort (fall or spring) did not predict class membership in the present study. From an LPA perspective, we would expect to see the same types of profiles over time, whereas the prevalence of each profile might vary over time. Replicating these findings with larger samples of teachers at different times of the year would address this question. It is also important to note that many findings were based on teacher report of their own circumstances and of student behavior and thus may be subject to source bias. Also, scales were not counterbalanced so any order of administration effects of these scales is unknown. The significant relationship between student performance on a math achievement measure and teacher-reported stress and coping profiles does mitigate some of these concerns.

Last, stress and coping were measured using single items, traditionally the bane of classical test theory. However, a recent study supported the concurrent and predictive validity of these single items, comparable with and in some cases better than other longer measures of stress (Eddy et al., 2017). Several recent studies have also suggested the promise of single-item measures, countering the assumptions of classical test theory regarding such measures (see Reinke & Herman, 2016; Stormont, Herman, Reinke, King, & Owens, 2015). Moreover, these stress and coping items have a high degree of face validity, they distinguished teacher profiles, and were associated with student outcomes, providing further evidence of the validity and usefulness of these items in this study. Therefore, these items may prove to be useful, efficient screens for assessing teacher stress and coping on a large scale. Regardless, the findings from this study enhance our current knowledge of how stress, efficacy, coping, and burnout among teachers interplay and may affect student outcomes.

The current research on teacher burnout and efficacy indicates that teachers may benefit from additional supports in classroom management and other areas to avoid having them leave the field early in their career (Ingersoll, 2001; Reinke et al., 2013). Although intervention status was unrelated to profile pattern in the present study, it is likely an artifact of the study design. For instance, one cohort of teachers in the intervention condition completed stress and coping measures in the fall prior to receiving the intervention. In addition, we oversampled nonintervention teachers by including follow-up teachers in an effort to maximize our sample size and allow us to conduct the sophisticated LPA to address our primary research question.

Future research will need to determine if classroom-management interventions move teachers into more adaptive stress and coping profiles. To the extent that teachers feel stressed by classroom behaviors of students, it is likely that teacher's relationships with these students and the development of a positive classroom climate that fosters student engagement in learning will be undermined. It also seems likely that negative stress reactions will be exacerbated when teachers have relatively little training in effective classroom management (Hemmeter, Santos, & Ostrosky, 2008) and support with effective coping. This study suggests that not all teachers experience stress and burnout in the same fashion. Thus, determining the specific needs of teachers when building supports could optimize outcomes for both teachers and students.

Summary

Teacher stress and burnout are significant problems that affect our schools. Finding innovative and impactful ways to improve outcomes for students by supporting teachers may make a significant contribution to society. The present study suggests that single-item indicators of teacher stress and coping may be useful tools for identifying teachers in need of support and mitigating the negative effects of teacher stress on student development.

Authors' Note

Declaration of Conflicting Interests

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