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The Role of Teacher-Student Relationships in Predicting Teachers' Personal Accomplishment and Emotional Exhaustion

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Abstract

Teaching is a uniquely stressful profession. Though previous work has drawn attention to the high levels of burnout teachers report experiencing and its impact on students, comparatively less work has investigated what influences teachers' burnout itself. Guided by Lazarus' (1991) transactional model of stress and coping, the present study explored the links between the proximal resource of teachers' relationships with students and burnout. Specifically, we investigated the association between classroom aggregated teacher reports of relational closeness and conflict, and two components of burnout: personal accomplishment and emotional exhaustion. Results indicated that teachers who reported close relationships with their students also reported higher levels of personal accomplishment over the academic year, whereas more conflictual relationships were associated with increased emotional exhaustion. Implications for relational quality with students as a central influence on teachers' wellbeing are discussed.

Keywords: Teacher-student relationships, Burnout, Wellbeing, Teacher, Classroom, Elementary School

Introduction

Teaching is one of the most cognitively and emotionally demanding professions (Roeser, Skinner, Beers, & Jennings, 2012). When in the classroom, teachers are expected to frequently shift their attention from the learning needs of specific students to the needs of the entire group, problem solve in the moment, and regulate their own emotions without being able to leave or otherwise disengage from the classroom (Day & Leitch, 2001; O'Connor, 2008). A recent study highlighted that teachers receive inadequate training to cope with these demands (Schonert-Reichl, Kitil, & Hanson-Peterson, 2017), further taxing teachers' resources. It is unsurprising then that 59% of teachers report being under great stress (Markow, Macia, & Lee, 2013), the persistence of which can elevate feelings of job-related burnout (Herman, Hickmon-Rosa, & Reinke, 2018; Hoglund, Klingle, & Hosan, 2015). This is concerning if we consider that high levels of stress and burnout are one of the reasons why teachers leave their profession (Belcastro & Gold, 1983; Liu & Onwuegbuzie, 2012), which in turn destabilizes schools and negatively affects educational quality, particularly for low-performing schools (Ronfeldt, Loeb, & Wyckoff, 2013).

Teachers who report high levels of stress tend to have difficulty managing classroom dynamics and remaining focused on learning goals (Clunies-Ross, Little, & Kienhuis, 2008; Downer, Jamil, & Maier, 2012). As a result, students in these classrooms demonstrate lower academic achievement, more behavior problems (Greenberg, Brown, & Abenavoli, 2016), and higher levels of stress, as evidenced by their morning cortisol (Oberle & Schonert-Reichl, 2016). Given the negative influence of high levels of teacher stress on students' learning (e.g., Curbow, Spratt, Ungaretti, McDonnell & Breckler, 2000; Friedman-Krauss, Raver, Morris, & Jones, 2014; Yoon, 2002), and considering that teachers spend most of their working time in the

classroom, it is critical to understand classroom factors that affect teachers' mental health and wellbeing.

One such classroom factor is the quality of relationships teachers have with their students (Klassen, Perry, & Frenzel, 2012). For teachers, conflictual relationships with their students are a key source of stress (Friedman, 2006; Spilt, Koomen, & Thijs, 2011), whereas teachers identify close relationships with students as their main source of enjoyment, satisfaction, and professional motivation (Hargreaves, 2000; Quan-McGimpsey, Kuczynski & Brophy, 2013). As such, Spilt et al. (2011) theorize that relationships with students have an emotional and psychological value for teachers, thus highlighting the relevance that relationships with students have for teachers' mental health and wellbeing. The present study sought to empirically examine this idea by exploring key aspects of teacher-student relationship quality with the potential to influence teachers' mental health, operationalized as teacher burnout (Maslach, 1993). To do so, we applied Lazarus's (1991) transactional model of stress and coping to hypothesize and test how the quality of teacher-student relationships may contribute to systematic differences in teachers' burnout. Understanding this association is important to discerning how to prevent teacher burnout as a path toward improving educational quality.

Theoretical Perspective on Teacher-Student Relationships and Teachers' Burnout

The quality of teacher-student relationships is typically operationalized based on teacher perceptions of the closeness (e.g., warmth, connection, and openness) and conflict (e.g., negativity or lack of rapport) they experience in their relationship with a particular student (Sabol & Pianta, 2012). To understand how the quality of teacher-student relationships can play a role in teachers' occupational stress, and consequently in their experience of burnout, we rely on Lazarus' transactional model of stress and coping (1991). Applied to teachers (McCarthy,

Lambert, O'Donnell, & Melendres, 2009; Spilt et al., 2011), this model posits that stress derives from transactions between the teacher and the classroom environment in which the classroom provides the teacher with information (e.g., students are actively participating in the classroom activity, one student is constantly interrupting the lesson, some students spontaneously share information about themselves), and the teacher evaluates that information through two appraisals.

The *first appraisal* involves teachers judging whether the information is relevant to them and congruent with their goals. Only relevant information elicits emotions, and the valence of the emotions will depend on the congruency of the information with the teacher's goals; a teacher will experience positive emotions when the information is congruent with their goals (e.g., students are engaged in the instructional activity for a teacher who values students' participation), and negative emotions when it is incongruent (e.g., two students are misbehaving and constantly interrupting the lesson of a teacher who needs to ensure covering certain content in a specific timeframe). The experience of negative emotions leads to a *second appraisal*, in which teachers judge their ability to cope with the information that elicited the negative emotions, and experience stress when they appraise that they are unable to cope (e.g., feels defeated managing a specific student's misbehavior, not being able to leave the classroom when they need it). The experience of occupational stress over long periods of time may lead to burnout (Friedman, 2006).

Burnout (Maslach, 1993) is a psychological condition characterized by a lack of personal accomplishment – a positive trait that refers to feelings of competence and successful achievement in one's work –, feelings of emotional exhaustion (i.e., emotional frustration, fatigue, and strain), and a detached response to or cynicism about various aspects of the job (i.e.,

depersonalization)[1]. In this paper, we examined how the quality of teachers' relationships with students is associated with their feelings of personal accomplishment and emotional exhaustion. Next, we briefly describe our hypotheses and summarize the research supporting the links between teacher-student relational closeness and conflict, and teachers' personal accomplishment and emotional exhaustion, respectively.

Teacher-Student Relationship Quality and Teachers' Personal Accomplishment

Following Lazarus' (1991) first appraisal, as applied to teachers, teachers who perceive high levels of closeness in their relationships with students may experience positive emotions, as developing close relationships with students is relevant for teachers and congruent with their professional goals (Chang, 2013). Given that positive emotions likely influence teachers' feelings of personal accomplishment, we hypothesize that when teachers experience high levels of relational closeness with their students, they will report high levels of personal accomplishment. Aligned with our hypothesis, when middle school teachers are observed to provide high quality classroom-level interactions to students, they report higher job satisfaction (Virtanen, Vaaland, & Ertesvåg, 2019). In contrast, Milatz, Lüftenegger and Schober (2015) did not find evidence supporting the link between relational closeness and personal accomplishment in a sample of elementary school teachers. However, two limitations of their study should be noted. First, the small sample size (i.e., 88 teachers and two students per classroom) may explain why the estimated response surface analysis model exploring these associations did not fit the data. Second, the cross-sectional nature of their design did not account for the fact that teachers' experiences of relational closeness with their students may need time to contribute to their

[1] Data on depersonalization were not collected in the present study. The personal accomplishment and emotional exhaustion subscales of the Maslach Burnout Inventory (MBI) have demonstrated better internal consistency than the depersonalization subscale (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001), and thus were prioritized for data collection.

feelings of professional competence. As a result of these mixed findings, the extent to which teachers who experience high relational closeness with their students report high levels of personal accomplishment remains unclear.

In keeping with the first appraisal (Lazarus, 1991) as applied to teachers, teachers who perceive high levels of conflict in their relationships with students may experience negative emotions, as conflict represents a threat to teachers' goals (e.g., conducting instructional activities; Chang, 2013). Conversely, experiencing negative emotions may not necessarily result in lower feelings of personal accomplishment; this link will depend on other factors like teachers' attributions and perceptions. For instance, teachers may attribute their conflictual relationship with a student to factors external to themselves, like a student's personality or the education level of a student's parents (Chang, 2009). When teachers attribute conflict to these external factors, they report higher levels of personal accomplishment (Bibou-Nakou, Stogiannidou & Kioseogglou, 1999). Therefore, it could be the case that conflict negatively predicts teachers' personal accomplishment only in classrooms where the teacher perceives relatively extreme levels of conflict with several students. In these classrooms, explanations relying on attributions to external factors may not be enough for the teacher to make meaning of the negative emotions experienced under situations of conflict. Along these lines, Yudron, Jones, and Raver (2014) suggest using proportions or counts to represent the number of students in a classroom with whom the teacher perceives high levels of conflict. Accordingly, we did not anticipate teacher-student relational conflict to be negatively associated with teachers' personal accomplishment, unless teachers experience high conflict with a large number of students relative to conflict perceived with other students in the same classroom.

Teacher-Student Relationship Quality and Teachers' Emotional Exhaustion

As described earlier, the transactional model of stress and coping (Lazarus, 1991) posits that only negative emotions require a second appraisal. Applied to the teaching profession, in this second appraisal teachers judge their ability to cope with the information eliciting negative emotions (i.e., a sense of control). Teachers experience stress when unable to cope with the information eliciting negative emotions (i.e., lack of a sense of control), which, when experienced over a prolonged period of time, can lead to feelings of emotional exhaustion (Chang, 2009; Jennings & Greenberg, 2009). Consequently, we expect that when teachers experience high levels of relational conflict with their students, they will report high levels of emotional exhaustion. According to the same model, relational closeness will not influence teachers' emotional exhaustion, as closeness is likely to elicit positive, not negative emotions, and thus removes the need for a second appraisal.

Although prior work has not examined the direct link between teacher-student relational conflict and teachers' emotional exhaustion, emerging evidence indicates that middle school teachers' perceptions of the quality of their relationships with students indirectly influence their emotional exhaustion through their experiences of anger (Taxer, Becker-Kurz, & Frenzel, 2019). This echoes the strong evidence for students' behavior problems as one of the main sources of teachers' emotional exhaustion (Aloe, Shisler, Norris, Nickerson, & Rinker, 2014; American Psychological Association [APA], 2006; Hakanen, Bakker, & Schaufeli, 2006; Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010) in that such behaviors are associated with teachers' experience of anger and frustration (Chang, 2013); behavior problems often interrupt teachers' goals of following lesson plans, helping students' reach learning goals, and, overall, make their job more difficult (LaPointe, 2003). Although students' behavior problems may play a role in teachers' emotional exhaustion, there is also evidence to suggest that relational

processes, particularly conflict with students as perceived by teachers, may be a more powerful predictor of teachers' emotional exhaustion than students' actual problem behaviors (Hamre et al., 2008). For example, elementary school teachers report significantly different levels of stress in relation to similar students who display behavioral problems (Abidin & Robinson 2002; Greene, Beszterczey, Katzenstein, Park, & Goring, 2002), which aligns with a transactional perspective. From this standpoint, emotional exhaustion is conceptualized as a response to teachers' appraisals of disruptive behaviors, rather than to the behaviors themselves (Roseman, & Smith, 2001; Smith, & Lazarus, 1990). Indeed, a recent study (Aldrup, Klusmann, Lüdtke, Göllner, & Trautwein, 2018) found that middle school teachers' ratings of behavioral problems contribute to their emotional exhaustion through teachers' perceptions of relational quality with their students, underscoring the key role that relational processes with students play in teachers' emotional exhaustion. As a result, we anticipate that teacher-student relational conflict will play a role in the feelings of emotional exhaustion that elementary school teachers perceive, above and beyond students' behavioral problems.

The Present Study

In the current study, we examined the hypothesized associations of closeness and conflict in teacher-student relationships with the two components of teacher burnout: personal accomplishment and emotional exhaustion. In particular, we hypothesized that (1) for personal accomplishment, teachers who, on average, initially perceived high relational closeness with students in the classroom would report higher personal accomplishment later in the school year, when controlling for earlier personal accomplishment; and (2) for emotional exhaustion, teachers who, on average, initially perceived high relational conflict with students in the classroom would report higher emotional exhaustion later in the school year, when controlling for earlier

emotional exhaustion. Finally, we moved beyond the mean levels and hypothesized that (3) teachers who initially perceived relatively high relational conflict with a larger proportion of students in their classroom would report lower personal accomplishment later in the school year, when controlling for earlier personal accomplishment.

To operationalize relational closeness and conflict in the classroom, we used the classroom-level mean of teacher-reported closeness and conflict with individual students. Several prior studies use the mean to transform student-level characteristics to the classroom-level (e.g., Friedman-Krauss et al., 2014; Thomas, Bierman, & Powers, 2011). To get an estimate of the number of students within the classroom with whom the teacher perceived high conflict, we calculated the proportion of students in the classroom with teacher-reported conflict scores two standard deviations above the classroom mean (Yudron et al., 2014). The decision to calculate the number of perceived high-conflict relationships using the classroom as opposed to the sample mean was made to align with the theoretical intra-individual process previously discussed. Specifically, using the classroom mean allows for an estimate of each teacher's perception of extreme conflict *relative* to conflict they perceived with other students in the same classroom, as opposed to relative to conflict other teachers perceived with students in other classrooms. In order to isolate the association between relational closeness and conflict and components of teacher burnout, all models controlled for variables shown to be associated with aspects of burnout, including teacher-reported student aggressive behaviors, students' English language arts test scores, teacher's years of experience, teacher certification (regular or other), classroom type (general education vs. inclusion/self-contained), and school treatment status from the larger randomized-controlled trial from which we drew data for this analysis. In this way, we

were able to examine how teacher-student relationships may play a role in teacher burnout, beyond these other relevant factors.

Methods

Data and Participants

Data for this study come from Cohort one (2015-2016) of a large-scale, multi-cohort, school-randomized controlled efficacy trial of a social-emotional learning (SEL) and literacy intervention (Reading, Writing, Respect, and Resolution; 4Rs) paired with an intensive teacher coaching model designed to improve curricular effectiveness (MyTeachingPartner; MTP). The 4Rs+MTP program represents the integration of two well-validated protocols for supporting effective teaching practices and students' social and academic learning. The 4Rs component of the program is a universal, school-based intervention in conflict resolution and intergroup understanding that integrates social-emotional development into the language arts curriculum for students in grades K-5 (Jones, Brown, & Aber, 2011). MTP is an innovative professional development approach that relies heavily on teachers having an opportunity to get feedback about their practice through shared viewing of video from their classrooms and coach-teacher interaction through high-quality written feedback and questions to prompt teacher self-reflection on practice successes and challenges (Allen, Pianta, Gregory, Mikami, & Lun, 2011). The study was conducted in a large, urban city located in the northeastern United States, with program implementation occurring over the course of one academic year.

The majority of teachers (93%) reported on their mental health, wellbeing, and demographic characteristics in the summer (August) prior to the start of the academic year. Ten teachers completed the self-report survey between August and December. Teachers reported on the consented students in their class, including their relationship with each student, in the winter

(January – March), with 93% of teachers having completed reports on students by February. Summer and winter data collection are heretofore referred to as Time 1. All Time 2 data (teacher self-reports, teacher reports on students) were collected between May and July, with most teachers (73%) having completed surveys in June.

The total analytic sample for the current study included 2,047 3rd and 4th grade students taught by 145 teachers in 27 schools (see Table 1 for counts by treatment status). The sample was evenly distributed between 3rd (46.5%) and 4th (45%) grade classrooms with comparatively fewer mixed grade classrooms (8.5%). Approximately 51% of the students were female. The average age was 9 years (*SD* = .81). Across all schools, 86% of students were eligible for free or reduced price lunch (FLR), 28% were identified as having special education (SPED) status (19 classrooms consisted of 100% students identified as having an IEP), and 15% were identified as English Language Learners (ELL). The majority of students identified as Hispanic or Latino (64%) with the remaining identifying themselves as Black (28%), White (4.5%), or Other (3.5%).

Teachers were majority (92%) female, reported an average of 11 years of experience (*SD* = 7.52), and most (93%) reported holding a master's degree. The teacher sample was racially/ethnically heterogeneous; approximately 34% of teachers identified themselves as White, 25% as Hispanic or Latino, 30% as Black or African American, 6.5% as Multiracial, 3.5% as Asian, and 1% as Other. The average class size was 22 students (*SD* = 5.51, Range = 8 - 33*)*.

Procedures

All full-time teachers in participating treatment and control schools were eligible for the study. Active parental consent was attained through permission forms that research study staff

distributed to classrooms of students in September and October. Only those students with parental consent were included as participants.

Measures

Classroom-aggregated teacher-student relational closeness and conflict. Teacher-reported closeness and conflict with individual students was measured using the 15-item short-form of the Student-Teacher Relationship Scale (STRS; Pianta, 2001). Teachers responded to eight items assessing aspects of perceived closeness (e.g., "I share an affectionate warm relationship with this child") and seven items assessing aspects of perceived conflict (e.g., "This child and I always seem to be struggling with each other"). Items were rated using a 5-point Likert scale ranging from 1-*Definitely Does Not Apply* to 5-*Definitely Applies*. The STRS has demonstrated discriminant and predictive validity (Birch & Ladd, 1998; Hamre & Pianta, 2001). In the current sample, both the closeness and conflict subscales showed acceptable internal consistency (α = .78 and α = .93, respectively) and were moderately negatively correlated (r = -.32, p < .001; see Table 2 for bivariate correlations for all study variables). Both closeness and conflict were aggregated to the classroom-level.

Emotional exhaustion and personal accomplishment. Aspects of teacher wellbeing were measured using the Emotional Exhaustion (EE) and Personal Accomplishment (PA) subscales of the Maslach Burnout Inventory-Educator Survey (MBI-ES; Maslach, Jackson, & Schwab, 1996). EE includes nine items (e.g., "I feel emotionally drained from my work") to assess the extent to which teachers report feeling emotionally frustrated, strained, and/or fatigued. PA includes eight items (e.g., "I have accomplished many worthwhile things in this job") that capture teachers' self-evaluation of their job performance, related to a sense of efficacy and capability. Teachers were asked to read each item and report if they had ever felt that way

about their job using a 7-point Likert scale ranging from 0-*Never* to 6-*Every Day*. The MBI-ES has demonstrated construct (Byrne, 1991; Kokkinos, 2006), and both discriminant and predictive validity (Aloe et al., 2014; Hoglund, Klingle, & Hosan, 2015; Jeon, Buettner, Grant, & Lang, 2019). Both EE and PA showed acceptable internal consistency at Time 1 (α = .92 and α = .72, respectively) and Time 2 (α = .93 and α = .73). EE and PA were not significantly correlated at Time 1 (r = -.12, p = .17), and were significantly negatively correlated Time 2 (r = -.27, p < .001), indicating that EE and PA are capturing different aspects of teachers' burnout.

Classroom-aggregated student behavior problems. Teachers reported on aggressive behaviors that individual students exhibited using the Behavioral Assessment System for Children (BASC) – Aggression subscale (Reynolds & Kamphaus, 1998). Specifically, the BASC includes 14 items using a 4-point Likert scale (ranging from *Never* to *Almost always*) concerning how often individual students display specific behaviors such as "complains about rules" or "blames others." The BASC-Aggression subscale showed high internal consistency (α = .95) in the current sample. This measure of aggressive behaviors was used as a proxy for students' behavior problems, and was aggregated to the classroom-level. Within a prior school-randomized controlled trial of the 4Rs program, children's exposure to intervention schools was found to impact the aggression subscale, demonstrating linear change over two years (Jones et al., 2011).

Student, Teacher, and Classroom Demographics. Data on student demographic characteristics, including race/ethnicity and gender, and academic achievement were collected via school records provided by the local Department of Education. Teacher (e.g., years of experience) and classroom (e.g., class size) demographics were provided via teacher-report on

the teacher surveys administered at Time 1. All student-level demographic information was aggregated to the classroom-level.

Analytic Plan

An investigation of complete missing data, the prevalence of which ranged from 3% to 9%, showed data to not be missing completely at random (MCAR; Little, 1988). Though there is no formal test for missing at random (MAR), the data leveraged for the present study includes a rich set of covariates found to be associated with burnout in prior work, which limits the likelihood that an unobserved variable exists that would exert high levels of influence on the outcomes of interest. As such, we assume missing at random and proceed with single-level multiple imputation using Blimp v1.1. (Keller & Enders, 2017). Twenty separate imputed datasets were created.

The imputed datasets were analyzed in Mplus version 7 to estimate the association between Time 1 teacher-reported relational closeness and conflict, and Time 2 teacher-reported EE and PA, controlling for Time 1 EE and PA. Two models were estimated: one including average classroom-level teacher-reported relational closeness and conflict (Model 1), and a second model that also included the proportion of students two standard deviations above the mean classroom-level conflict (Model 2). Models were estimated simultaneously to account for the correlation between the residual variance of the two dependent variables. Additional classroom-level covariates included teacher-reported student aggressive behaviors, students' English Language Arts (ELA) test scores, teacher's years of experience, teacher certification (regular or other), classroom type (general education vs. inclusion/self-contained), and treatment

status.[2] All independent variables were allowed to freely covary, resulting in fully saturated models with perfect fit.

Prior to analysis, unconditional two-level models were evaluated for each outcome of interest, with classrooms at level-one and schools at level-two. Between school variation ranged from 1% (Time 2 PA) to 10% (Time 2 EE). As a sensitivity check, models were evaluated clustering the standard errors by school. Results were not sensitive to the school-level clustering. As such, all models presented are one-level path models that do not account for between school clustering. Standardized estimates are presented in tables and text. Additionally, due to the timing of survey completion for Time 1 and 2, there is some variability in the amount of time that passed between the pre- and post-test assessments of burnout across teachers. As a robustness check, we added two covariates to our base models: (1) time lag in days between the summer and spring teacher survey completion dates and (2) number of days into the school year that the spring teacher survey was completed (relative to 8/4/15, the date the summer survey was deployed). Results remained the same with these timing variables included in the models, so, for the sake of parsimony, we report only the base models. Cohen's f^2 was calculated to assess the local effect (i.e., variance explained by an independent variable of interest relative to variance explained by other independent variables in the model) of all variables significantly associated with each outcome (Cohen, 1988; Selya, Rose, Dierker, Hedeker, & Mermelstein, 2012). In line with convention, an f^2 effect size of .02, .15, and .35 is interpreted as small, medium, and large,

[2] A sensitivity analysis was conducted in which Model 1 was evaluated separately for treatment and control teachers and classrooms. Consistent with results from the combined sample, relational closeness was significantly positively associated with PA in both the treatment and control groups. Inconsistent with results for the combined sample, relational conflict was not significantly associated with EE in either group. The small sample sizes for the treatment (N = 66) and control (N = 79) groups suggest we are underpowered to detect the small effect size ($f^2 = .04$) for conflict related to EE observed in the combined sample.

respectively (Cohen, 1988). The present study's sample (N = 145) is able to detect with 80% power effect sizes of .11 and higher.

Results

Table 3 presents descriptive statistics for teacher-reported emotional exhaustion and personal accomplishment, classroom-level relational conflict and closeness, and the proportion of students for whom teachers reported levels of relational conflict greater than two standard deviations above the classroom mean prior to imputation (statistics did not differ markedly when averaged across the 20 imputation datasets). On average, teachers reported high levels of PA and low levels of EE. Similarly, teachers reported low levels of relational conflict and high levels of relational closeness. The average classroom was characterized by a low proportion of students (M = .05, SD = .09) for whom teachers reported experiencing relational conflict two standard deviations greater than the classroom mean.

Table 4 shows results for prediction models 1 (i.e., average classroom-level teacher-reported relational closeness and conflict) and 2 (i.e., proportion of students two standard deviations above the mean classroom-level conflict), which are described in the following sections for PA and EE, respectively. Refer to Figure 1 for a visual representation of significant results from model 1.

Associations between Relational Closeness and Conflict and Teacher Personal Accomplishment

Model 1 results indicate that classroom-level teacher-reported closeness was positively associated with Time 2 PA, controlling for Time 1 (β = .32, $p \leq .001$, f^2 = .12; see Figure 1). This indicates that a one standard deviation increase in teachers' perceptions of closeness was associated with a .32 increase in teachers' reports of PA. Average classroom ELA achievement

was negatively associated with PA (β = -.18, $p \leq .05$, $f^2 = .03$), such that teachers in classrooms with higher ELA achievement reported lower PA. Teachers who reported greater EE at Time 1 reported significantly lower PA at Time 2 (β = -.27, $p \leq .001$, $f^2 = .10$). Considering Model 2 (see Table 4), and contrary to our hypotheses, the proportion of students for whom teachers reported levels of relational conflict greater than two standard deviations above the classroom mean was not statistically significantly related to PA (β = .10, $p = .50$).

Associations between Relational Closeness and Conflict and Teacher Emotional Exhaustion

Referring to Model 1 results, only classroom-level teacher-reported conflict positively predicted Time 2 teacher-reported EE, controlling for Time 1 (β = .23, $p \leq .05$, $f^2 = .04$). This indicates that on average, teachers reporting one standard deviation greater than the mean for relational conflict with students experienced a .23 increase in Time 2 EE. Teachers who reported greater PA at Time 1 reported significantly lower EE at Time 2 (β = -.16, $p \leq .05$, $f^2 = .05$).

Discussion

The present study investigated links between teachers' perceptions of relational quality with their students and feelings of burnout. We examined this in a sample of 3rd and 4th grade teachers working in high-needs schools, who may have been at particular risk for experiencing burnout (e.g., Hoglund et al., 2015; Pas, Bradshaw, & Hershfeldt, 2012). Aligned with calls to emphasize teachers' psychological wellbeing (Jennings & Greenberg, 2009), and guided by Lazarus' transactional model of stress and coping, we specifically studied whether classroom-level measures of teachers' perceptions of relational closeness and conflict with their students was associated with two components of burnout: personal accomplishment and emotional exhaustion. Results indicated that relational closeness and conflict were a source of teachers' personal accomplishment and emotional exhaustion, respectively. Taken together, these findings

are some of the first to empirically support the theoretical model outlining the importance of student-teacher relationships for teachers' wellbeing (Spilt et al., 2011). Following is a discussion of the empirical and practical significance of these findings, where this work should next embark, and limitations to consider.

Relational Closeness is Linked to Teachers' Personal Accomplishment

Our findings provided support for the link between teacher-student relational closeness during the year and teachers' personal accomplishment at the end of the year. As hypothesized, only closeness, and not conflict, was significantly and positively linked with teachers' personal accomplishment. This result indicated that when teachers perceive warmth, connection, and openness in the relationships with their students they are more likely to report feelings of competence and achievement in their own work. Such links between closeness and personal accomplishment are consistent with Lazarus' transactional model of stress and coping; developing close relationships with students is meaningful for teachers, and thus is likely to elicit positive emotions, which in turn translate into feelings of personal accomplishment. However, it is important to note that we were unable to explicitly test this mechanism because data on teachers' specific appraisals (e.g., whether relationships with students are relevant to them and congruent with their goals) or emotional experiences (e.g., whether relationships with students elicit positive emotions in teachers) were not collected.

The fact that the local effect size of the link between relational closeness and teachers' personal accomplishment was moderate (f^2 = .12) and similar to that of their Time 1 reports of personal accomplishment (f^2 = .11) holds implications for how we can support teachers' psychological wellbeing. This is important given that most prior work has either reverse coded personal accomplishment, or considered low scores as symptomatic of burnout (e.g., Brouwers &

Tomic, 2000; Egyed & Short, 2006; Goddard, O'Brien, & Goddard, 2006; Grayson & Alvarez, 2008; Shin, Noh, Jang, Park, & Lee., 2013; Skaalvik & Skaalvik, 2007; Steinhardt, Jaggars, Faulk, & Gloria, 2011), thus limiting our understanding of how to enhance teachers' personal accomplishment. Based on findings from the present study, resources may be well invested in helping teachers to develop close relationships with their students in support of the occupational efficacy of teachers. However, most prior studies that target the development of warm and supportive teacher-student relationships have focused *only* on student outcomes, further limiting our understanding of how teacher-student relationship interventions may also support teachers. For instance, a short-term intervention that focused teachers' attention on what they have in common with specific students (Gehlbach et al., 2016) demonstrated gains in teachers' perceptions of relational quality with their students, and in students' academic achievement. Similarly, an intervention that instructs elementary school teachers to intentionally develop positive relationships with students (Cook et al., 2018) showed improvements in teacher reports of relational quality, and students' observed behaviors. Results from our study raise the question about whether such efforts to improve teacher-student relationships may also show impacts on teachers' psychological wellbeing, particularly their personal accomplishment. Further school-based intervention work to improve teacher-student relationships should consider including teacher burnout measures in order to provide experimental evidence on how closer relationships with students impact teachers.

Before seriously contemplating its application to intervention, this finding must be contextualized by the high levels of personal accomplishment reported in this sample. The mean level of personal accomplishment at both Time 1 and Time 2 exceeded five on a 7-point scale (0-*Never* to 6-*Every Day*), where 5 indicates "A Few Times a Week." The standard deviation

indicated that most teachers reported at or above a three (i.e., "A Few Times a Month"), indicating moderate to high levels across a substantial proportion of teachers in this sample. Given that the average teacher reported such high levels of competence and achievement related to their work, the field would be well-advised to consider the value-added of increasing the experience of a positive psychological construct already highly endorsed. That said, personal accomplishment (M = 5.25, SD = 0.65) in this sample was more negatively skewed than in other samples where mean levels were more moderate, ranging from 3.47 (SD = 0.41; Hoglund et al., 2015) to 4.37 (SD = .83; Taris, Le Blanc, Schaufeli, & Schreurs, 2005). There could be something unique about this sample of teachers (e.g., most held a Master's degree or higher) related to their reports of higher mean levels of personal accomplishment. Given the skewed data and uniqueness of the sample, it will be important to replicate this work in other samples of teachers.

Relational Conflict is Not Linked to Teachers' Personal Accomplishment

Counter to our hypothesis, the proportion of students in the classroom for whom teachers perceived extreme levels of conflict was not linked to teachers' personal accomplishment. This finding was especially surprising given that we defined extreme cases relative to mean conflict within classrooms. We opted for this approach to look at individual teacher perceptions of conflict, irrespective of how high or low they may have rated conflict with students compared to other teachers. It is possible that such extreme cases are more salient when teachers attribute their conflictual relationship with a student to internal factors (e.g., their training, skills, etc.), than when they attribute them to external factors such as students' personality or chronic family stress (Chang, 2013; Mavropoulou & Padeliadu, 2002). This raises questions about whether the proportion of extreme cases of conflict is differentially salient related to teachers' personal

accomplishment depending on their beliefs and attributions or other school factors (e.g., supports available to teachers). Future research should explore this hypothesis.

Relational Conflict is Linked to Teachers' Emotional Exhaustion

As hypothesized, relational conflict emerged as linked to increases in teachers' emotional exhaustion, whereas relational closeness was unrelated. This finding suggests that when teachers perceive negativity or lack of rapport in the relationships with their students, they are more likely to report feelings of emotional frustration, fatigue, and strain. This result is also consistent with Lazarus' transactional model of stress and coping in that conflict with students will likely elicit negative emotions in teachers, which over time can lead to feelings of emotional exhaustion. Considering that emotional exhaustion is the component of burnout most associated with teachers' depression (Steinhardt et al., 2011) and motivation to leave the profession (Skaalvik & Skaalvik, 2011), this finding speaks to the need for supporting teachers to manage the relational conflict they experience with students. This result is especially compelling given that we accounted for teacher ratings of students' aggressive behaviors, and thus set a higher bar for finding a link between relational conflict and teachers' emotional exhaustion. In other words, relational conflict with students matters for teachers' emotional exhaustion beyond teachers' perceptions of students' aggressive behaviors, thus underscoring the importance of adopting a relational perspective (and not only a reduction in behavior problems) to target teachers' emotional exhaustion.

Different from the moderate local effect size observed for closeness, the local effect size of conflict related to teachers' emotional exhaustion was small (f^2 = .04). This finding suggests that interventions intended to support teachers' psychological wellbeing should focus on helping teachers to build close relationships with students, rather than reducing conflict. Yet, future

experimental work is needed to provide stronger evidence for this claim. Despite the small local effect size, the relationship between conflict and teachers' emotional exhaustion should not be dismissed. Given the high stability of teachers' emotional exhaustion from Time 1 to Time 2 (r = .69***) and the high local effect size of Time 1 related to Time 2 emotional exhaustion (f^2 = .82), it is of substantive interest that conflict emerged as significantly linked to emotional exhaustion, even after controlling for teachers' perceptions of students' aggressive behaviors. Because small effect sizes often do not replicate across different samples (Loannidis, 2005), future work should investigate the replicability of this finding.

Limitations and Future Directions

Due to the paucity of empirical work investigating this intraindividual psychological process applied to teacher burnout, this study's reliance on teacher-reported measures was intentional. Given the dynamic nature of relationships, however, future work would benefit from bringing in different perspectives, such as student-reports or observational data about student-teacher relationship qualities. It is common to find low agreement between multiple reporters (Johnson & Hannon, 2014; Kunter & Baumert, 2006), so it might be that what is supported here is solely an intraindividual psychological process that would need to be revisited and modified to accommodate the dynamics of multiple perspectives. Further, relationships with students are not the only ones relevant to teachers; colleagues (Travers & Cooper, 1996) and parents (Prakke, van Peet, & van der Wolf, 2007) are also important sources of stress for teachers. In addition to relationships, teachers also report characteristics of the school environment (e.g., organization, climate) as sources of stress (Shernoff, Mehta, Atkins, Torf, & Spencer, 2011). The field would benefit from looking more comprehensively at all of the environmental features that could

contribute to personal accomplishment and emotional exhaustion, as a means of identifying the most active mechanisms.

Additionally, there is a case to be made for the importance of preventing emotional exhaustion in support of teachers' sense of personal accomplishment. Emotional exhaustion significantly predicted personal accomplishment with an effect size (f^2 = .10) in line with both Time 1 personal accomplishment (f^2 = .11) and relational closeness (f^2 = .12). Though only conflict emerged as a modest predictor of emotional exhaustion, more work needs to be done to understand how we might prevent teachers' increased feelings of emotional fatigue throughout the year. In this vein, more work is needed to better understand how emotional exhaustion and personal accomplishment influence one another. Though emotional exhaustion was a stronger predictor of personal accomplishment, personal accomplishment also significantly negatively predicted emotional exhaustion. The present study provides evidence that different constructs are significantly associated with these two aspects of burnout; future work is warranted to understand how influencing one aspect, either directly or indirectly, holds implications for the other.

Though not central to the aims of this study, it is notable that classroom aggregated teacher reports of student aggressive behavior were not significantly associated with teacher-reported emotional exhaustion. This finding runs counter to a recent meta-analysis that found student misbehavior to be most strongly related to emotional exhaustion of all burnout components (Aloe et al., 2014). It could be, as Spilt et al. (2011) theorize, that relational quality both moderates and mediates the association between student behavior and teacher wellbeing. Future work is needed to better understand how relational quality and student behavior jointly influence teacher wellbeing.

Data used for the present study come from a randomized-controlled trial (RCT) of an intervention intended to support implementation of an intervention that targeted students' social-emotional skills. Despite teacher burnout and teacher-student relational quality not being direct targets of the intervention, it is possible that the intervention influenced both (e.g., access to coaches might have made teachers feel more supported in positively interacting with students). Though we controlled for intervention status, which was not significantly associated with either outcome of interest, it will be important to replicate these findings using samples of teachers engaged solely in business-as-usual.

Future work would also benefit from investigations in which teachers report on relational quality at many or different points throughout the academic year. In the current study, teachers reported on relational quality mid- (January-March) and end-of-year (May-June). Though extant research provides evidence of the relative stability of closeness and conflict within an academic year (Doumen et al., 2008; Hartz, Williford, & Koomen, 2017; Mejia & Hoglund, 2016; Portilla, Ballard, Adlet, Boyce, & Obradović, 2014), there is still significant variation in teacher-reported relational quality, especially for closeness. It could be that teachers who start the year experiencing different levels of emotional exhaustion and personal accomplishment perceive and proceed to develop relationships with students differently. Whether or not all significant paths supported by the present study replicate when teachers report on relational quality at different time points is a remaining question.

Finally, and related to the previous point, though the present study provides rigorous evidence that student-teacher relationships are associated with components of teacher burnout, there is existing literature that also provides evidence in support of the reverse pathway. For instance, a recent experimental trial of the CARE for teachers program (Jennings et al., 2017)

indicated that promotion of teachers' wellbeing leads to improvements in the quality of teacher-student interactions, thus underscoring the potential bidirectional nature of these processes. The reciprocal interactions between teacher-student relationships and teachers' burnout beg the question of whether or not all of the paths for which there is empirical evidence emerge longitudinally. It would be important to know if relational quality drives changes in burnout, if burnout drives changes in relational quality, or if they contribute to changes in each other over time. Given that burnout is a teacher characteristic and relational quality is constructed and shared with the student, the point of intervention that the field may converge on will be different dependent on these longitudinal associations. For these reasons, we see investigations of bidirectional associations as a critical next step for the field.

Conclusion

Teaching is a uniquely stressful profession. Approximately half of K-12 teachers report experiencing high levels of daily job-related stress – a proportion matched only by the nursing profession (Gallup, 2014). This stress has been linked to increased levels of teacher burnout (Steinhardtet al, 2011), which is concerning for teachers' own mental health (e.g., Steinhardt et al., 2011; Shin et al., 2013), for student outcomes (e.g., Oberle, & Schonert-Reichl, 2016), and for schools' functioning (e.g., Skaalvik & Skaalvik, 2011; Ronfeldt et al., 2013). The present study highlights how the proximal resource of relationships with students are related to teachers' experience of burnout over the school year.

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Table 1.
Analytic sample counts by treatment status.

	Treatment	Control	Total Sample
Students	861	1,186	2,047
Teachers	66	79	145
Schools	14	13	27

Table 2.
Bivariate correlations for all study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Time 2 EE	1												
2. Time 2 PA	-.27***	1											
3. Time 1 EE	.69***	-.28***	1										
4. Time 1 PA	-.17*	.36***	-.12	1									
5. Conflict	.21*	-.06	.03	.15†	1								
6. Closeness	.03	.27***	.18*	.03	-.32***	1							
7. Prop. of Students 2 SD Above the Classroom Conflict Mean	-.08	.07	-.11	-.34***	-.31***	.01	1						
8. Aggressive Behaviors	.09	.07	-.07	.18*	.77***	-.27***	-.31***	1					
9. ELA Test Score	.01	-.16†	.13	-.01	-.32***	.12	.00	-.39***	1				
10. Treatment Status	.05	.09	-.05	-.05	.11	.07	.00	.20*	-.19*	1			
11. General Ed. Classroom	-.04	-.06	.10	.11	-.21**	-.01	.09	-.36***	.47***	.01	1		
12. Teacher's Years of Exp.	-.01	-.13	.13	-.25***	.08	-.04	-.04	-.02	.12	.18*	.19*	1	
13. Regular Certification	.01	-.02	.09	-.13	-.06	.06	.05	.03	.16†	.14†	.07	.38***	1

Note. $N_{classrooms} = 145$. Correlations reported were calculated using data prior to multiple imputation. EE = emotional exhaustion; PA = personal accomplishment; Prop. of Students 2 SD Above the Classroom Conflict Mean = Proportion of students 2 standard deviations above classroom conflict mean; ELA = English language arts; Teacher's Years of Exp. = Teacher's years of experience; General Ed. Classroom = General Education classroom.
*** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. $^{\dagger}p \leq .10$.

Table 3.
Descriptive statistics for study variables.

	Time 1		Time 2	
	Mean (SD)	Range	Mean (SD)	Range
Personal Accomplishment	5.25 (0.65)	2.29 – 6.00	5.19 (0.68)	3.00 – 6.00
Emotional Exhaustion	2.18 (1.41)	0.00 – 5.75	2.44 (1.53)	0.11 – 5.83
Classroom-level Relational Conflict	1.83 (0.50)	1.07 – 3.83	1.81 (0.53)	1.06 – 3.39
Classroom-level Relational Closeness	4.10 (0.45)	2.48 – 4.98	4.19 (0.48)	2.42 – 4.98
Prop. of Students 2 SD Above the Classroom Conflict Mean	0.05 (0.09)	0.00 – 0.17	0.05 (0.05)	0.00 – 0.20

Note. Statistics reported were calculated using data prior to multiple imputation. Response scale anchors are as follows: Personal Accomplishment and Emotional Exhaustion (0-*Never* to 6-*Every Day*); Relational Conflict and Closeness (1-*Definitely does not apply* to 5-*Definitely applies*).

Table 4.
Results for regression analyses evaluating the associations between classroom mean-level relational closeness and conflict, and time two teacher-reported emotional exhaustion and personal accomplishment.

	Model 1						Model 2			
	EE			PA			EE		PA	
	Estimate (S.E.)		f^2	Estimate (S.E.)		f^2	Estimate (S.E.)		Estimate (S.E.)	
Closeness	.03	(.07)		.32***	(.08)	.12	.02	(.07)	.33***	(.07)
Conflict	.23*	(.10)	.04	-.18	(.12)		.26**	(.10)	-.16	(.12)
2SD	-	-		-	-		.18	(.12)	.10	(.15)
Time 1 EE	.66***	(.06)	.83	-.27***	(.08)	.10	.69***	(.06)	-.26***	(.08)
Time 1 PA	-.16*	(.07)	.05	.29**	(.10)	.11	-.12†	(.07)	.32***	(.08)
Agg. Beh.	-.05	(.11)		.16	(.13)		-.02	(.11)	.18	(.13)
ELA	.02	(.08)		-.18*	(.09)	.03	.03	(.08)	-.18†	(.09)
Teacher's Years of Exp.	-.09	(.09)		-.02	(.09)		-.11	(.08)	-.03	(.09)
Regular Certification	-.02	(.07)		.04	(.08)		-.03	(.07)	.04	(.08)
General Ed.	-.02	(.07)		.08	(.09)		-.06	(.07)	.09	(.09)
Classroom Treatment	.00	(.07)		.06	(.08)		.00	(.07)	.06	(.08)
R^2	.52			.33			.55		.35	

Note. $N_{classrooms} = 145$. Standard errors are in parentheses. All estimates are standardized. Local effect sizes (f^2) are reported for significant relationships yielded from Model 1. Models were estimated across 20 imputation datasets. EE = emotional exhaustion; PA = personal accomplishment; S.E. = standard error; Agg. Beh. = classroom mean aggressive behaviors; ELA = classroom mean English Language Arts test score; Teacher's Years of Exp. = Teacher's years of experience; General Ed. Classroom = General Education classroom.
*** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. † $p \leq .10$.

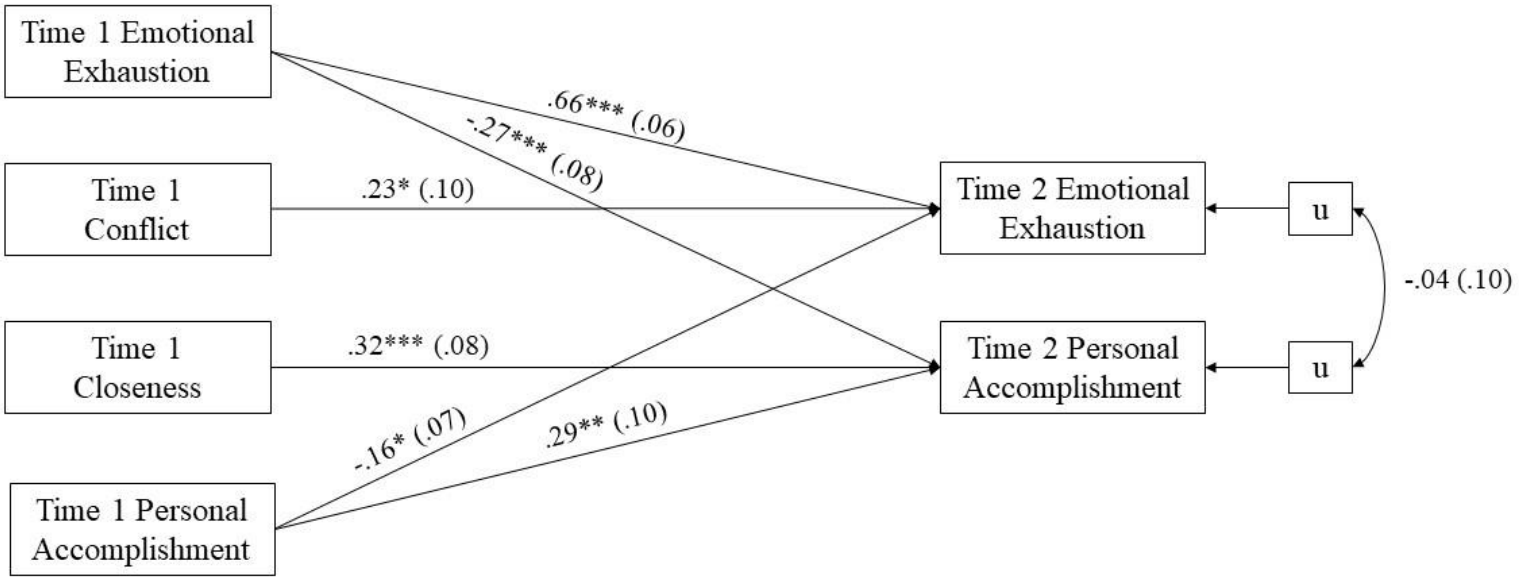

Figure 1. Results for Model 1 regression analyses evaluating the associations between Time 1 classroom mean level relational closeness and conflict, and Time 2 teacher-reported emotional exhaustion and personal accomplishment. Standardized estimates are presented with standard errors in parentheses. Single-headed arrows represent predictive paths. Double-headed arrows represent correlations between variables. u = residual variance.
* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.